ISO9001:2015 Quality system certification

ASTG 0128W024-L240X240N

SERIES SPECIFICATION

2025. 9. 17

Contents

1.Model Definition

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

ASTG0128W024-L240X240N-S0TT	
ASTG	ASTG Serial Display Series
0128	The LCD screen size is 1.28 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;
4	FLASH Capacity: 2Mbyte=1;4Mbyte=2;8Mbyte=3;16Mbyte=4;32Mbyte=5;64Mbyte=6;128Mbyte=7;256Mbyte=8;512Mbyte=9;1Gbyte=X;
L240X240	The LCD screen resolution is L240X240;
N	R: Resistor TP; C: Capacitor TP; N: No Touch;
S	S: Plastic housing; F: Metal housing;
0	0: 5V power supply; 1: 5~30V power supply;
T	Serial Port 1 Communication Mode: T: TTL Communication; D: RS485 Communication; E: RS232 Communication;
T	Serial Port 2 Communication Modes: T: TTL Communication; D: 485 Communication; E: 232 Communication;

2.Product Description

2.1 Product Model

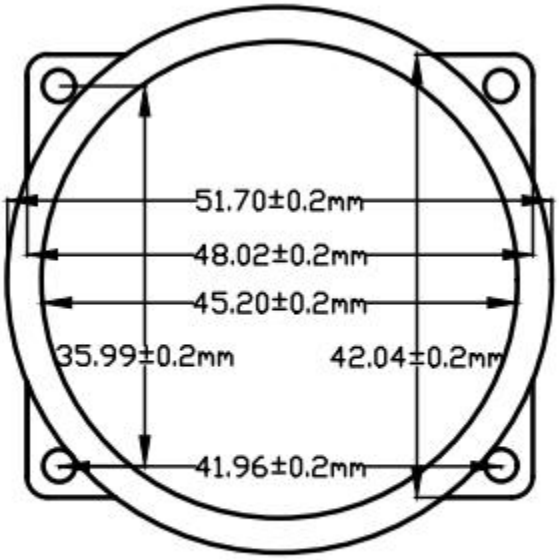
Metal housing

Plastic housing

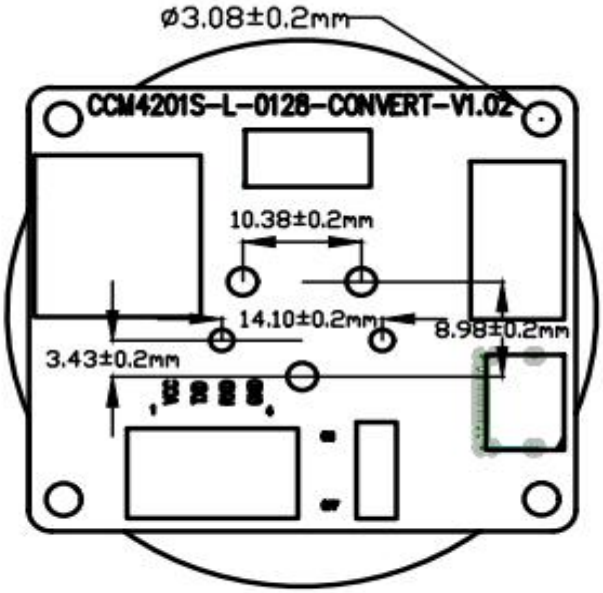
Model Series	Specifications
ASTG0128W024-L240X240N-S0TT	ASTG Series, 1.28-inch 240x240 resolution display, DC5V power supply, one TTL serial port, 16Mbyte SPI NOR Flash, non-touch, plastic housing;
ASTG0128W024-L240X240N-F0TT	ASTG Series, 1.28-inch 240x240 resolution display, DC5V power supply, one TTL serial port, 16Mbyte SPI NOR Flash, non-touch, metal housing;

2.2 Product Dimensions

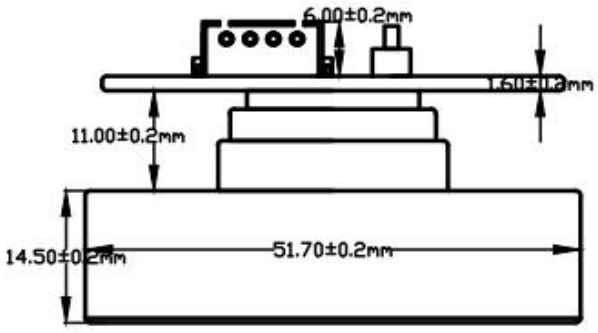
Display Size	Product Line	Overall Dimensions	Effective display area size	Display size
1.28 inches	ASTG0128W024-L240X240N (Metal version)	51.7*51.7*31.5mm	32.00mm（Diameter）	45.2mm（Diameter）
1.28 inches	ASTG0128W024-L240X240N (Plastic case)	50.6*50.6*31.5mm	32.00mm（Diameter）	45.2mm（Diameter）



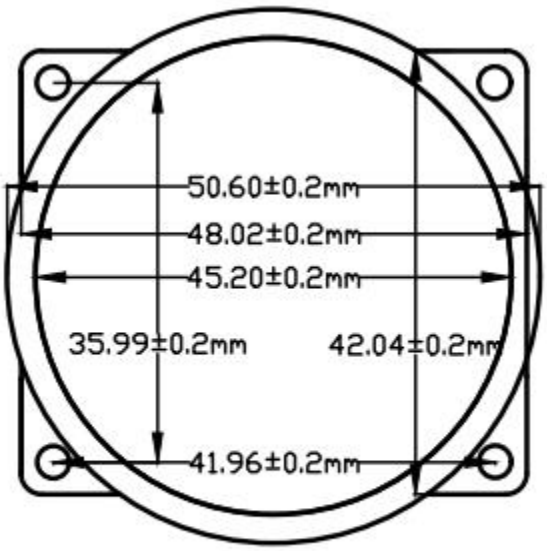
Front view (metal casing version)



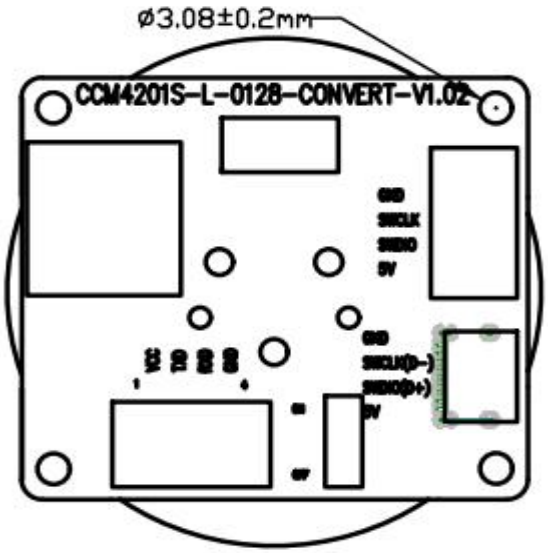
Rear view (metal casingversion)



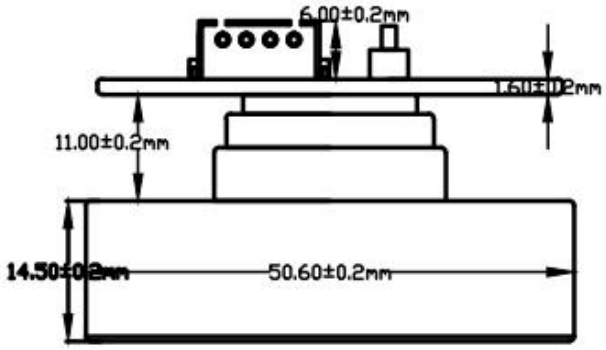
Side view (metal casingversion)



Front view (plastic casing version)



Rear view (plastic casingversion)



Side view (plastic casingversion)

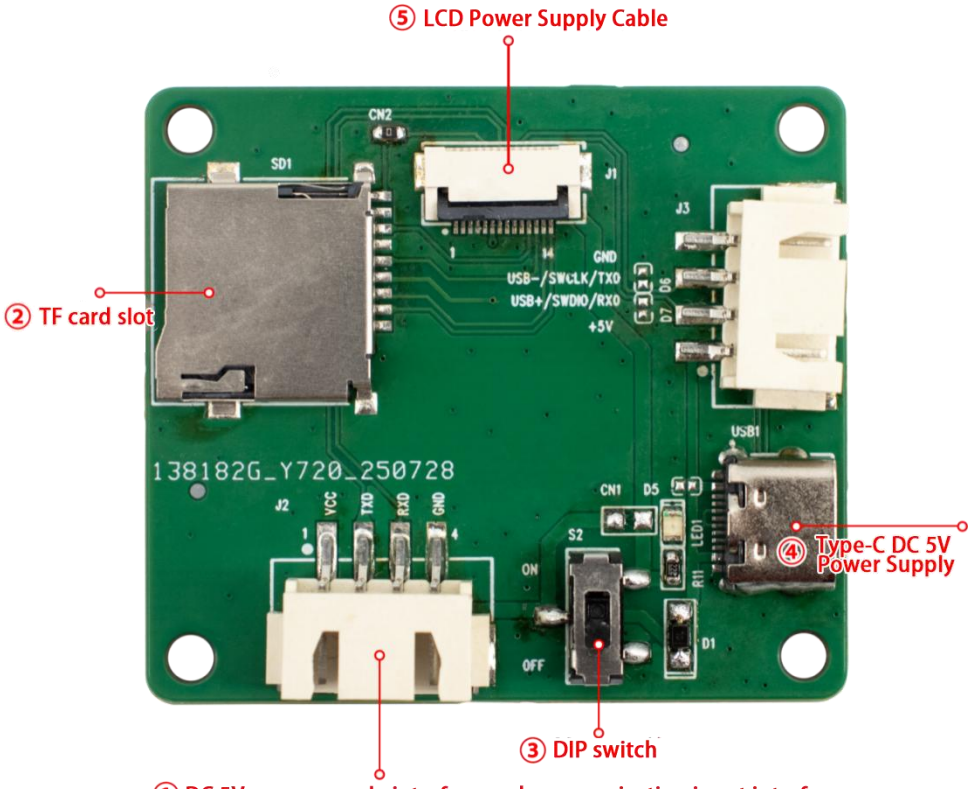
2.3 Product Specifications

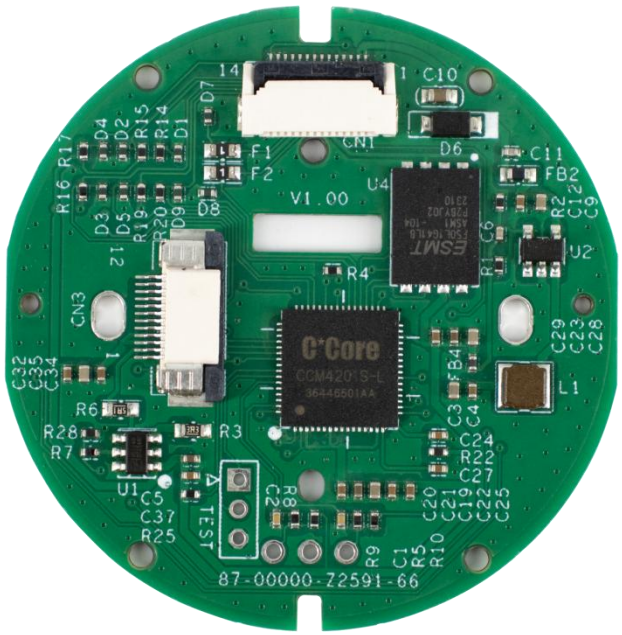
Product Specifications		
Hardware Performance	Model Series	ASTG0128W024-L240X240N
	Display	1.28" TFT LCD
	Resolution (Px)	240X240
	Color	65,536 colors
	Brightness	250 cd/m^2
	Backlight	LED (Does not support backlight adjustment)
	LED lifespan	>20,000 hours
	Touchscreen	Touchless
	CPU	200MHz Cortex-M4F
	System memory	16MByte(SPI NOR Flash)
	Operating Space	32MB
	RTC	Not supported
	Buzzer	Not supported
	Power-off Data Preservation	3S Auto Save
	Program Download Methods	TF card
	Communication port	TTL Communication
	Connector Specifications	4-Pin PH 2.54mm Terminal Block
Electrical	Rated Power	Maximum 0.3W

Specifications	Voltage Range	DC5V
	Allow power loss	<5ms
Environmental specifications	Operating Temperature	-10℃~50℃
	Storage temperature	-30℃~70℃
	Ambient humidity	10–90% RH (non-condensing)
	Seismic resistance	10–25 Hz (X, Y, Z directions, 2g/30 minutes)
	Cooling method	Natural air cooling
Other parameters	Overall Dimensions	42*42.97*21.9mm
	Effective display area size	32.00mm
	Display size	45.2 mm
	Complete machine net weight	47g（Metal housing） 42g（Plastic housing）
	Corresponding software	HMILite

3.Hardware Overview

3.1 4-Pin PH 2.54mm Terminal Block Pin Assignment





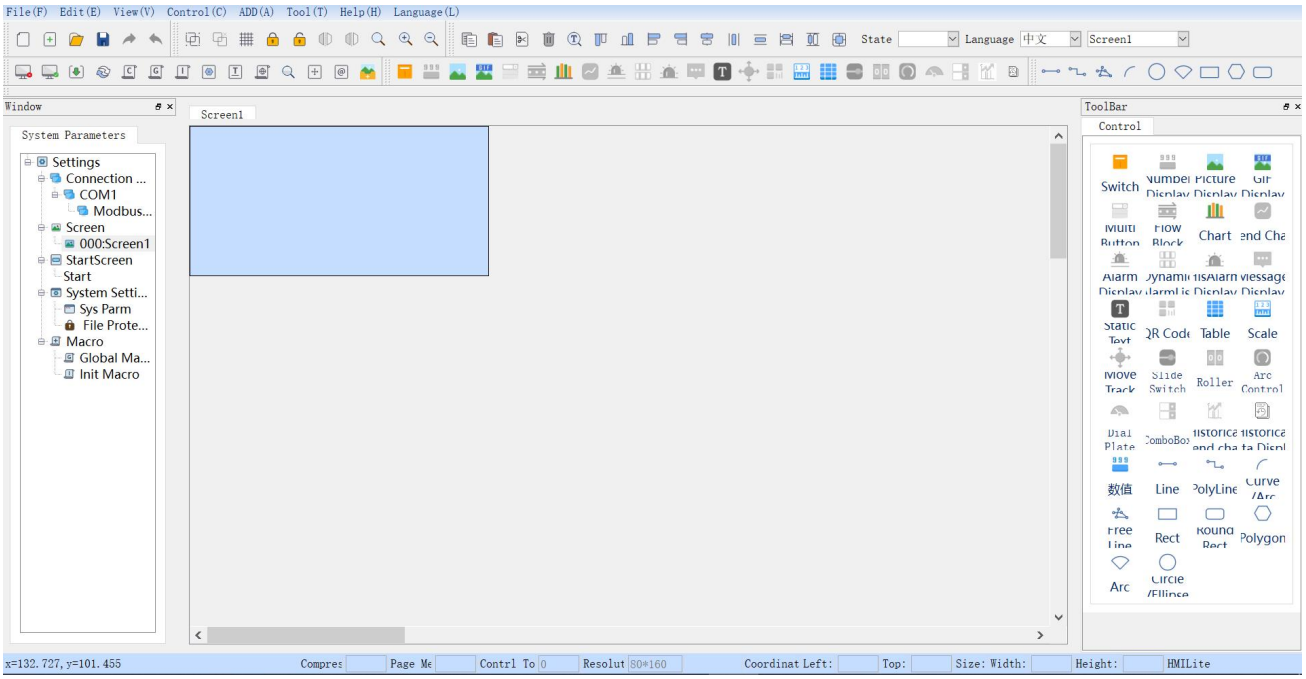
3.2 The image below shows the TF card used in our product, formatted as FAT32 with a capacity of 32GB or less.

The following image is for reference only.

Port Definitions			
Device Location Number	**Note**		
①	DC 5V power supply interface and communication input interface		
②	TF card slot		
③	DIP switch		
④	Type-C DC 5V Power Supply		
⑤	LCD Power Supply Cable		
4-Pin PH 2.54mm Terminal Block①			
Pin	**Definition**	**Power Input**	**TTL**
1	VCC	Power Supply Positive	
2	TXD		3.3V TTL RXD
3	RXD		3.3V TTL TXD
4	GND	Power supply negative	GND

4. Upper-Level Configuration Software Manual

4.1 Software Development---Corresponding software HMILite



The **HMILite** HMI software is a fully customizable application that customers can freely edit. All customer applications are developed based on this HMI software, which consists of a rich library of controls that can be freely combined to achieve the desired functionality:

The controls include:

Switch button	Includes "digit buttons," "character buttons," "indicator lights," "screen buttons," "function buttons," and "multistate buttons" for touch operation of connected devices and status monitoring.
Numerical Input and Display	Supports multiple base input and display formats, ASCII code input and display, for presenting monitored address values (single-screen ASCII display + up to 16 QR code controls).
Flowing Block	Animated graphics simulating the flow state of liquid within a pipeline
Static Text/Tables/Scales	Various basic shapes, including lines, circles, ellipses, rectangles, and more
Image display and GIF animation	Image display box showing one or more images

instrument	Bar chart, gauge, ring, displaying a certain status value of data
trend chart	Real-time dynamic display of data trend graphs for monitored addresses(Trend chart + historical trend chart supports up to 4 charts)
Historical data display device	Display data collected by the data collector in tabular form.
Historical trend chart	Real-time dynamic display of data acquisition device trend graphs(Trend chart + historical trend chart supports up to 4 charts)
multifunction button	A switch button that allows you to quickly and easily access various functions(Add up to 2 features)
movement trajectory	Control address data by dragging and rolling blocks
QR code	Dynamically generate QR codes, scan to access websites, make payments, and more(Single screen ASCII display + up to 6 QR code controls)
Alarm display	Displays alarm information generated by the current device (divided into digital alarms and analogue alarms). Before using this control, you must first configure the alarm settings (up to(Up to 128 digital alarms can be set up)
Dynamic alarm	Used to display current alarms, it differs from alarm controls in that dynamic alarm bars display current alarm content in the form of scrolling text.
History alarm display	Display all generated alarm messages , 3S detection storage, maximum storage of 3 entries
drop-down box	Select the corresponding item/status from the drop-down list.
slide switch	Create a slider area to change the value of a specified word address by pressing the slider left/right or up/down.
roller	Create a data area and modify the current value by scrolling up and down.
Arc adjustment	Display the current value using an arc pattern, and modify and adjust the current value by dragging the slider.
dial	Use a dial to display data such as time, progress, speed, etc.

Extended functions of the host configuration software:

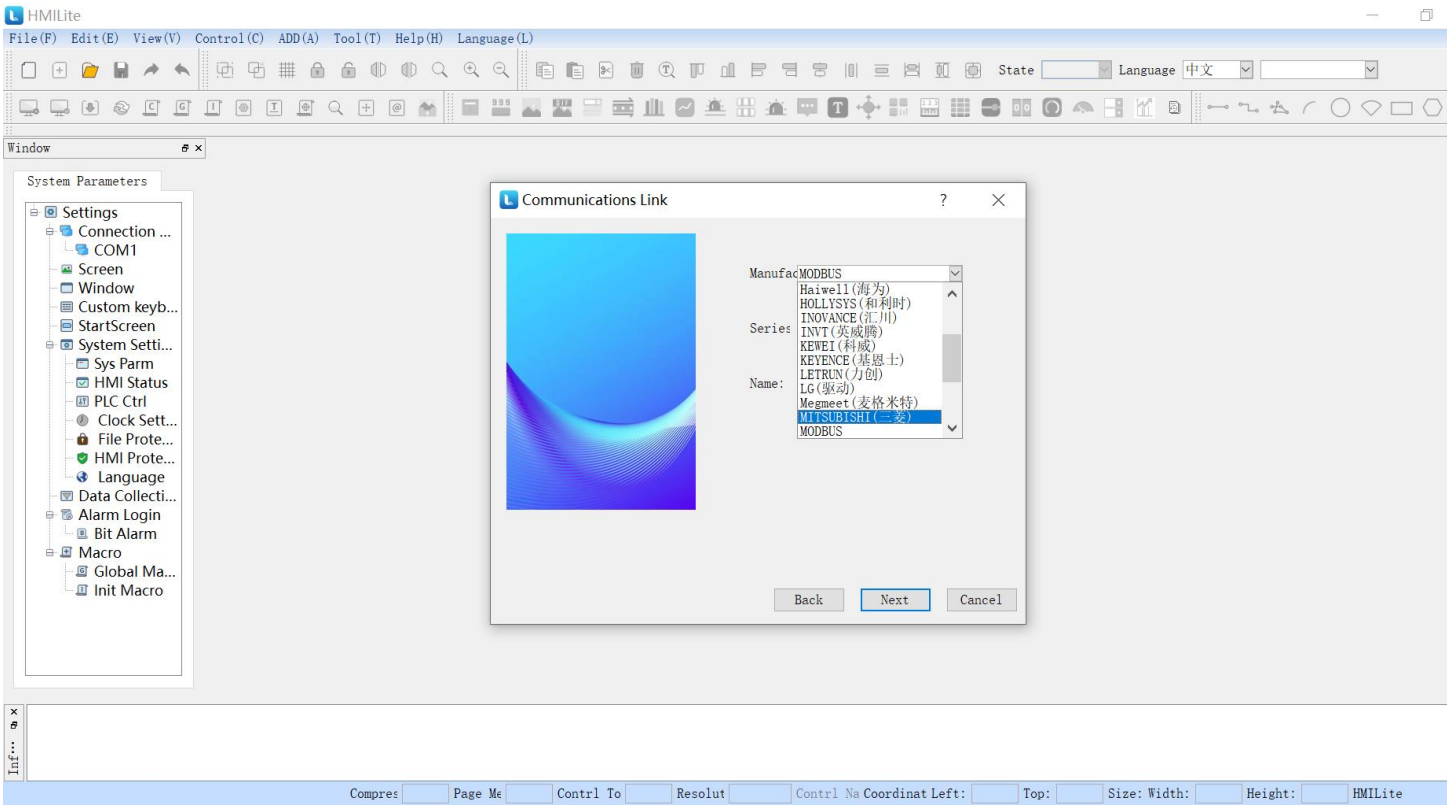
macro instruction	C language programming, implementing various complex logic or functions(Macro program (MarcoRun.dat) maximum size 136KB, maximum number of custom protocol lines 100, maximum number of read-only or read-write variables in macro commands 100)

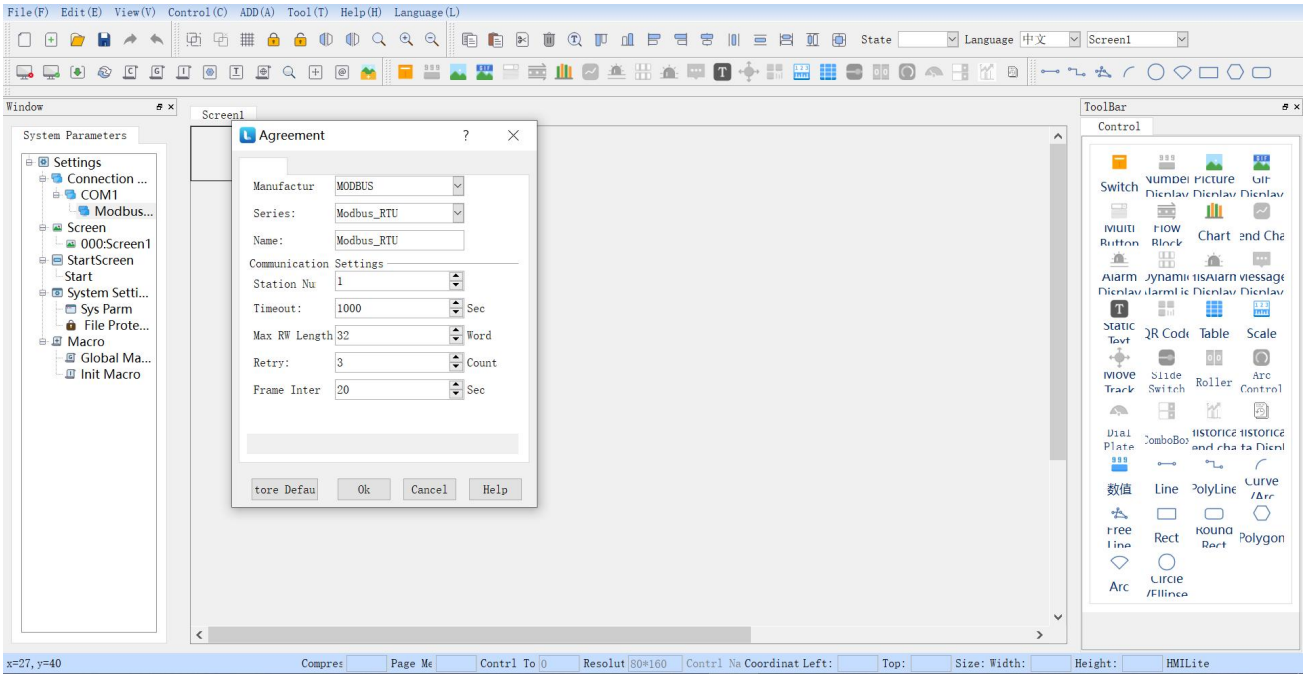
PLC control	HMI controlled by PLC
HMI protection	The HMI can be used normally within a specified period of time. If the time exceeds the time specified by the user, the HMI will jump to the specified screen previously set by the user. In the specified screen, the user only places the ‘ panel protection unlock button ’ below the function button(Only supports 3 levels)
file protection	Do you need to enter a password to open the project?
data collection	Data collection for temperature, pressure, humidity, etc(Data collection supports up to 64KB)
language	Supports multiple languages(Supports up to 4 languages. Alarm display, message display, and drop-down menu only support Chinese and English.)
startup screen	Users can customise the boot logo screen.
offline simulation	Before compiling and downloading the screen to the HMI device, you can use the offline simulation function provided by HMILite to check the correctness and display effect of the configuration screen.
online simulation	Online simulation allows you to communicate with devices such as PLCs via your personal computer (HMILite configuration software must be installed first) without using HMI.
Supports multiple controller communication protocols	Compatible with various PLCs, variable frequency drives, servo controllers, microcontroller control systems, etc. (Mitsubishi, Panasonic, Omron, Delta, Xinjie, Yonghong, Siemens, Keyence, LG, Modbus, custom communication protocols, etc.). Users only need to select and call the function directly in the software when operating.
Custom add image library	Supports custom image library addition. Users can capture their favourite images and load them into a custom image library for use.
image library	Extensive image library supporting multiple formats including PNG, JPG, GIF, BMP, etc., vector image library, and seamless scaling without jagged edges.
Custom keyboard	Supports custom keyboards, allowing you to create keyboard styles according to your needs.

4.2 protocol configuration

Users can configure and run MODBUS RTU, Mitsubishi, Siemens, Delta, Xinjie and other protocols via the host computer.

Open the **HMILite** configuration software and click [**New Project**]. You can select the required communication protocol in [**New Project**], or modify the selection of the required communication protocol within the project. Open the protocol settings below the com1 port to make changes, as shown in the figure below.





5.Reliability testing

5. High and low temperature ageing test

Test environment: High and low temperature ageing test chamber

Test temperature: -20° to 60°

Test process: Place the product in the high and low temperature ageing test chamber. Conduct ageing tests with alternating high and low temperatures of 60° and -20°, and observe whether any reset reboots, display abnormalities, or functional abnormalities occur during the test process and after the test is completed.

test data

Product model	temperature	humidity	test results
ASTG0128W024-L240X240N	High temperature 60°	60%	No abnormal phenomena such as rebooting, freezing, or screen freezing. Functions normally.
	Low temperature -20°	60%	No abnormal phenomena such as rebooting, freezing, or screen freezing. Functions normally.
	Alternating high and low temperatures (-20° to 60°)	60%	No abnormal phenomena such as rebooting, freezing, or screen freezing. Functions normally.