

GW6L-B0(L256)

PROFINET Protocol Gateway Module

User Manual



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Product Instruction

1.1 Product Overview

The GW6L-B0(L256) is a Slice PROFINET protocol conversion gateway module. As a slave module, the GW6L-B0(L256) can be combined with other gateway slave modules to form a gateway kit. Different combinations of gateway kits are able to bi-directionally transmit 256-byte IO data between two masters, such as EtherCAT, PROFINET, EtherNet/IP, CC-Link, PROFIBUS-DP, DeviceNet masters, etc., which has the advantages of high real-time performance, optimized system configuration, simplified on-site wiring, and improved system reliability. It realizes the communication demand of connecting different networks quickly and efficiently.

1.2Product Characteristics

- Supports interconversion of multiple types of protocols EtherCAT, PROFINET, EtherNet/IP, CC-Link, PROFIBUS-DP, DeviceNet in a two-by-two arrangement.
- Supports bi-directional transfer of IO data between two protocols The data interaction length supports 256 bytes.
- small volume
 - Compact and small footprint.
- easy diagnosis

Innovative channel indicator design, close to the channel, channel status at a glance, easy to detect and maintain.

• easy configuration

Simple configuration and support for mainstream EtherCAT, PROFINET and EtherNet/IP masters.

- easy installation
 - DIN 35 mm standard rail mounting

Adopts pop-up terminals and standard RJ45 network interface, wiring is convenient and fast.

2 Designation Rules

2.1 Gateway Designation Rules

$\frac{\mathbf{GW}}{(1)} \underbrace{\stackrel{\mathbf{6}}{(2)}}_{(2)} \underbrace{\stackrel{\mathbf{L}}{(3)}}_{(4)} \underbrace{\stackrel{\mathbf{B}}{(5)}}_{(6)} \underbrace{(\mathbf{L256})}_{(6)}$

Number	Meaning	Description		
(1)	Gateway	GW: Gateway		
	Abbreviations			
(2)	Product	6: Slice		
	Series			
(3)	Gateway	L: Limited length version		
	Versions	U: Universal Universal version		
		E: Extended		
(4)	bus protocol	A: EtherCAT		
		B: PROFINET		
		C: EtherNet/IP		
		D: CC-Link		
		E: DeviceNet		
	F: PROFIBUS-DP			
G: Modbus TCP		G: Modbus TCP		
		H: CANopen		
		I: CC-Link IE Field Basic		
		J: MECHATROLINK		
(5)	Module Type	0: Slave module		
		1: Master Module		

(6) form L256: Data interaction length 256 bytes

2.2 Gateway Suite Designation Rules

$\frac{\mathbf{GW}}{(1)} \underbrace{{}^{\mathbf{6}}_{(2)}}_{(2)} \underbrace{{}^{\mathbf{5}}_{(3)}}_{(4)} \underbrace{{}^{\mathbf{6}}_{(5)}}_{(6)} \underbrace{{}^{\mathbf{6}}_{(7)}}_{(7)} \underbrace{{}^{\mathbf{(L256)}}_{(8)}}_{(8)}$

Number	Meaning	Description			
(1)	Gateway Abbreviations	GW: Gateway			
(2)	Product Series	6: Slice			
(3)	Gateway	L: Limited length version			
	Versions	U: Universal Universal version			
		E: Extended			
(4)	bus protocol	A: EtherCAT			
		B: PROFINET			
		C: EtherNet/IP			
		D: CC-Link			
		E: DeviceNet			
		F: PROFIBUS-DP			
		G: Modbus TCP			
		H: CANopen			
		: CC-Link IE Field Basic			
		J: MECHATROLINK			
(5)	Module Type	0: Slave module			
		1: Master Module			
(6)	bus protocol	A: EtherCAT			
	B: PROFINET				
		C: EtherNet/IP			
		D: CC-Link			
		E: DeviceNet			
		F: PROFIBUS-DP			
		G: Modbus TCP			
		H: CANopen			
		I: CC-Link IE Field Basic			
		J: MECHATROLINK			
(7)	Module Type	0: Slave module			
		1: Master Module			

(8)

comment form | L256: Data inter

L256: Data interaction length 256 bytes

2.3 List of commonly used modules/kits

Model	Product Description
GW6L-A0(L256)	Slice Gateway EtherCAT Slave Module (fixed length 256 bytes)
GW6L-B0(L256)	Slice Gateway PROFINET Slave Module (fixed length 256 bytes)
GW6L-C0(L256)	Slice Gateway EtherNet/IP Slave Module (fixed length 256 bytes)
GW6L-D0(L256)	Slice Gateway CC-Link Slave Module (fixed length 256 bytes)
GW6-P20HM	Slice Gateway Power Modules
GW6-CVR	Slice Gateway Terminal Cover
GW6L-A0B0(L256)	Slice Gateway EtherCAT Slave to PROFINET Slave Kit (fixed length 256
	bytes)
GW6L-B0B0(L256)	Slice Gateway PROFINET Slave to PROFINET Slave Kit (fixed length 256
	bytes)
GW6L-B0C0(L256)	Slice Gateway PROFINET Slave to EtherNet/IP Slave Kit (fixed length 256
	bytes)
GW6L-B0D0(L256)	Slice Gateway PROFINET Slave to CC-Link Slave Kit (fixed length 256
	bytes)

Note: The gateway kit contains gateway power module \times 1, gateway module \times 2, and gateway terminal cover \times 1.

3 Product Parameters

3.1 General parameter

General technical parameters				
Size	Power Module	106 x 61 x 22 mm		
	GW6-P20HM			
	Gateway Module	106 x 61 x 25.7 mm		
	GW6L-B0(L256)			
	Terminal cover GW6-CVR	106 x 61 x 7.7 mm		
Weights	Power Module	110 g		
	GW6-P20HM			
	Gateway Module	80 g		
	GW6L-B0(L256)			
	Terminal cover GW6-CVR 20 g			
Operating temperature	-10°C~+60°C			
Storage temperature	-20°C~+75°C			
Relative humidity	95%, non-condensing			
Protection class	IP20			
Installation	DIN 35 mm standard rail mounting			

3.2 Power supply parameters

Power supply parameters		
Power Module	Operating	24 VDC (18V~30V)
GW6-P20HM	power	
	output voltage	5 VDC
	Output Current	2 A
Gateway Module	Operating	5 VDC
GW6L-B0(L256)	power	

Operating Current	400 mA
power (output)	2 W

3.3 Interface parameter

PROFINET interface	parameters
Product model	GW6L-B0(L256)
Bus protocol	PROFINET
Data transmission	Ethernet/PROFINET CAT5 cable
medium	
Transmission	≤100 m (station to station distance)
distance	
Transmission rate	100 Mbps
Bus interface	2 x RJ45
Process data	256 Bytes
volume: downlink	
Process data	256 Bytes
volume: Uplink	

4 Panel

4.1 Product structure

Name of each part of the product



4.2 Application

Gateway kit (power module + gateway module 1 + gateway module 2 + terminal cover)

Take the GW6L-B0C0(L256) gateway kit as an example, the application method is shown in the following figure.



4.3 Indicator light function

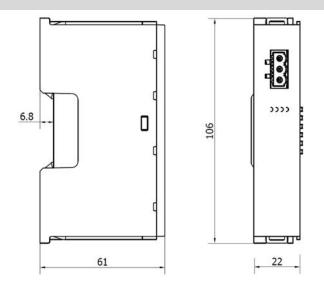
Power Modu	Power Module Identification and Indicator Lights			
Name	Markings	Color	State	State Description
5V power	Р	GREEN	ON	Working power supply is normal
indicator			FLASHING	80% overload, cut off power to back-end
				loads
			OFF	The product is not powered or the power
				supply is abnormal
Load	0	RED	OFF	Not overloaded
indicator			ON	Load up to 90%
			FLASHING	80% overload, cut off power to back-end
				loads

Gateway Module Logo and Indicator				
Name	Markings	Color	State	State Description
Power	Р	GREEN	ON	Working power supply is normal
indicator			OFF	The product is not powered or the power supply is abnormal
System	L	GREEN	ON	Data conversion interactions are normal
Indicator Lights			OFF	Data conversion interaction exception
warning	В	RED	OFF	Profinet bus parameters are set properly.
indicator			FLASHING	Profinet bus parameters not set or
				abnormal
Operation	R	GREEN	ON	The system is functioning normally
status indicator			OFF	System operational anomalies
Network Port	IN	ORANGE	FLASHING	Connection established with data
Indicator				interaction
			OFF	No data interaction or exception
		GREEN	ON	Establish a network connection
			OFF	No network connection established or abnormal
	OUT	ORANGE	FLASHING	Connection established with data
				interaction
			OFF	No data interaction or exception
		GREEN	ON	Establish a network connection
			OFF	No network connection established or abnormal

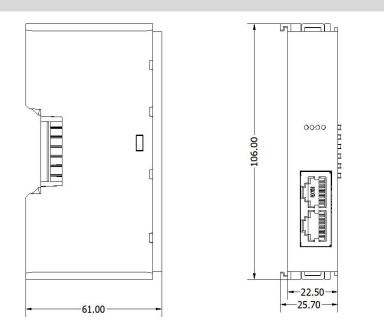
5 Installation and uninstall

5.1 Overall Dimension

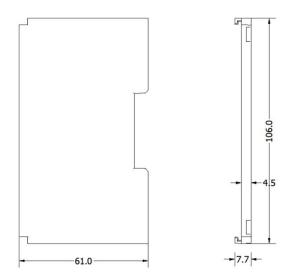
Power module outline specifications (unit:mm)



Gateway Module Form Factor (unit:mm)



End cap outline specifications (unit:mm)



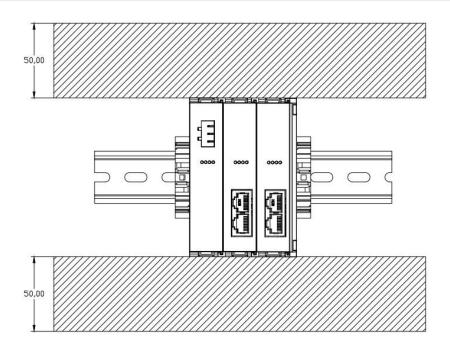
Note: All are installed with DIN 35 mm standard rail, DIN rail specification 35*7.5*1.0, 35*15*1.0 (unit mm).

5.2 Installation Guide

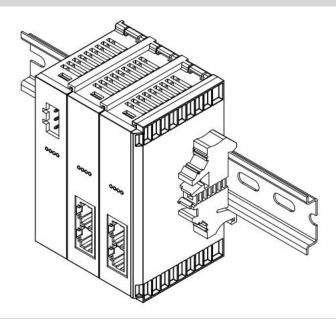
Precautions for installation\uninstall

- Ensure that the cabinet is well ventilated (e.g., the cabinet is fitted with an exhaust fan).
- Do not install this equipment next to or above equipment that may cause overheating.
- Be sure to install the module vertically and maintain air circulation around it (at least 50mm air circulation space above and below the module).
- Once the module is installed, be sure to secure the module by installing rail mounts on both ends.
- Be sure to disconnect the power supply when installing/uninstalling.

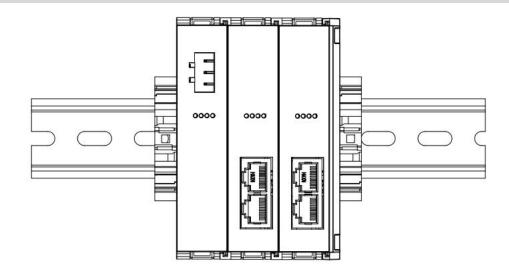
Minimum clearance for module installation (≥50mm)



Ensure that the module is installed vertically



Be sure to install the rail mounts



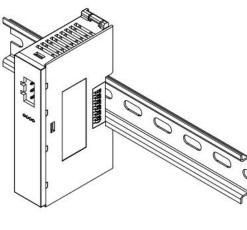
5.3 Installation and uninstall steps

Module Installation and uninstall				
Module Installation	1. Install the power supply module first on the rail that has been fixed.			
Steps	2. Install the gateway module to the right of the power module in order.			
	3. After installing all gateway modules, install the end caps to complete the			
	installation of the modules.			
	4. Install the rail fixings on both ends of the power module and end cap to fix			
	the module.			
Module uninstall	1. Loosen the guide rail fixings at both ends of the module.			
procedure	2. Use a one screwdriver to pry off the module snap.			

3. Pull out the uninstalled module.

5.4 Installation Diagram

Power Module Installation

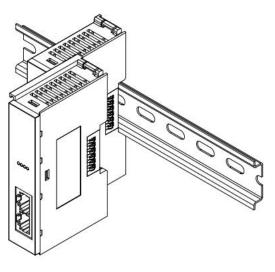


Step

Align the power module guide rail slot vertically with the guide rail, press the power module, and hear the "click" sound, the module is installed in place, as shown in the left figure ①.

1

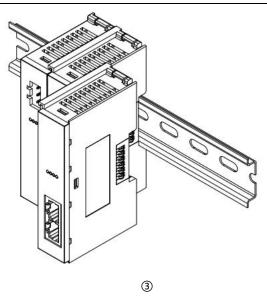
Gateway Module Installation



2

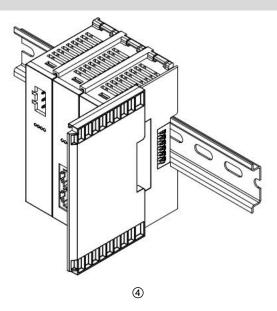
Step

Align the slot of the gateway module rail with the right side of the power supply module and push it in as shown in Figure 2 on the left. Press the gateway module firmly, and when you hear a "click" sound, the module will be installed in place.



Follow the steps in the previous step of installing the gateway module to install the second gateway module, as shown in Figure ③ on the left.

End cap retrofit



Step

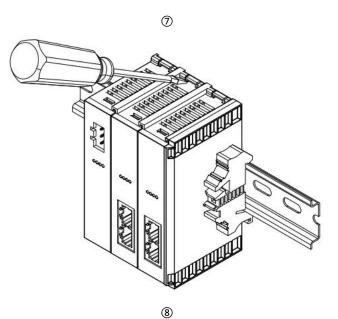
Install the end cap on the right side of the last module as shown in Figure ④ on the left, and refer to the installation method of the gateway module.

Retrofitting of guide rail fixings Step Å Fasten the left side of the power supply module and the right side of the end cap module, and install the rail fixings as shown in Figure (5) on the left. 5 Push the rail fixture firmly in the direction of the gateway module to ensure that the module is mounted tightly, and use a screwdriver to lock the rail fixture as shown in Figure 6 on the left. 6

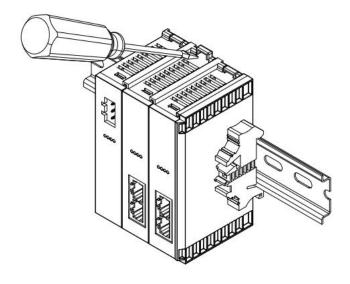
Uninstall

Step

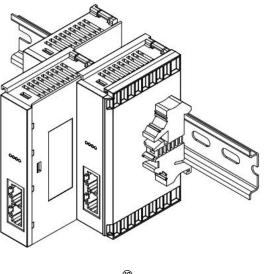
Loosen the rail retainer at one end of the module with a screwdriver and move it to one side, making sure there is a gap between the module and the rail retainer, as shown in Figure ⑦ on the left.



Insert a flat head up into the snap of the module to be uninstalled, and exert force in the direction of the module sideways (hear the rattling sound), as shown in Figures (a) and (a) on the left. **Note: Each module has a snap at the top and bottom, all operate in this** way.



9



Uninstall the module by doing the opposite of installing the module, as shown in Figure (1) on the left.

6 Wiring

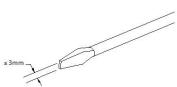
6.1 wiring terminal

wiring terminal						
power supply	extremity	3P				
terminal	wire diameter	22~16 AWG 0.3~1.5 mm ²				
bus interface	2×RJ45	Category 5+ UTP or STP (STP recommended)				

6.2 Wiring instructions and requirements

Wiring Tool Requirements

The power supply terminal adopts screwless design, and the installation and removal of cables can be operated with a one-type screwdriver (specification: \leq 3mm).



Stripped Wire Length Requirements

The recommended cable stripping length for the power terminals is 10 mm.



Power module wiring method

For single stranded hard wires, after stripping the corresponding length of wire, press down the button while inserting the single stranded wire.

Multi-stranded flexible wires, after stripping the corresponding length of wire, can be directly connected or supporting the use of



the corresponding standard specifications of the cold compression end (tube-type insulated terminal, the reference specifications are shown in the table below), press down the button at the same time the line will be inserted.

The power supply terminal specifications are shown in the table below:

Tube Insulation End Specification Sheet							
specification	model number	Cross-sectional area of					
	conductor mm ²						
	E0310	0.3					
	E0510	0.5					
	E7510	0.75					
	E1010	1.0					
Tube insulated terminal L with a length of 10 mm	E1510	1.5					

Power supply wiring precautions

• PE must be reliably grounded.

Bus Wiring Method

Standard RJ45 network interface with standard crystal connector is used, and the pin assignment is shown in the table below.

pin	code			
number				
1	TD+			
2	TD-			
3	RD+			
4	"one"			
	radical in			
	Chinese			

1
8
1
8

	characters				
	(Kangxi				
	radical 1)				
5	"one"				
	radical in				
	Chinese				
	characters				
	(Kangxi				
	radical 1)				
6	RD-				
7	"one"				
	radical in				
	Chinese				
	characters				
	(Kangxi				
	radical 1)				
8	"one"				
	radical in				
	Chinese				
	characters				
	(Kangxi				
	radical 1)				

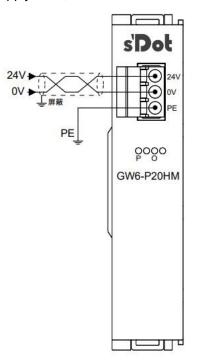
Precaution

• Double shielded (braided mesh + aluminum foil) STP cables of category 5 or higher are recommended as communication cables.

• The length of the cables between the devices must not exceed 100 m.

Power supply wiring: power module 3P terminal

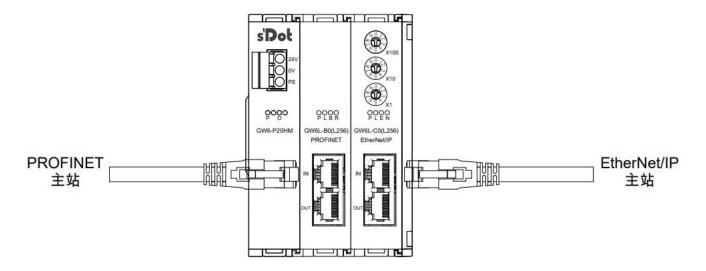
Using the DC24V power module, refer to the wiring method and connect the power supply according to the circuit shown in the following figure, and at the same time ground PE reliably (twisted-pair wire is recommended for the power supply cable).



*电源接线推荐使用两芯屏蔽双绞线,并可靠接地

6.3 wiring diagram

Taking GW6L-B0C0(L256) as an example, the topology connection method is shown below.



7 Operation

7.1 Description of process data

Uplink data (256 bytes)							
functionality	Meaning	address range					
	The input data of gateway module 1 in the kit						
input data	corresponds to the output data of gateway module 2	First 255 butos					
input data	The input data of gateway module 2 in the kit	First 255 bytes					
	corresponds to the output data of gateway module 1						
	0x00 (Hex): no data interaction between gateways						
status bit	0x01 (Hex): there is data interaction between the	Last 1 buta					
Status bit	gateways	Last 1 byte					
	0x02 (Hex): Gateway power-down state						
	Downlink data (256 bytes)						
functionality	Meaning	address range					
output data	Output data of the gateway module	First 255 bytes					
reserve	NULL	Last 1 byte					

7.2 Module Configuration Description

7.2.1 GW6L-A0B0(L256) in TwinCAT3 and TIA Portal V17 Software Environment

7.2.1.1 Preliminary

- hardware environment
 - Module preparation
 This description uses the GW6L-A0B0(L256) gateway kit as an example
 - > Two computers, one pre-installed with TwinCAT3 software and one pre-installed with
 - **TIA Portal V17 software**
 - > Shielded cables for EtherCAT
 - > Shielded cables for PROFINET
 - One Siemens PLC
 This description is based on the example of Siemens S7-1200 CPU 1214C DC/DC/DC
 - > Two switching power supplies
 - > Module mounting rails and rail mounts
 - > Device Configuration Files

Configuration file access: https://www.solidotech.com/documents/configfile

• Hardware configuration and wiring Follow "5 Installation and uninstall" and "6 Wiring".

7.2.1.2 Communication connection in TwinCAT3 software

1、 Preset GW6L-A0(L256) Configuration File

a. Place the ESI configuration file (EcatTerminal-XB6_V3.10_ENUM.xml) in the TwinCAT installation directory under "C:\TwinCAT\3.1\Config\Io\EtherCAT" as shown below.

名称^	修改日期	类型	大小
Beckhoff EPP1xxx.xml	2017/12/14 11:34	XML 文档	480 KB
Beckhoff EPP2xxx.xml	2017/12/28 12:22	XML 文档	1,811 KB
Beckhoff EPP3xxx.xml	2017/12/8 8:48	XML 文档	2,099 KE
Beckhoff EPP4xxx.xml	2016/12/22 10:57	XML 文档	500 KE
Beckhoff EPP5xxx.xml	2016/12/22 10:57	XML 文档	736 KB
Beckhoff EPP6xxx.xml	2017/4/5 14:46	XML 文档	1,272 KE
Beckhoff EPP7xxx.xml	2016/12/22 10:57	XML 文档	1,466 KE
Beckhoff EQ1xxx.xml	2015/11/12 14:24	XML 文档	22 KE
Beckhoff EQ2xxx.xml	2016/11/23 10:42	XML 文档	73 KE
Beckhoff EQ3xxx.xml	2016/11/22 11:22	XML 文档	1,386 KE
Beckhoff ER1xxx.XML	2016/11/21 15:46	XML 文档	165 KE
Beckhoff ER2xxx.XML	2016/11/21 14:32	XML 文档	259 KE
Beckhoff ER3xxx.XML	2017/6/9 13:35	XML 文档	1,177 KE
Beckhoff ER4xxx.xml	2016/11/22 12:58	XML 文档	318 KE
Beckhoff ER5xxx.xml	2016/3/14 11:52	XML 文档	273 KE
Beckhoff ER6xxx.xml	2016/3/14 11:52	XML 文档	494 KE
Beckhoff ER7xxx.xml	2016/11/22 12:14	XML 文档	1,503 KE
Beckhoff ER8xxx.xml	2016/3/14 11:52	XML 文档	207 KE
Beckhoff EtherCAT EvaBoard.xml	2015/2/4 12:57	XML 文档	72 KE
Beckhoff EtherCAT Terminals.xml	2015/2/4 12:57	XML 文档	53 KE
Beckhoff FB1XXX.xml	2017/5/24 12:26	XML 文档	49 KE
Beckhoff FCxxxx.xml	2015/2/4 12:57	XML 文档	21 KE
Beckhoff ILxxxx-B110.xml	2015/2/4 12:57	XML文档	8 KE
EcatTerminal-XB6 V3.10 ENUM.xml	2023/3/21 10:57	XML 文档	470 KB

» 此电脑 » Windows (C:) » TwinCAT » 3.1 » Config » Io » EtherCAT »

2. Create Project

a. Click the TwinCAT icon in the lower right corner of the desktop and select "TwinCAT XAE (VS xxxx)" to open the TwinCAT3 software as shown below.

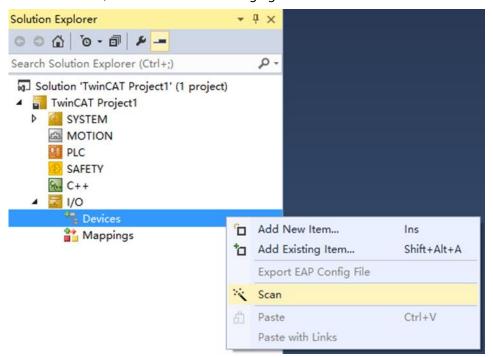


b. Click "New TwinCAT Project", in the pop-up window, "Name" and "Solution name" correspond to the project name and solution name respectively. "Location" corresponds to the project path, these three items can be selected by default, click "OK", the project was created successfully, as shown in the following figure.

New TwinCAT	Project	Get S	Started	Beckhoff N	lews				
New Measurer	ment Project	1	pe per per per ser		What's	New in	TwinCAT 3		
New Project								?	×
▶ Recent		NET Framework 4.5	✓ Sort b	y: Default	•	II' IE	Search II	nstalled	P
 Installed Templates Other Projee TwinCAT Me TwinCAT PLG TwinCAT PCG Samples Online 	easurement C	TwinCAT XAE		vinCAT Projects			Projects stem Mana	ager	
Name: Location: Solution name:	TwinCAT Project1 D:\workspace\Tw TwinCAT Project1	inCAT Project			Browse		for solutic	on Canc	el

3、 scanning device

a. After creating the project, right-click on the "Scan" option under "I/O -> Devices" to perform a slave device scan, as shown in the following figure.



b. Check the "Local Connection" box, as shown in the following figure.

1 new I/O devices found	×
Device 2 (EtherCAT) [以太网 (Realtek PCIe GbE Family Controller)]	OK
	Cancel
	Select All
	Unselect All

c. Click on the pop-up window "Scan for boxes" and select "Yes"; click on the pop-up window "Activate Free Run" and select "Yes". "Yes", as shown in the figure below.

Microsoft Visual Studio		× Mi	Microsoft Visual Studio					
Scan for boxes			? Activate Fr	ee Run				
是(Y)	否(N)		是(Y)	否(N)				

d. After scanning to the device, you can see Box1 (GW6L-A0(L256)) in the left navigation tree, and you can see TwinCAT is in the "OP" state in the "Online" section, and you can observe that the RUN light of the slave device is always on, as shown in the figure below.

Solution Explorer 🔹 👎 🗙	TwinCAT Project1	÷ X		-
○ ○ ☆ io · @ / ₽	General EtherC	AT Process Data Startup	CoE - Online Online	
Search Solution Explorer (Ctrl+;)	State Machir	ne		
 Solution 'TwinCAT Project1' (1 project) TwinCAT Project1 	Init	Bootstrap		
SYSTEM	Pre-Op	Safe-Op	Current State:	OP
I PLC	Ор	Clear Error	Requested State:	OP
SAFETY	ΟΡ	Clear Error		
🔺 🕎 I/O	DLL Status			
 The provides The provided and the provided and t	Port A:	Carrier / Open		
Image Image-Info	Port B:	No Carrier / Closed		
SyncUnits	Port C:	No Carrier / Closed		
 Inputs Outputs 	Port D:	No Carrier / Closed		
 InfoData Box 1 (GW6L-A0(L256)) 				
Mappings		ver EtherCAT	-	
	Downloa	ud Upload		
	-			

4、 Viewing uplink and downlink data

a. The left navigation tree "Box1 -> Inputs" displays the uplink data of the gateway module, which is used to check whether the data is correctly imported, as shown in the following figure.

Solution Explorer 🔹	ųΧ	TwinCAT Pr	oject1 + ×							
0 0 û o 0 / /		Name	Online	Type	Size	>Address	In/Out	User ID	Linked to	
Search Solution Explorer (Ctrl+;)	ρ.	≈ 100	0	UINT	2.0	39.0	Input	0		
		≈ 101	0	UINT	2.0	41.0	Input	0		
Solution 'TwinCAT Project1' (1 project)		≈ 102	0	UINT	2.0	43.0	Input	0		
TwinCAT Project1		103	0	UINT	2.0	45.0	Input	0		
SYSTEM		<mark>∞</mark> 104	0	UINT	2.0	47.0	Input	0		
MOTION		2 105	0	UINT	2.0	49.0	Input	0		
PLC CALERY		∞ 106	0	UINT	2.0	51.0	Input	0		
SAFETY		107	0	UINT	2.0	53.0	Input	0		
6 C++ ▲ 🔀 I/O		≈ 108	0	UINT	2.0	55.0	Input	0		
 Bevices 		109	0	UINT	2.0	57.0	Input	0		
▲ ➡ Devices		🕶 10a	0	UINT	2.0	59.0	Input	0		
2 ■ Device 2 (Effectivity) 2 ■ Image		≠ 10b	0	UINT	2.0	61.0	Input	0		
Image-Info		∞ I0c	0	UINT	2.0	63.0	Input	0		
SyncUnits		≠ 10d	0	UINT	2.0	65.0	Input	0		
Inputs		≈ 10e	0	UINT	2.0	67.0	Input	0		
Outputs		≠ 10f	0	UINT	2.0	69.0	Input	0		
👂 🛄 InfoData		∞ 110	0	UINT	2.0	71.0	Input	0		
🔺 🎢 Box 1 (GW6L-A0(L256))		∞ 11	0	UINT	2.0	73.0	Input	0		
🕨 🛁 Inputs		≈ 12	0	UINT	2.0	75.0	Input	0		
 Image: Second sec		≈ 13	0	UINT	2.0	77.0	Input	0		
		≈ 14	0	UINT	2.0	79.0	Input	0		
		≠ 115	0	UINT	2.0	81.0	Input	0		
		≈ I16	0	UINT	2.0	83.0	Input	0		
		≈ I17	0	UINT	2.0	85.0	Input	0		
		≈ I17 ≈ I18	0	UINT	2.0	87.0	Input	0		
		≈ I19	0	UINT	2.0	89.0		0		
		≈ 119 ≖ 115	0		2.0	89.0	Input	0		

b. In this example, the range of 39~293 bytes in the uplink data is the input data, totaling 255 bytes; the 294th byte, i.e., the last byte, is the status bit, as shown in the figure below.

Solution Explorer 🚽 👻 🚽 🗙	TwinCAT Pr	oject1 ⊉ ×						
0 0 û '0 · 0 / 1 0 0 0	Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
earch Solution Explorer (Ctrl+;)	<mark>≁</mark> 166	0	UINT	2.0	243.0	Input	0	
	≈ 167	0	UINT	2.0	245.0	Input	0	
Solution 'TwinCAT Project1' (1 project)	<mark>≁</mark> 168	0	UINT	2.0	247.0	Input	0	
TwinCAT Project1	<mark>∞</mark> 169	0	UINT	2.0	249.0	Input	0	
SYSTEM	🕫 l6a	0	UINT	2.0	251.0	Input	0	
MOTION	🕫 l6b	0	UINT	2.0	253.0	Input	0	
PLC SAFETY	≈ I6c	0	UINT	2.0	255.0	Input	0	
SAFETY	🕫 l6d	0	UINT	2.0	257.0	Input	0	
▲ 🔄 I/O	≈ 16e	0	UINT	2.0	259.0	Input	0	
Devices	🕫 l6f	0	UINT	2.0	261.0	Input	0	
 Devices Device 2 (EtherCAT) 	170	0	UINT	2.0	263.0	Input	0	
the first and t	2 171	0	UINT	2.0	265.0	Input	0	
📑 Image-Info	172	0	UINT	2.0	267.0	Input	0	
SyncUnits	173	0	UINT	2.0	269.0	Input	0	
Inputs	∞ 174	0	UINT	2.0	271.0	Input	0	
Outputs	≠ 175	0	UINT	2.0	273.0	Input	0	
👂 🛄 InfoData	176	0	UINT	2.0	275.0	Input	0	
Box 1 (GW6L-A0(L256))	177	0	UINT	2.0	277.0	Input	0	
Inputs	∞ 178	0	UINT	2.0	279.0	Input	0	
Outputs	179	0	UINT	2.0	281.0	Input	0	
WcState	≠17a	0	UINT	2.0	283.0	Input	0	
👂 🛄 InfoData	≈ 17b	0	UINT	2.0	285.0	Input	0	
📸 Mappings	≈ 17c	0	UINT	2.0	287.0	Input	0	
	≈ 17d	0	UINT	2.0	289.0	Input	0	
	≈ 17e	0	UINT	2.0	291.0	Input	0	
	≈ 17e	0x0200	UINT	2.0	293.0	Input	0	

c. The left navigation tree "Box1 -> Outputs" displays the downlink data of the gateway module, which is used to force the output of data, as shown in the following figure.

Solution Explorer 👻 🕂 🗙	TwinCAT Pr	oject1 -¤ ×						
G O 🔂 To - 🗊 🖌 💻	Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Search Solution Explorer (Ctrl+;)	■ 000	0	UINT	2.0	39.0	Output	0	
search solution explorer (Cu1+,)	■ O01	0	UINT	2.0	41.0	Output	0	
Solution 'TwinCAT Project1' (1 project)	₽ 002	0	UINT	2.0	43.0	Output	0	
TwinCAT Project1	■ O03	0	UINT	2.0	45.0	Output	0	
SYSTEM	■ 004	0	UINT	2.0	47.0	Output	0	
MOTION	₽ 005	0	UINT	2.0	49.0	Output	0	
	■ 006	0	UINT	2.0	51.0	Output	0	
SAFETY C++	■ 007	0	UINT	2.0	53.0	Output	0	
General C++	■ 008	0	UINT	2.0	55.0	Output	0	
 Devices 	₽ 009	0	UINT	2.0	57.0	Output	0	
✓ Device 2 (EtherCAT)	■ O0a	0	UINT	2.0	59.0	Output	0	
🛟 Image	■ O0b	0	UINT	2.0	61.0	Output	0	
📑 Image-Info	■ O0c	0	UINT	2.0	63.0	Output	0	
SyncUnits	■ O0d	0	UINT	2.0	65.0	Output	0	
Inputs	■ O0e	0	UINT	2.0	67.0	Output	0	
Outputs	■ O0f	0	UINT	2.0	69.0	Output	0	
InfoData	■ 010	0	UINT	2.0	71.0	Output	0	
Box 1 (GW6L-A0(L256))	■ 011	0	UINT	2.0	73.0	Output	0	
Inputs	012	0	UINT	2.0	75.0	Output	0	
Outputs	■ 013	0	UINT	2.0	77.0	Output	0	
▷ 🛄 WcState ▷ 🛄 InfoData	■ 014	0	UINT	2.0	79.0	Output	0	
and the second s	■ 015	0	UINT	2.0	81.0	Output	0	
	■ 016	0	UINT	2.0	83.0	Output	0	
	© 017	0	UINT	2.0	85.0	Output	0	
	■ 018	0	UINT	2.0	87.0	Output	0	
	₽ 019	0	UINT	2.0	89.0	Output	0	
	- 01a	0	LUNIT	20	01.0	Output	0	

d. Right-click on any double-byte, such as "O00", select "Display Mode" to set the data display format to hexadecimal/decimal, select "Online Write Select "Online Write" to write the value online, as shown in the figure below.

Solution Explorer 🛛 👻 🖣 💈	< TwinCAT P	oject1 ≄ ×						
C C G T 0 - 0 ₽	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
earch Solution Explorer (Ctrl+;)	■ O00	43981 (0xabcd)	UINT	2.0	39.0	Output	0	
	_ ■ ©001	65535 (0xffff)	UINT	2.0	41.0	Output	0	
Solution 'TwinCAT Project1' (1 project)	₽ 002	0 (0x0000)	UINT	2.0	43.0	Output	0	
TwinCAT Project1	■ O03	0 (0x0000)	UINT	2.0	45.0	Output	0	
SYSTEM	■ 004	0 (0x0000)	UINT	2.0	47.0	Output	0	
	■ 005	0 (0x0000)	UINT	2.0	49.0	Output	0	
SAFETY	■ 006	0 (0x0000)	UINT	2.0	51.0	Output	0	
SALLIT See C++	© 007	0 (0x0000)	UINT	2.0	53.0	Output	0	
	■ 008	0 (0x0000)	UINT	2.0	55.0	Output	0	
Devices	© 009	0 (0x0000)	UINT	2.0	57.0	Output	0	
 Device 2 (EtherCAT) 	■ O0a	0 (0x0000)	UINT	2.0	59.0	Output	0	
🛟 Image	■ O0b	0 (0x0000)	UINT	2.0	61.0	Output	0	
📑 Image-Info	■ O0c	0 (0x0000)	UINT	2.0	63.0	Output	0	
SyncUnits	■ O0d	0 (0x0000)	UINT	2.0	65.0	Output	0	
Inputs	■ O0e	0 (0x0000)	UINT	2.0	67.0	Output	0	
Outputs	■ O0f	0 (0x0000)	UINT	2.0	69.0	Output	0	
InfoData	■ 010	0 (0x0000)	UINT	2.0	71.0	Output	0	
Box 1 (GW6L-A0(L256))	■011	0 (0x0000)	UINT	2.0	73.0	Output	0	
Inputs	■012	0 (0x0000)	UINT	2.0	75.0	Output	0	
Outputs	■013	0 (0x0000)	UINT	2.0	77.0	Output	0	
WcState	■014	0 (0x0000)	UINT	2.0	79.0	Output	0	
👂 🛄 InfoData	■015	0 (0x0000)	UINT	2.0	81.0	Output	0	
📸 Mappings	₽ 016	0 (0x0000)	UINT	2.0	83.0	Output	0	
	■017	0 (0x0000)	UINT	2.0	85.0	Output	0	
	■ 018	0 (0x0000)	UINT	2.0	87.0	Output	0	
	■ O19	0 (0x0000)	UINT	2.0	89.0	Output	0	
	- 015	0 (0x0000)	LUNT	2.0	01.0	Output	0	

7.2.1.3 Communication connection in TIA Portal V17 software

1、New project

a. Open TIA Portal V17 software and click "Create New Project" .

	Create new project		
Open existing project	Project name:	GW6L	
Open existing project	Path:	C:\Users\29719\Documents	
🥚 Create new project	Version:	V17	
Migrate project	Author: Comment:	Administrator	
Close project			
Welcome Tour			Create
increase four			
First steps			

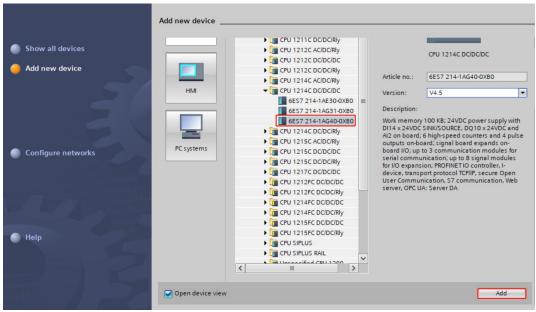
- Project name: customizable, can be left as default.
- Path: the project keeps the path, which can be left as default.
- Version: can be left as default.
- AUTHOR: The default can be maintained.
- Comment: Customizable, may not be filled in.

2、 Adding a PLC controller

a. Click "Configure A Device", as shown in the following figure.

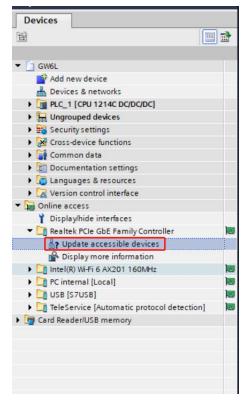
Start 🦾		First steps
Devices &	 Open existing project Create new project Migrate project 	Project: "GW6L" was opened successfully. Please select the next step:
Motion & 🚓 technology 🔅 Visualization 🧊	Close project Welcome Tour First steps	Devices & Configure a device PLC programming Vrite PLC program
Diagnostics	 Installed software Help 	Motion & technology Configure technology objects Visualization Configure an HM screen
	🚱 User interface language	

b. Click "Add New Device", select the PLC model you are currently using, and click "Add", as shown in the following figure. After adding, you can see that the PLC has been added to the device navigation tree.



3、 Scanning connected devices

a. Click "Online Access -> Update Accessible Devices" in the left navigation tree as shown below.



b. When the update is complete, the connected slave devices are displayed, as shown in the following figure.

Project tree		W6L ▶ P	LC_1 [CPU 1214C DC/DC/DC]								_ • • •
Devices							🛃 Тор	ology view 🔥 Ne	twork vie	w 🛐 De	vice view
副		Devi	ce overview								
The same		- **	Module	Slot	I address	Q address	Туре	Article no.	Firmware	Comment	
GW6L				103							
Add new device				102							
devices & networks				101							
• [] PLC_1 [CPU 1214C DC/DC/DC]			▼ PLC_1	1			CPU 1214C DC/DC/DC	6ES7 214-1AG40-0XB0	V4.5		
Ungrouped devices			DI 14/DQ 10_1	11	01	01	DI 14/DQ 10				
Security settings			AJ 2_1	12	6467		AI 2				
 Cross-device functions 				13							
🕨 🙀 Common data			HSC 1	1 16	100010		HSC				
Documentation settings			HSC_2	1 17	100410		HSC				
Languages & resources			HSC 3	1 18	100810		HSC				
Version control interface	MR.		HSC_4	1 19	1012 10		HSC				
Doline access	1		HSC_5	1 20	101610		HSC				
Y Display/hide interfaces			HSC_6	1 21	102010		HSC				
 Realtek PCIe GbE Family Controller 	100		Pulse_1	1 32	1020		Pulse generator (PTO/P				
Pupdate accessible devices			Pulse_2	1 33			Pulse generator (PTO/P				
P Display more information			Pulse 3	1 34			Pulse generator (PTO/P				
plc_1 [192.168.0.1]			Pulse_4	1 34			Pulse generator (PTO/P				
pnio [192.168.0.2]			OPC UA	1 254		100010	OPC UA				
Intel(R) Wi-Fi 6 AX201 160MHz	100		PROFINET interface 1	1 254 1 X1			PROFINET interface				
PC internal [Local]	100		PROFINETINTERface_1				PROFINE I Internace				
USB [S7USB]	100			2							
TeleService [Automatic protocol detection]	100	<		3							
Card Reader/USB memory	-	<		_	_	_					
					-		<u>Q</u> P	roperties 🚺 Info	1 U D	iagnostics	
		General	Cross-references C	ompile							
		3 🚹 🖯	Show all messages	•							
	1	Message	•					Go to	?	Date	Time
		Proje	ect GW6Lcreated.							1/17/2024	1:19:05 PM
		Scar	nning for devices on interface Rea	tek PCIe Gl	E Family Con	troller was st	tarted.			1/17/2024	1:32:58 PM
		Scar	nning for devices completed for in	terface Rea	Itek PCIe GbE	Family Contr	roller. Found 2 device(s) or	the network.		1/17/2024	1:33:04 PM

The IP address of the computer must be in the same network segment as the PLC, if not, modify the IP address of the computer and repeat the above steps.

4. Adding a GSD Configuration File

- a. In the menu bar, select "Options -> Manage General Station Description File (GSDML) (D)".
- b. Click Source Path to select the file.
- c. Check if the status of the GSD file you want to add is "Not yet installed", click Install if it is not installed, or Cancel if it is already installed to skip the installation step.

Manage general station description files				×
Installed GSDs GSDs in the project				
Source path: D:\				
Content of imported path				
File	Version	Language	Status	
GSDML-V2.3-Sdot-GW6L_B0(L256)-20230531.xml	V2.3	English	Not yet installed	
				>
		Delete	Install Can	cel

5. Adding Slave Devices

- a. Double-click on "Devices & Networks" in the left navigation tree.
- b. Click the "Hardware Catalog" vertical button on the right, the catalog is displayed as shown below.

	🗄 🗓 🗓 🔛 🔛 🦉 🕼 co online 🖉 Go offline 🏭 🖪 🕼 🧏 🖉 🛃 🕹 📥 😆 arch in project.	PORT
Project tree	□	💶 🖬 🖬 🗙 Hardware catalog 🛛 🗊 🛙
Devices	🖉 Topology view 🔹 Network v	view Device view Options
19 19	🔟 🖻 💦 Network 🔢 Connections HM connection 💌 🔒 Relations 🖾 📆 🗑 🔛 🛄 🔍 ±	
		▲ Catalog
GW6L		dearch>
Add new device	PLC.1	Filter Profile: <ali>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>></ali>
networks	CPU1214C	Controllers
PLC_1 [CPU 1214C DC/DC/DC]		> Controllers
Generation of the second		C systems
• 📅 Security settings		C systems Drives & starters
Cross-device functions		Im Drives a starters Im Network components
• 🙀 Common data		Detecting & Monitoring
Documentation settings		Distributed I/O
Co Languages & resources		Power supply and distributio
Version control interface		Field devices
Online access		Other field devices
Displayhide interfaces Displayhide Example Controller		Coner nelo devices
Realtek PCIe GbE Family Controller		E Sk
Opdate accessible devices Display more information		
 Display more information Display more information 		
pic_1 [192.168.0.1]		
Conline & diagnostics		
Intel(R) Wi-Fi 6 AX201 160MHz		
PC internal [Local]		
USB [S7USB]		
TeleService [Automatic protocol detection]		
Card Reader/USB memory		
Caro Readenoso memory		
	< III > 100%	·
	X III > 100%	

- c. Select "Other field devices -> PROFINET IO -> Gateway -> Sdot -> X-Bus -> GW6L-B0(L256)".
- d. Drag or double-click "GW6L-B0(L256)" to the "Network View" as shown below.

Devices	2	Topology view	Network view	Devid	e view	Options				
1 III III III III III III III III III I	Network Connection	HMI connection	Relation	ns 📴 🕨	3					
					^	✓ Catalog	3			
- GW6L				_	=			1	inil	i i î î
Add new device	PLC 1	PNIO	_			Filter	Profile:	<all></all>		_
Devices & networks		GW6L B0 L256	DP-NORM						•	1
PLC_1 [CPU 1214C DC/DC/DC]	CPU 1214C	Not assigned				Powe		nd distribut	ion	^
Ungrouped devices		Nocassigned				Field				
Security settings						- Other				
Cross-device functions					- 110			thernet der	ices	
Unassigned devices							OFINETIO			
🕨 🙀 Common data					- 6		Drives			
Documentation settings							Encoders			
Languages & resources							Gateway			
Version control interface	1				- 6	- 🗋				
Online access	1						BAYM	85		
Card Reader/USB memory						-	Sdot			=
								7 PN Gatev	ay	
							🕨 🛅 SK-			
					_		🕶 🛄 Х-В	us		
	-				_			GW6L_B0_L	256	
					- 11			XB6-PN000	2	
) ·	SIEME	NS AG		
						•	SOLID	от		

e. Click "Unassigned (blue font)" on the slave device and select "PLC_1.PROFINET Interface_1" as shown below.

	🛃 Topology view 🛛 🛔 Network view 📑 Dev	ice view
Network Connections	HMI connection 💌 🔐 Relations 🕎 🖫 🗐 🖽 🛄 🔍 ±	
PLC_1 PU 1214C	PNIO GW6L_B0_L256 Not assigned Select IO controller PLC_1.PROFINET interface_1	
		_

f. When the connection is complete, it is shown below.

GW6L > Devices & netwo	ks		_∎≡×
	📲 Topology vie	w 🔒 Network view	Device view
Network Connections	HMI connection	Relations 👯 🖫 🖿 🖽	🔲 🔍 ± 📑 🚺
	† 10	O system: PLC_1.PROFINET	IO-System (100) 🔷
			=
PLC_1 CPU 1214C	PNIO GW6L_B0_L256 PLC_1	0RM	
PL	C_1.PROFINET IO-Syste		
			Netwo
			I Alta

g. Click on the device name to rename the device, as shown in the following figure.

	🚰 Topology view 🛛 🛗 Network view 🛛 🏠 Device vi	ew
Network Connections	HMI connection 💌 🖪 Relations 🔛 🐫 📲 🖽 🛄 🍳 ±	1
	IO system: PLC_1.PROFINET IO-System (100)	^
		=
PLC_1 CPU 1214C	GW6L-80(L256) GW6L_80_L256 DP-NORM	
	PLC_1	
_		
P	LC_1.PROFINET IO-Syste	

h. Click "Device overview" to enter the device overview, you can see the topology configuration information, including the I/O address automatically assigned by the system, the I/O address can be changed by yourself, as shown in the following figure.

			📑 To	pology vie	w daa N	letwork view	Device view
Dev	ice overview						
*	Module	 Rack	Slot	I address	Q address	Туре	Article numbe
	 GW6L-B0(L256) 	0	0			GW6L_B0_L256	1234567
	PN-IO	0	0 X1			PNIO	
	IN/OUT_1	0	1	68323	2257	IN/OUT	

6. Assign device name

a. Switch to "Network View", right-click the connection cable between PLC and GW6L-B0(L256), and select "Assign Device Name".

	2	Topology view	Network view	v Device view
Network Connections	HMI connection	Relations	2 3 1	8 🛄 🔍 ± 📑 🛛
		4 IO system	n: PLC_1.PROFINE	T IO-System (100) 🔨
	_			=
PLC 1	GW6L-B0(L25	6)		=
PU 1214C	GW6L_B0_L25			
	PLC_1			
		E I		
<u></u> Р	LC_1.PROFINET IO-S			
	X c		Ctrl+X Ctrl+C	
	111 C		Ctrl+C	
	XD		Del	
	Re	ename	F2	
	A	ssign to new DP master	/ IO controller	
	C	ompile	•	
		ownload to device	•	
	💋 G	o online	Ctrl+K	
	🔊 G	o offline	Ctrl+M	
	U 0	nline & diagnostics	Ctrl+D	
	DAME A	ssign device name		
		ssign device name ssign PROFIsafe address		
	A Re	ssign device name ssign PROFIsafe address aceive alarms		
	A Contraction of the second se	ssign device name ssign PROFIsafe address		

b. The "Assign PROFINET Device Name" window pops up as shown below.

		DOOD SHIET 4		6l-b0(l256)			-	
		PROFINET device n Device						
			type: GW	6L-B0(L256)				
		Online access						
		Type of the PG/PC inter		PN/IE			-	0
		PG/PC inter	rface: 🔛	Realtek PCIe Gb	E Family	Controller	•	۷
ي طي		Device filter						
1		🛃 Only show dev	vices of the s	ame type				
		Only show dev	vices with ba	d parameter s	ettings			
		Only show dev						
			nees malout	nonnes				
		vices in the network:						
	IP address	MAC address De	evice PF	OFINET device	name	Status		
I 🗾								
Flash LED								
	<			111				
					Lind	late list	Annia	n name

Check to see if the MAC address on the module silkscreen is the same as the MAC address of the assigned device name.

- PROFINET Device Name: The name set in "Assign IP address and device name to slave".
- Type of PG/PC interface: PN/IE.
- PG/PC interface: the actual network adapter used.

c. Select the slave device in turn, click Update List, and click Assign Name. Check whether the status of the node is "OK" in "Accessible nodes in the network", as shown in the following figure.

		Configured PRO	FINET de	vice		
		PROFINET devic	e name:	gw6l-b0(l256)		
		Dev	vice type:	GW6L_80_L256		
		Online access				
		Type of the PG/PC i	interface:	₩_ PN/IE		
		PG/PC i	interface:	Realtek PCIe GbE F	amily Controller	• 🖲 🖸
		Device filter				
		Only show	devices of	the same type		
		Onlyshow	devices wi	th bad parameter setti	ngs	
				, thout names		
_	Accessible dev	ices in the network: MAC address	Device	PROFINET device na	me Status	
	192.168.0.2	8C-F3-E7-20-00-04	PNIO	gw6l-b0(l256)	OK OK	
				<u></u>		
- Hisch LED						
T BERLEY	<			11		
ninesh (540)	٢				Update list	Assign name
- Medicae)	٢			11	Update list	
Novinteo	<				Update list	
Plochue0					Update list	
Online status informatio		ere found.			Update list	
Online status informatio	n:	ere found.			Update list	
Online status informatio	n:	ere found.			Update list	Assign name
Online status informatio	n:	ere found.			Update list	
Online status informatio	n:	ere found.	8		Update list	Assign name

d. Click Close.

7. Download Configuration Structure

- a. In Network View, check PLC.
- b. Click the **D** button in the menu bar to download the current configuration to the PLC.
- c. In the "Extended Download to Device" pop-up screen, configure the following figure.

	Configured access nod	es of "PLC_1"					
	Device	Device type	Slot	Interface typ	e Address	Subnet	
	PLC_1	CPU 1214C DC/D	1 X1	PN/IE	192.168.0.1	PN/IE_1	
	т	ype of the PG/PC inte	rface:	PN/IE		-]
		PG/PC inte		Realtek PCIe	GbE Family Controlle		
	Conne	ection to interface/su	bnet:	PN/IE_1			1
		1st gat	eway:			v) 🕐
	Select target device: Device	Device type	Interf	ace type 🛛 A	Show all compatib	le devices Target devi	•
	-	-	PN/IE		ccess address	-	
Flash LED							
nline status information:					Display only erro		search

	Device	Device type	Slot	Interface type	Address	Subnet	
	PLC_1	CPU 1214C DC/D	1 X1	PN/IE	192.168.0.1	PN/IE_1	
		Type of the PG/PC inte	rface:	PN/IE]
		PG/PC inte	rface:	Realtek PCIe G	bE Family Controlle	er 💌	
		Connection to interface/su	bnet:	PN/IE_1) 💎
		1st gat	eway:			v	1
	Device	Device type			dress	Target devic	e
	PLC_1 -	Device type CPU 1214C DC/D 		19.	dress 2.168.0.1 tess address	Target devic PLC_1 —	e
Flash LED			. PN/IE	19.	2.168.0.1		e
Flash LED			. PN/IE	19.	2.168.0.1		
	P.C_1		. PN/IE	19.	2.168.0.1	PLC_1 - 	
nline status informa 🛙 Connection estal	PLC_1	CPU 1214C DC/D	PN/IE PN/IE	19.	2.168.0.1 tess address	PLC_1 - 	
nline status informa 문 Connection estal) Scan completed.	PLC_1	CPU 1214C DC/D - with address 192.168.0.1. s of 3 accessible devices fou	PN/IE PN/IE	19.	2.168.0.1 tess address	PLC_1 - 	search

d. Click the "Start Search" button as shown below.

- e. Click on "Download".
- f. Select "Continue without synchronization" as shown below.

ware synchronization before lo	ading to a device	
The CPU contains changes that c	annot be automatically synch	ironized.
<u>}</u>		
Software synchronization	Status	Action
▼ PLC_1		
 'Program blocks' 		
Main [OB1]	•	Manual synchronization required
 'PLC tags' 		
Tags	0	Manual synchronization required
		W
(0)	- C - 1	
ffline/online comparison	Synchro	onize Continue without synchronization Cance

g. Select "Stop All".

Status	1	Target	Message	Action
1	9	▼ PLC_1	Ready for loading.	Load 'PLC_1'
	4	 Protection 	Protection from unauthorized access	
	4		Devices connected to an enterprise network or directly to the internet must be appropriately protected against unauthorized access, e.g. by use of firewalls and network segmentation. For more information about industrial security, please visit http://www.siemens.com/industrialsecurity	
	•	Stop modules	The modules are stopped for downloading to device.	Stop all 💌
	•	Device configuration	Delete and replace system data in target	Download to device
	0	Software	Download software to device	Consistent download
<			III.	>

- h. Click Load.
- i. Click Finish.
- j. Power the unit back up.

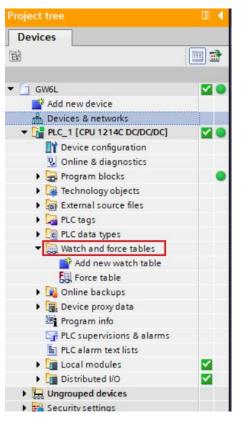
8、 communication connection

a. Click the LS button ,and then click the "Go Online" button, the connection is successful, as shown in the following figure.

_	roject <u>E</u> dit <u>V</u> iew <u>I</u> nsert <u>O</u> nline Option ¹ 💁 🔒 Save project 📑 💥 🗐 📬 🗙	7	Window Help 1 <	Totally Integrated Automation PORTAL
	Project tree		GW6L + Devices & networks	_ # = ×
	Devices		🚪 Topology view	A Network view
	E	•	💦 Network 🔢 Connections 🔣 HMI connection 💌 🗛 Relations 🕎 🖏 📲 🖽 🛄 🔍 ±	a
			4 10 sy	ystem: PLC_1.PROFINET IO-System (100) 🛆
	▼ GW6L	2 • ^		=
	Add new device			
	Devices & networks		PLC_1 GW6L-B0(L256) CPU 1214C GW6L B0_L256 DP.WORM	
	PLC_1 [CPU 1214C DC/DC/DC]		CPU 1214C GW6L_B0_L256 DP-NORM	
	 Ingrouped devices 			
	Security settings	=		
	Cross-device functions		PLC_1.PROFINET IO-Syste	
	Common data			2
	Documentation settings			two
	Languages & resources			- A C
	Version control interface			→ ti _ ti
	▼ 🔚 Online access			
	Y Display/hide interfaces			
	 Realtek PCIe GbE Family Controller 			
	Opdate accessible devices			
	P Display more information			
	 Intel(R) Wi-Fi 6 AX201 160MHz 	100		
	PC internal [Local]	100		
	USB [S7USB]	100		
	TeleService [Automatic protocol d	100		~
	Card Reader/USB memory		< III > 100)% 💌 —
			Q Properties	🗓 Info 👔 🗓 Diagnostics 📰 = 🗸
		~		La magnostics

9、 Viewing uplink and downlink data

a. Expand the left side of the project navigation, select "Monitor and Force Meter", as shown in the following figure.



b. Double-click "Add New Watch Table", the system adds a new monitor table, as shown in the following figure.

Devices									
<u>تا</u>	🔲 🖻 🔮 🔮	¥ 🏥 😼 Ь	91 90 2 00 00						
	i	Name	Address	Display format	Monitor value	Modify value	9	Comment	Tag o
T GW6L	V 🕒 \land 1		Add new>						
💕 Add new device									
Devices & networks									
PLC_1 [CPU 1214C DC/DC/DC]	V O								
Device configuration									
Online & diagnostics									
Program blocks									
Technology objects									
External source files	=								
PLC tags									
PLC data types									
 Watch and force tables 									
Add new watch table									
Force table									
Watch table_1									
🕨 📴 Online backups									
🕨 🔄 Traces									
OPC UA communication									
Device proxy data									
Program info									
PLC alarm text lists									
Local modules	V								
Distributed I/O	V								
Ungrouped devices									
🕨 📷 Security settings									
Cross-device functions									
🕨 🎑 Common data									
Documentation settings									
🕨 🐻 Languages & resources									
Version control interface	<								

c. Open the Device View and check the channel Q address (channel address of the output signal) or I address (channel address of the input signal) of the module GW6L-B0(L256) in the device overview.

For example, the "Q address" of GW6L-B0(L256) module is 2 to 257, and the "I address" is 68 to 323, as shown in the following figure.

Firmware	4
Firmware	
Timmere	Commen
V10.00.00	
1.0	
	1.0

d. Input the address, data type and comments in the Address cell of the monitoring table to facilitate monitoring. You can refer to the definition of the uplink and downlink process data, enter the data

items in order, press the Enter key, and then click the button to monitor the data after all the fields are filled in.

e. The module's uplink data is shown below in the monitoring table to see if the data is coming in correctly.

🔮 🔮 🙋 🕼	0 91 % 2 9 9	7					
i Name	Address	Display format	Monitor value	Modify value	9	Comment	
1	%IW68	Hex	16#0000				1
2	%IW70	Hex	16#0000				
3	%IW72	Hex	16#0000				-
4	%IW74	Hex	16#0000				
5	%IW76	Hex	16#0000				
6	%IW78	Hex	16#0000				
7	%IW80	Hex	16#0000				
8	%IW82	Hex	16#0000				
9	%IW84	Hex	16#0000				
10	%IW86	Hex	16#0000				
11	%IW88	Hex	16#0000				
12	%IW90	Hex	16#0000				
13	%IW92	Hex	16#0000				
14	%IW94	Hex	16#0000				
15	%IW96	Hex	16#0000				
16	%IW98	Hex	16#0000				
17	%IW100	Hex	16#0000				
18	%IW102	Hex	16#0000				
19	%IW104	Hex	16#0000				
20	%IW106	Hex	16#0000				
21	%IW108	Hex	16#0000				
22	%IW110	Hex	16#0000				
23	%IW112	Hex	16#0000				~
<			III				>

f. In this example, the range of 68~322 bytes in the uplink data is the input data, totaling 255 bytes; the 323rd byte, i.e., the last byte, is the status bit, as shown in the figure below.

i Name	Address	Display format	Monitor value	Modify value	9	Comment	
	%IW282	Hex	16#0000				
	%IW284	Hex	16#0000				
	%IW286	Hex	16#0000				
	%IW288	Hex	16#0000				
	%IW290	Hex	16#0000				
	%IW292	Hex	16#0000				
	%IW294	Hex	16#0000				
	%IW296	Hex	16#0000				
	%IW298	Hex	16#0000				
	%IW300	Hex	16#0000				
	%IW302	Hex	16#0000				
	%IW304	Hex	16#0000				
	%IW306	Hex	16#0000				
	%IW308	Hex	16#0000				
	%IW310	Hex	16#0000				
	%IW312	Hex	16#0000				
	%IW314	Hex	16#0000				
	%IW316	Hex	16#0000				
	%IW318	Hex	16#0000				
	%IW320	Hex	16#0000				
	%IW322	Hex	16#0000				
	%QW2	Hex	16#0000				
	%QW4	Hex	16#0000				

g. The downlink data of the module is shown below in the monitoring table for forcing the output data as shown below.

i Name	Address	Display format	Monitor value	Modify value	9	Comment	
	%QW2	Hex	16#0000				^
	%QW4	Hex	16#0000				
	%QW6	Hex	16#0000				
	%QW8	Hex	16#0000				
I	%QW10	Hex	16#0000				
	%QW12	Hex	16#0000				
	%QW14	Hex	16#0000				
	%QW16	Hex	16#0000				
I	%QW18	Hex	16#0000				
I	%QW20	Hex	16#0000				
	%QW22	Hex	16#0000				
I	%QW24	Hex	16#0000				=
	%QW26	Hex	16#0000				
	%QW28	Hex	16#0000				
	%QW30	Hex	16#0000				
l	%QW32	Hex	16#0000				
I	%QW34	Hex	16#0000				
	%QW36	Hex	16#0000				
	%QW38	Hex	16#0000				
	%QW40	Hex	16#0000				
	%QW42	Hex	16#0000				
	%QW44	Hex	16#0000				
	%QW46	Hex	16#0000				~

h. In the "Modify Value" cell enter the value, click the ²⁷ button to write, write the value, as shown in the figure below.

i	Name	Address	Display format	Monitor value	Modify value	9	Comment	
1		%QW2	Hex	16#FFFF	16#FFFF		4	^
1		%QW4	Hex	16#FFFF	16#FFFF		4	
1		%QW6	Hex	16#0000				
1		%QW8	Hex	16#0000				
1		%QW10	Hex	16#0000				
1		%QW12	Hex	16#0000				
1		%QW14	Hex	16#0000				
1		%QW16	Hex	16#0000				
1		%QW18	Hex	16#0000				
1		%QW20	Hex	16#0000				
1		%QW22	Hex	16#0000				
1		%QW24	Hex	16#0000				=
1		%QW26	Hex	16#0000				
1		%QW28	Hex	16#0000				
1		%QW30	Hex	16#0000				
1		%QW32	Hex	16#0000				
1		%QW34	Hex	16#0000				
1		%QW36	Hex	16#0000				
1		%QW38	Hex	16#0000				
1		%QW40	Hex	16#0000				
1		%QW42	Hex	16#0000				
1		%QW44	Hex	16#0000				
1		%QW46	Hex	16#0000				~

7.2.1.4 data interaction

a. After establishing the communication connection, the value is written in the downlink data of TwinCAT3 software and the output data is shown below.

Solution Explorer 👻 👎 🗙	TwinCAT Pro	oject1 ≄ ×						
000 jo- 1 1 -	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
Search Solution Explorer (Ctrl+;)	■ 000	43981 (0xabcd)	UINT	2.0	39.0	Output	0	
search solution explorer (cur+,)	■ O01	65535 (0xffff)	UINT	2.0	41.0	Output	0	
Solution 'TwinCAT Project1' (1 project)	₽ 002	0 (0x0000)	UINT	2.0	43.0	Output	0	
TwinCAT Project1	■O03	0 (0x0000)	UINT	2.0	45.0	Output	0	
SYSTEM	₽ 004	0 (0x0000)	UINT	2.0	47.0	Output	0	
MOTION	■ 005	0 (0x0000)	UINT	2.0	49.0	Output	0	
PLC SAFETY	₽ 006	0 (0x0000)	UINT	2.0	51.0	Output	0	
SAFETY	■ 007	0 (0x0000)	UINT	2.0	53.0	Output	0	
▲ 🔀 I/O	■ O08	0 (0x0000)	UINT	2.0	55.0	Output	0	
 Devices 	■ 009	0 (0x0000)	UINT	2.0	57.0	Output	0	
 Device 2 (EtherCAT) 	■ O0a	0 (0x0000)	UINT	2.0	59.0	Output	0	
timage	■ 00b	0 (0x0000)	UINT	2.0	61.0	Output	0	
🚼 Image-Info	■ O0c	0 (0x0000)	UINT	2.0	63.0	Output	0	
SyncUnits	■ O0d	0 (0x0000)	UINT	2.0	65.0	Output	0	
Inputs	■ O0e	0 (0x0000)	UINT	2.0	67.0	Output	0	
Outputs	■ O0f	0 (0x0000)	UINT	2.0	69.0	Output	0	
👂 🛄 InfoData	■O10	0 (0x0000)	UINT	2.0	71.0	Output	0	
Box 1 (GW6L-A0(L256))	■ 011	0 (0x0000)	UINT	2.0	73.0	Output	0	
Inputs	₽ 012	0 (0x0000)	UINT	2.0	75.0	Output	0	
Outputs	■ 013	0 (0x0000)	UINT	2.0	77.0	Output	0	
 WcState InfoData 	■ 014	0 (0x0000)	UINT	2.0	79.0	Output	0	
Mappings	■O15	0 (0x0000)	UINT	2.0	81.0	Output	0	
Mappings	■O16	0 (0x0000)	UINT	2.0	83.0	Output	0	
	© 017	0 (0x0000)	UINT	2.0	85.0	Output	0	
	■O18	0 (0x0000)	UINT	2.0	87.0	Output	0	
	■ 019	0 (0x0000)	UINT	2.0	89.0	Output	0	
	E O15	0 (0,0000)	LIINIT	20	01.0	Output	0	

b. In the monitoring table of the TIA Portal V17 software, check the uplink data to confirm that the data is entered into the gateway module, as shown in the following figure, the data has been passed in.

i Nam	e Address	Display format	Monitor value	Modify value	9	Comment	
1	%IW68	Hex	16#CDAB				^
2	%IW70	Hex	16#FFFF				-
3	%IW72	Hex	16#0000				
4	%IW74	Hex	16#0000				
5	%IW76	Hex	16#0000				
6	%IW78	Hex	16#0000				
7	%IW80	Hex	16#0000				
В	%IW82	Hex	16#0000				
9	%IW84	Hex	16#0000				
10	%IW86	Hex	16#0000				
11	%IW88	Hex	16#0000				
12	%IW90	Hex	16#0000				
13	%IW92	Hex	16#0000				
14	%IW94	Hex	16#0000				
15	%IW96	Hex	16#0000				
16	%IW98	Hex	16#0000				
17	%IW100	Hex	16#0000				
18	%IW102	Hex	16#0000				
19	%IW104	Hex	16#0000				
20	%IW106	Hex	16#0000				
21	%IW108	Hex	16#0000				
22	%IW110	Hex	16#0000				
23	%IW112	Hex	16#0000				~

c. At this point, the last status bit byte of the TIA Portal V17 software uplink data is 16#01 indicating that there is data interaction between the gateways, as shown in the following figure.

i Name	Address	Display format	Monitor value	Modify value	9	Comment	
	%IW280	Hex	16#0000				^
-	%IW282	Hex	16#0000				
	%IW284	Hex	16#0000				
	%IW286	Hex	16#0000				
	%IW288	Hex	16#0000				
	%IW290	Hex	16#0000				
-	%IW292	Hex	16#0000				
	%IW294	Hex	16#0000				
	%IW296	Hex	16#0000				
	%IW298	Hex	16#0000				=
	%IW300	Hex	16#0000				
	%IW302	Hex	16#0000				
	%IW304	Hex	16#0000				
	%IW306	Hex	16#0000				
	%IW308	Hex	16#0000				
-	%IW310	Hex	16#0000				
	%IW312	Hex	16#0000				
	%IW314	Hex	16#0000				
	%IW316	Hex	16#0000				
	%IW318	Hex	16#0000				
	%IW320	Hex	16#0000				
	%IW322	Hex	16#0100				
	%QW2	Hex	16#CDAB				~

i Name	Address	Display format	Monitor value	Modify value	9		Comment	
1	%QW2	Hex	16#FFFF	16#FFFF		4		1
1	%QW4	Hex	16#FFFF	16#FFFF		4		
1	%QW6	Hex	16#0000					
1	%QW8	Hex	16#0000					
1	%QW10	Hex	16#0000					
1	%QW12	Hex	16#0000					
1	%QW14	Hex	16#0000					
1	%QW16	Hex	16#0000					
1	%QW18	Hex	16#0000					
1	%QW20	Hex	16#0000					
1	%QW22	Hex	16#0000					
1	%QW24	Hex	16#0000					Ξ
1	%QW26	Hex	16#0000					
1	%QW28	Hex	16#0000					
1	%QW30	Hex	16#0000					
1	%QW32	Hex	16#0000					
1	%QW34	Hex	16#0000					
1	%QW36	Hex	16#0000					
1	%QW38	Hex	16#0000					
1	%QW40	Hex	16#0000					
1	%QW42	Hex	16#0000					
1	%QW44	Hex	16#0000					
1	%QW46	Hex	16#0000					`

d. In the monitoring table of the TIA Portal V17 software, write the downlink data as shown below.

e. Check the uplink data in TwinCAT3 software to confirm that the data has been entered into the gateway module, as shown in the following figure, the data has been passed in.

Solution Explorer 🔹 🖣 🗙	TwinCAT P	roject1 👍 🗙						
© ⊂ ∰ To + ∰ -=	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
Search Solution Explorer (Ctrl+;)	100	65535 (0xffff)	UINT	2.0	39.0	Input	0	
	101	65535 (0xffff)	UINT	2.0	41.0	Input	0	
Solution 'TwinCAT Project1' (1 project)	× 102	0 (0x0000)	UINT	2.0	43.0	Input	0	
TwinCAT Project1	103	0 (0x0000)	UINT	2.0	45.0	Input	0	
▷ O SYSTEM	≈ 104	0 (0x0000)	UINT	2.0	47.0	Input	0	
MOTION	≈ 105	0 (0x0000)	UINT	2.0	49.0	Input	0	
	≈ 106	0 (0x0000)	UINT	2.0	51.0	Input	0	
SAFETY	107	0 (0x0000)	UINT	2.0	53.0	Input	0	
	801 💌	0 (0x0000)	UINT	2.0	55.0	Input	0	
 Devices 	109	0 (0x0000)	UINT	2.0	57.0	Input	0	
✓ ➡ Device 2 (EtherCAT)	💌 10a	0 (0x0000)	UINT	2.0	59.0	Input	0	
tmage	🕶 10b	0 (0x0000)	UINT	2.0	61.0	Input	0	
Image-Info	🕶 10c	0 (0x0000)	UINT	2.0	63.0	Input	0	
SyncUnits	🕶 10d	0 (0x0000)	UINT	2.0	65.0	Input	0	
Inputs	≈ 10e	0 (0x0000)	UINT	2.0	67.0	Input	0	
Outputs	🕶 lOf	0 (0x0000)	UINT	2.0	69.0	Input	0	
👂 🛄 InfoData	≈ 110	0 (0x0000)	UINT	2.0	71.0	Input	0	
Box 1 (GW6L-A0(L256))	111	0 (0x0000)	UINT	2.0	73.0	Input	0	
Inputs	≈ 112	0 (0x0000)	UINT	2.0	75.0	Input	0	
Outputs	≈ I13	0 (0x0000)	UINT	2.0	77.0	Input	0	
V State	2 114	0 (0x0000)	UINT	2.0	79.0	Input	0	
	# 115	0 (0x0000)	UINT	2.0	81.0	Input	0	
Mappings	116	0 (0x0000)	UINT	2.0	83.0	Input	0	
	2 117	0 (0x0000)	UINT	2.0	85.0	Input	0	
	118	0 (0x0000)	UINT	2.0	87.0	Input	0	
	119	0 (0x0000)	UINT	2.0	89.0	Input	0	
	- 11 -	0 (0,0000)	LUNT	20	01.0	Input	0	

f. At this time, the last status bit byte of the TwinCAT3 software uplink data is 0x01 (Hex) indicating that there is data interaction between the gateways, as shown in the following figure.

Solution Explorer 🔹 👎 🗙	TwinCAT Pr	oject1 😐 🗙						
○ ○ ☆ io - i ● / -	Name	Online	Туре	Size	>Address	In/Out	User ID	Linked to
Search Solution Explorer (Ctrl+;)	≈ 166	0 (0x0000)	UINT	2.0	243.0	Input	0	
	• 167	0 (0x0000)	UINT	2.0	245.0	Input	0	
Solution 'TwinCAT Project1' (1 project)	≈ 168	0 (0x0000)	UINT	2.0	247.0	Input	0	
TwinCAT Project1	≈ 169	0 (0x0000)	UINT	2.0	249.0	Input	0	
SYSTEM	🕶 l6a	0 (0x0000)	UINT	2.0	251.0	Input	0	
MOTION PLC	🕶 l6b	0 (0x0000)	UINT	2.0	253.0	Input	0	
SAFETY	* l6c	0 (0x0000)	UINT	2.0	255.0	Input	0	
SALETT	🕫 l6d	0 (0x0000)	UINT	2.0	257.0	Input	0	
	* 16e	0 (0x0000)	UINT	2.0	259.0	Input	0	
Devices	🕶 l6f	0 (0x0000)	UINT	2.0	261.0	Input	0	
Device 2 (EtherCAT)	≈ 170	0 (0x0000)	UINT	2.0	263.0	Input	0	
📑 🗸 Image	≈ 171	0 (0x0000)	UINT	2.0	265.0	Input	0	
🛟 Image-Info	≠ 172	0 (0x0000)	UINT	2.0	267.0	Input	0	
SyncUnits	∞ I73	0 (0x0000)	UINT	2.0	269.0	Input	0	
Inputs	≈ 174	0 (0x0000)	UINT	2.0	271.0	Input	0	
Outputs	≈ 175	0 (0x0000)	UINT	2.0	273.0	Input	0	
InfoData	176	0 (0x0000)	UINT	2.0	275.0	Input	0	
Box 1 (GW6L-A0(L256))	∞ 177	0 (0x0000)	UINT	2.0	277.0	Input	0	
Dutputs Outputs	≈ 178	0 (0x0000)	UINT	2.0	279.0	Input	0	
 Outputs WcState 	≈ 179	0 (0x0000)	UINT	2.0	281.0	Input	0	
InfoData	💌 17a	0 (0x0000)	UINT	2.0	283.0	Input	0	
and Mappings	🕶 l7b	0 (0x0000)	UINT	2.0	285.0	Input	0	
- mappings	≈ 17c	0 (0x0000)	UINT	2.0	287.0	Input	0	
	🕶 l7d	0 (0x0000)	UINT	2.0	289.0	Input	0	
	≈ 17e	0 (0x0000)	UINT	2.0	291.0	Input	0	
	🕶 l7f	256 (0x0100)	UINT	2.0	293.0	Input	0	

7.2.2 GW6L-B0C0(L256) in TIA Portal V17 and KV STUDIO software

environment

7.2.2.1 preliminary

- hardware environment
 - Module preparation
 This description uses the GW6L-B0C0(L256) Gateway Kit as an example
 - Two computers, one pre-installed with KV STUDIO Ver.10G software and one pre-installed with TIA Portal V17 software
 - Shielded cables for EtherNet/IP
 - > Shielded cables for PROFINET
 - One Siemens PLC
 This description is based on the example of Siemens S7-1200 CPU 1214C DC/DC/DC
 - > One Keens PLC
 - This description takes the KV-8000 as an example
 - > Two switching power supplies
 - > Module mounting rails and rail mounts
 - > Device Configuration Files

Configuration file access: https://www.solidotech.com/documents/configfile

Hardware configuration and wiring
 Follow "5 Installation and uninstall" and "6 Wiring".

7.2.2.2Communication connection in TIA Portal V17 software

1. New construction

a. Open the TIA Portal V17 software and click "Create New Project" .

	Create new project		
Open existing project	Project name:	GW6L	
Open existing project	Path:	C:\Users\29719\Documents	
🥚 Create new project	Version:	V17	
Migrate project	Author: Comment:	Administrator	
Close project			~
Welcome Tour			Create
First steps			

- Project name: customizable, can be left as default.
- Path: the project keeps the path, which can be left as default.
- Version: can be left as default.
- AUTHOR: The default can be maintained.
- Comment: Customizable, may not be filled in.

2、 Adding a PLC controller

a. Click "Configure A Device", as shown in the following figure.

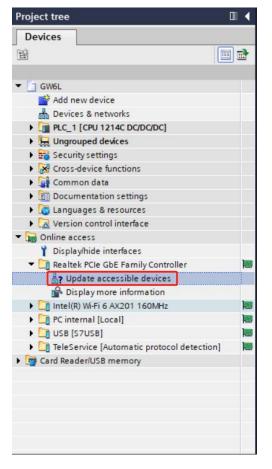
Start			First steps
Devices & networks	1	 Open existing project Create new project 	Project: "GW6L" was opened successfully. Please select the next step:
PLC programming	?	Migrate project	Start
Motion & technology	*	Close project	Devices & Configure a device
Visualization	Í	 Welcome Tour First steps 	networks
Online & Diagnostics	10	This steps	
		 Installed software Help 	Motion & technology Configure technology objects Visualization Configure an HMI screen
			Visualization Configure an HMI screen

b. Click "Add New Device", select the PLC model you are currently using, and click "Add", as shown in the following figure. After adding, you can see that the PLC has been added to the device navigation tree.

		CPU 1211C DC/DC/Rly			
Show all devices		CPU 1212C AC/DC/Rly			CPU 1214C DC/DC/DC
		CPU 1212C DC/DC/DC			C101214C000000C
Add new device		CPU 1212C DC/DC/Rly			
		CPU 1214C AC/DC/Rly		Article no.:	6ES7 214-1AG40-0XB0
	HMI	 CPU 1214C DC/DC/DC 		Version:	V4.5
		6ES7 214-1AE30-0XB0	=		
		6ES7 214-1AG31-0XB0		Description:	
		6ES7 214-1AG40-0XB0			100 KB; 24VDC power supply with
		CPU 1214C DC/DC/Rly			SINK/SOURCE, DQ10 x 24VDC and 6 high-speed counters and 4 pulse
	_	CPU 1215C AC/DC/Rly			pard; signal board expands on-
Configure networks	PC systems	CPU 1215C DC/DC/DC			to 3 communication modules for
		CPU 1215C DC/DC/Rly			inication; up to 8 signal modules ion; PROFINETIO controller, I-
		CPU 1217C DC/DC/DC			port protocol TCP/IP, secure Open
		CPU 1212FC DC/DC/DC			nication, S7 communication, Web
		CPU 1212FC DC/DC/Rly		server, OPC L	IA: Server DA
		CPU 1214FC DC/DC/DC			
		CPU 1214FC DC/DC/Rly			
		CPU 1215FC DC/DC/DC			
Help		CPU 1215FC DC/DC/Rly			
neh		CPU SIPLUS			
		CPU SIPLUS RAIL			
			~		

3、 Scanning connected devices

a. Click "Online Access -> Update Accessible Devices" in the left navigation tree as shown below.



b. When the update is complete, the connected slave devices are displayed, as shown in the following figure.

		GW6L → PL	C_1 [CPU 1214C DC/DC/DC]								- • •
Devices							🛃 Тор	ology view 🔥 Ne	twork view	// 🕅 De	evice view
		Device	e overview								
			Module	Slot	I address	Q address	Туре	Article no.	Firmware	Comment	
GW6L				103							
Add new device				102							
Devices & networks				101							
[PLC_1 [CPU 1214C DC/DC/DC]			▼ PLC_1	1			CPU 1214C DC/DC/DC	6ES7 214-1AG40-0XB0	V4.5		
La Ungrouped devices			DI 14/DQ 10_1	11	01	01	DI 14/DQ 10				
Security settings			AI 2_1	12	6467		AI 2				
Cross-device functions				13							
Common data			HSC_1	1 16	100010		HSC				
Documentation settings			HSC_2	1 17	100410		HSC				
Languages & resources		e c	HSC_3	1 18	100810		HSC				
Za Version control interface		evic	HSC_4	1 19	101210		HSC				
Online access		ă -	HSC 5	1 20	101610		HSC				
Y Display/hide interfaces			HSC_6	1 21	102010		HSC				
Realtek PCIe GbE Family Controller			Pulse_1	1 32		100010	Pulse generator (PTO/P				
2 Update accessible devices			Pulse 2	1 33		100210	Pulse generator (PTO/P				
Pisplay more information			Pulse_3	1 34		100410	Pulse generator (PTO/P				
plc_1 [192.168.0.1]			Pulse_4	1 35			Pulse generator (PTO/P				
pnio [192.168.0.2]			OPC UA	1 254			OPC UA				
Intel(R) Wi-Fi 6 AX201 160MHz			PROFINET interface_1	1 X1			PROFINET interface				
PC internal [Local]				2							
USB [S7USB]				3							
TeleService [Automatic protocol detection]	100	<		-							
📴 Card Reader/USB memory											
							<u>g</u> p	roperties 🚺 Info	1 1 D	iagnostics	
		General	Cross-references C	ompile							
		3 1 0	Show all messages								
			Show an messages								
		! Message						Go to	2	Date	Time
			t GW6Lcreated.					0010		1/17/2024	1:19:05 PM
			ing for devices on interface Real	tek PCIe Cl	E Family Con	troller was st	tarted			1/17/2024	1:32:58 PM
			ing for devices completed for int							1/17/2024	1:32:56 PM

The IP address of the computer must be in the same network segment as the PLC, if not, modify the IP address of the computer and repeat the above steps.

4. Adding a GSD Configuration File

- a. In the menu bar, select "Options -> Manage General Station Description File (GSDML) (D)".
- b. Click Source Path to select the file.
- c. Check if the status of the GSD file you want to add is "Not yet installed", click Install if it is not installed, or Cancel if it is already installed to skip the installation step.

Manage general station description files				×
Installed GSDs GSDs in the project				
Source path: D:\				
Content of imported path				
File	Version	Language	Status	
GSDML-V2.3-Sdot-GW6L_B0(L256)-20230531.xml	V2.3	English	Not yet installed	
<				>
		Delete	Install Cano	el

5. Adding Slave Devices

- a. Double-click on "Devices & Networks" in the left navigation tree.
- b. Click the "Hardware Catalog" vertical button on the right, the catalog is displayed as shown below.

		GW6L Devices & networks	_ # =×	Hardware catalog 🛛 🗊 🔟
Devices		🛃 Topology view 🛛 🚠 Network view	Device view	Options
a)	🔳 🖹	💦 Network 🔢 Connections 🔣 HMI connection 💌 💀 Relations 🕎 👯 📲 🖽 🔢 🔍 生	E	5
			^	✓ Catalog
GW6L				<search></search>
Add new device			-	Filter Profile: All>
devices & networks		PLC_1 CPU 1214C		
PLC_1 [CPU 1214C DC/DC/DC]				Controllers
Ungrouped devices				HMI
Security settings				PC systems
Cross-device functions				Drives & starters
Common data				Network components
Documentation settings				Detecting & Monitoring
Languages & resources				Distributed I/O
Version control interface				Power supply and distribution
🙀 Online access				Field devices
Y Display/hide interfaces			- Cep	Other field devices
 Realtek PCIe GbE Family Controller 	1			
PUpdate accessible devices			l i a	
Pisplay more information			- 5	
plc_1 [192.168.0.1]				
 pnio [192.168.0.2] 				
S Online & diagnostics				
 Intel(R) Wi-Fi 6 AX201 160MHz 				
PC internal [Local]				
USB [S7USB]				
TeleService [Automatic protocol detection]				
Card Reader/USB memory				
			~	

- c. Select "Other field devices -> PROFINET IO -> Gateway -> Sdot -> X-Bus -> GW6L-B0(L256)".
- d. Drag or double-click "GW6L-B0(L256)" to the "Network View" as shown below.

Devices	Topology view Network view 🕅 Device view	Options	
1 I I I I I I I I I I I I I I I I I I I	Network 🔛 Connections HMI connection 💌 💀 Relations 🖽 🎽		Hardware catalog
	▲	✓ Catalog	dwa
- GW6L		fini fini	0
🚔 Add new device			a
devices & networks	PLC_1 PNIO CPU 1214C GW6L_B0_L256 DP.NORM	Filter Profile: All>	alo
PLC_1 [CPU 1214C DC/DC/DC]		Power supply and distribution	. <u>u</u>
Ungrouped devices	Not assigned	Field devices	
Security settings		Other field devices	۷.
Cross-device functions		Additional Ethernet devices	0
Unassigned devices		✓ Im PROFINET IO	1
Common data		Drives	le
Documentation settings	4 2	Encoders	Online tools
Languages & resources	- 2	Gateway	s
Version control interface	4 8	→ 🛅 1/0	
Online access		BAYMRS	
Card Reader/USB memory		👻 🛅 Sdot 📃	Tasks
		IOL7 PN Gateway	sks
		🕨 🧊 SK-PN	
		🗸 🛅 X-Bus	m
		GW6L_B0_L256	-
		XB6-PN0002	ibr
		SIEMENS AG	Libraries
		SOLIDOT	Sa
	~		

e. Click "Not assigned (blue font)" on the slave device and select "PLC_1.PROFINET Interface_1" as shown below.

	🚰 Topology view 🛛 🛔 Network view 🛛 🏦 Dev	ice view
Network L Connection	s HM connection 💌 🗛 Relations 🕎 👯 📲 🛄 🍳 🛨	
		^
		=
PLC_1 CPU 1214C	PNIO	
	GW6L_B0_L256 DP-NORM	
	Not assigned Select IO controller PLC_1.PROFINET interface_1	

f. When the connection is complete, it is shown below.

GW6L > Devices & netwo	ks	_ = = ×
	🛃 Topology view 🛛 🛔 Network view 🛛 🏠 Dev	ice view
Network	HMI connection 💌 🗛 Relations 🕎 🖫 🖬 🛄 🍳 🛨	
	4 IO system: PLC_1.PROFINET IO-System	(100) ^
		=
PLC_1 CPU 1214C	PNIO GW6L_B0_L256 PLC_1	Network data

g. Click on the device name to rename the device, as shown in the following figure.

GW6L → Devices & networks	∎×
🛃 Topology view 🛛 🚠 Network view 📑 Device vie	ew
💦 Network 👖 Connections HMI connection 💌 🗛 Relations 🕎 🖏 📲 📰 🛄 🔍 ± 📑	
IO system: PLC_1.PROFINET IO-System (100)	^
	=
PLC_1 CPU 1214C GW6L_B0_L256 DP-NORM PLC_1	
PLC 1.PROFINETIO-Syste	
	Z
	twor
	k data

h. Click "Device overview" to enter the device overview, you can see the topology configuration information, including the I/O address automatically assigned by the system, the I/O address can be changed by yourself, as shown in the following figure.

			📲 To	pology vie	w 🚠 N	letwork view	Device view
Devi	ce overview						
*	Module	 Rack	Slot	I address	Q address	Туре	Article number
	 GW6L-B0(L256) 	0	0			GW6L_B0_L256	1234567
	PN-IO	0	0 X1			PNIO	
	IN/OUT_1	0	1	68323	2257	IN/OUT	

6. Assign device name

a. Switch to "Network View", right-click the connection cable between PLC and GW6L-B0(L256), and select "Assign Device Name".

GW6L > Devices & networks			-	- •	×
	Topology view	Network view	v 🚺 Devic	e view	/
Network Connections HMI connection	Relations	2 3 1 5	∃ 🛄 🔍 ±		
			T IO-System (10	00) ^	
		_			
				≡	
PLC_1 GW6L-B0(L2 CPU 1214C GW6L_B0_L					
PLC_1	256 DP-NORM				
<u>100_1</u>					
PLC_1.PROFINET IO-	Svete				
	Cut	Ctrl+X Ctrl+C			
	Copy Paste	Ctrl+V			- two
×	Delete Rename	Del F2			, qa
	Assign to new DP master / IC	O controller			
	Compile	•			
	Download to device	•			
×	Go online	Ctrl+K		- 1	
	Go offline Online & diagnostics	Ctrl+M Ctrl+D			
1.20	Assign device name	Ctri+D			
	Assign PROFIsafe address				
i i i i i i i i i i i i i i i i i i i	Receive alarms			~	
< III	Update and display forced o	perands	• .	- 🗉	
	Show catalog	Ctrl+Shift+C	agnostics		
devices & ne	Properties	Alt+Enter	Project GW6L op	ened.	

b. The "Assign PROFINET Device Name" window pops up as shown below.

Assign PROFINET device	name.								×
		Configured PRO	FINET de	vice					
		PROFINET devic	e name:	gw6l-b0(l256)			•		
		Dev	ice type:	GW6L-B0(L256)					
		Online access							
		Type of the PG/PC i	nterface:	PN/IE			-		
		PG/PC i	nterface:	Realtek PCIe G	bE Family	Controller	-] 🖲 🖸	
		Device filter							
8		Only show	devices of	the same type					
				th bad parameter s	settings				
				thout names					
	Accessible dev	vices in the network:							
	IP address	MAC address	Device	PROFINET device	e name	Status			
Flash LED									
	<								>
					Upo	date list	Ass	ign name	
Online status information									
<			111						>
								Close	
							- toosootoo		

Check to see if the MAC address on the module silkscreen is the same as the MAC address of the assigned device name.

- PROFINET Device Name: The name set in "Assign IP address and device name to slave".
- Type of PG/PC interface: PN/IE.
- PG/PC interface: the actual network adapter used.
- c. Select the slave device in turn, click Update List, and click "Assign Name". Check whether the status of the node is "OK" in "Accessible nodes in the network", as shown in the following figure.

		PROFINET	ce name:	gw6l-b0(l256)		-
			vice type:	GW6L_B0_L256		
		Online access				
		Type of the PG/PC	interface:	Ų PN/IE		
			interface:	Realtek PCIe GbE Fa	mily Controller	• 🔊
		Device filter				
		Only show	devices of	the same type		
		<u> </u>		th bad parameter setting	as	
				thout names	3-	
			devices wi	thouthames		
		es in the network:				
	ddress 2.168.0.2	MAC address 8C-F3-E7-20-00-04	Device PNIO	PROFINET device nam gw6l-b0(l256)	e Status	
19.	2.166.0.2	80-13-27-20-00-04	PNIO	gwoi-b0(1256)	OK OK	
<						
					Update list	Assign nar
tatus information:						
earch completed. 1 of 2	devices wer	e found.				
			111			

d. Click Close.

7. Download Configuration Structure

- a. In Network View, check PLC.
- b. Click the Dutton in the menu bar to download the current configuration to the PLC.
- c. In the "Extended Download to Device" pop-up screen, configure the following figure.

	Device	Device type	Slot	Interface type	Address	Subne	t
	PLC_1		1 X1	PN/IE	192.168.0.1	PN/IE_	,1
		Type of the PG/PC inter	face:	PN/IE		-	•
		PG/PC inter	face:	Realtek PCIe G	bE Family Controller	r i	- 🔊
		Connection to interface/su	bnet:	PN/IE_1			•
		1st gate	eway:				-
····	-		PN/IE	Acc	ess address	-	
ji							
•							
Elach LED							
Flash LED							
Flash LED						Star	tsearc
	:			ſ	Display only erro		t searc
Flash LED	:			(Display only erro		t searc
	C.			[Display only erro		t searc
	e			(Display only erro		t searc

d. Click the "Start Search" button as shown below.

		ss nodes of "PLC_1"					
	Device	Device type	Slot	Interface type	Address	Subnet	
—	PLC_1	CPU 1214C DC/D	1 X1	PN/IE	192.168.0.1	PN/IE_1	
		Type of the PG/PC inte	rface:	PN/IE		•]
		PG/PC inte	rface:	Realtek PCIe C	bE Family Controlle	r 💌	
		Connection to interface/su	bnet:	PN/IE_1			1
		1st gat	eway:			Ŧ	1
	Select target de	vice:			Show all compatib	le devices	
	Select target de Device	vice: Device type	Interfa	ace type Ad	Show all compatib	le devices Target devic	
	Device PLC_1		. PN/IE	19	dress 2.168.0.1	14	
ал. ————————————————————————————————————	Device	Device type		19	dress	Target devic	
••	Device PLC_1	Device type CPU 1214C DC/D	. PN/IE	19	dress 2.168.0.1	Target devic	
3	Device PLC_1	Device type CPU 1214C DC/D	. PN/IE	19	dress 2.168.0.1	Target devic	
3	Device PLC_1	Device type CPU 1214C DC/D	. PN/IE	19	dress 2.168.0.1	Target devic	
Flash LED	Device PLC_1	Device type CPU 1214C DC/D	. PN/IE	19	dress 2.168.0.1	Target devic PLC_1 	e
Flash LED	Device PLC_1 -	Device type CPU 1214C DC/D	. PN/IE	19	dress 2.168.0.1 cess address	Target devic PLC_1	
Flash LED	Device PLC_1 -	Device type CPU 1214C DC/D. –	. PN/IE	19	dress 2.168.0.1	Target devic PLC_1	earch
Flash LED	Device PLC_1 - on: ished to the device of	Device type CPU 1214C DC/D. - with address 192.168.0.1.	PN/IE PN/IE	19	dress 2.168.0.1 cess address	Target devic PLC_1 	e
Flash LED	Device PLC_1 - on: ished to the device of	Device type CPU 1214C DC/D. - - with address 192.168.0.1. of 3 accessible devices for	PN/IE PN/IE	19	dress 2.168.0.1 cess address	Target devic PLC_1 	e

- e. Click on "Download".
- f. Select "Continue without synchronization" as shown below.

Softv	vare synchronization	Status	Action	
▼ P	LC_1			
•	'Program blocks'			
	Main [OB1]	•	Manual synchronization required	
•	'PLC tags'			
	Tags	•	Manual synchronization required	
			11	

g. Select "Stop All".

tatus	1	Target	Message	Action
+1	2	▼ PLC_1	Ready for loading.	Load 'PLC_1'
	Δ	 Protection 	Protection from unauthorized access	
	4		Devices connected to an enterprise network or directly to the internet must be appropriately protected against unauthorized access, e.g. by use of firewalls and network segmentation. For more information about industrial security, please visit http://www.siemens.com/industrialsecurity	
	0	Stop modules	The modules are stopped for downloading to device.	Stop all 💌
	•	Device configuration	Delete and replace system data in target	Download to device
	0	Software	Download software to device	Consistent download
]			III	>

- h. Click Load.
- i. Click Finish.
- j. Power the unit back up.

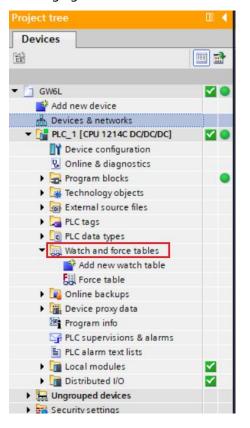
8、 communication link

a. Click the **I** button, ,and then click the "Go Online" button, the connection is successful, as shown in the following figure.

			- * *
Devices		F Topology view 🛛 🛔 Network view	Device view
ă	•	💦 Network 🔛 Connections HM connection 💌 💀 Relations 💯 👯 👕 🖽 🛄 🍳 ±	
		4 IO system: PLC_1.PROFINET I	O-System (100) ^
GW6L			
Add new device			=
d Devices & networks		PLC_1 GW6L-B0(L256)	
PLC_1 [CPU 1214C DC/DC/DC]	4 💿	CPU 1214C GW6L_B0_L256 DP.NORM	
▼ 😓 Ungrouped devices		PLC_1	
Security settings	=		
Cross-device functions		PLC 1. PROFINET IO-Syste	
Common data		PLC_1.PROFINETIO-Syste	
Documentation settings			
Languages & resources			
Version control interface			
Gonline access			
Display/hide interfaces			
Realtek PCIe GbE Family Controller			
Pupdate accessible devices			
Pisplay more information			
Intel(R) Wi-Fi 6 AX201 160MHz			
PC internal [Local]			
USB [S7USB]			
TeleService [Automatic protocol d			~
Card Reader/USB memory		K III > 100%	

9、 Viewing uplink and downlink data

a. Expand the left side of the project navigation, select "Watch and force tables", as shown in the following figure.



b. Double-click "Add New Watch Table", the system adds a new monitor table, as shown in the following figure.

Devices									
ВÎ	🔲 🖻	🔿 🔮 🚓 🔰	0 91 90 2 00 00 1						
		i Name	Address	Display format	Monitor value	Modify value	9	Comment	Tag
GW6L	M 🔵 🔨	1	Add new>						
Add new device									
devices & networks									
PLC_1 [CPU 1214C DC/DC/DC]	M 🔵								
Device configuration									
Online & diagnostics									
Program blocks	•								
Technology objects									
External source files	=								
PLC tags	•								
C PLC data types									
 Watch and force tables 									
Add new watch table									
Force table									
Watch table_1									
Online backups									
🕨 🔄 Traces									
OPC UA communication									
Device proxy data									
Program info									
PLC alarm text lists									
Local modules	Z								
Distributed I/O	V								
La Ungrouped devices									
Security settings									
Cross-device functions									
Common data									
Documentation settings									
Languages & resources									
Version control interface		<							

c. Open the Device View and check the channel Q address (channel address of the output signal) or I address (channel address of the input signal) of the module GW6L-B0(L256) in the device overview.

For example, the "Q address" of GW6L-B0(L256) module is 2 to 257, and the "I address" is 68 to 323, as shown in the following figure.

					🚽 Topolog	gy view 🔥 Netwo	rk view 📑 D	evice vier
Device overview								
1 Module	 Rack	Slot	I address	Q address	Туре	Article number	Firmware	Commen
 GW6L-B0(L256) 	0	0			GW6L_B0_L256	1234567	V10.00.00	
► PN-IO	0	0 X1			PNIO			
IN/OUT_1	0	1	68323	2257	IN/OUT		1.0	

d. Input the address, data type and comments in the Address cell of the monitoring table to facilitate monitoring. You can refer to the definition of the uplink and downlink process data, enter the data items in order, press the Enter key, and then click the button to monitor the data after all the

fields are filled in.

e. The module's uplink data is shown below in the watch table to see if the data is coming in correctly.

i	Name	Address	Display format	Monitor value	Modify value	9	Comment	
1		%IW68	Hex	16#0000				^
2		%IW70	Hex	16#0000				=
3		%IW72	Hex	16#0000				
4		%IW74	Hex	16#0000				
5		%IW76	Hex	16#0000				
6		%IW78	Hex	16#0000				
7		%IW80	Hex	16#0000				
8		%IW82	Hex	16#0000				
9		%IW84	Hex	16#0000				
10		%IW86	Hex	16#0000				
11		%IW88	Hex	16#0000				
12		%IW90	Hex	16#0000				
13		%IW92	Hex	16#0000				
14		%IW94	Hex	16#0000				
15		%IW96	Hex	16#0000				
16		%IW98	Hex	16#0000				
17		%IW100	Hex	16#0000				
18		%IW102	Hex	16#0000				
19		%IW104	Hex	16#0000				
20		%IW106	Hex	16#0000				
21		%IW108	Hex	16#0000				
22		%IW110	Hex	16#0000				
23		%IW112	Hex	16#0000				~

f. In this example, the range of 68~322 bytes in the uplink data is the input data, totaling 255 bytes; the 323rd byte, i.e., the last byte, is the status bit, as shown in the figure below.

i	Name	Address	Display format	Monitor value	Modify value	9	Comment	
		%IW282	Hex	16#0000				^
		%IW284	Hex	16#0000				
		%IW286	Hex	16#0000				
		%IW288	Hex	16#0000				
		%IW290	Hex	16#0000				
		%IW292	Hex	16#0000				
		%IW294	Hex	16#0000				
		%IW296	Hex	16#0000				
4		%IW298	Hex	16#0000				
		%IW300	Hex	16#0000				=
		%IW302	Hex	16#0000				
		%IW304	Hex	16#0000				
		%IW306	Hex	16#0000				
		%IW308	Hex	16#0000				
		%IW310	Hex	16#0000				
		%IW312	Hex	16#0000				
		%IW314	Hex	16#0000				
		%IW316	Hex	16#0000				
		%IW318	Hex	16#0000				
		%IW320	Hex	16#0000				
		%IW322	Hex	16#0000				
		%QW2	Hex	16#0000				
		%QW4	Hex	16#0000				~

g. The downlink data of the module is shown below in the monitoring table for forcing the output data as shown below.

i Name	Address	Display format	Monitor value	Modify value	9	Comment	
	%QW2	Hex	16#0000				1
	%QW4	Hex	16#0000				
	%QW6	Hex	16#0000				
	%QW8	Hex	16#0000				
	%QW10	Hex	16#0000				
	%QW12	Hex	16#0000				
	%QW14	Hex	16#0000				
	%QW16	Hex	16#0000				
	%QW18	Hex	16#0000				
	%QW20	Hex	16#0000				
	%QW22	Hex	16#0000				
	%QW24	Hex	16#0000				
	%QW26	Hex	16#0000				
	%QW28	Hex	16#0000				
	%QW30	Hex	16#0000				
	%QW32	Hex	16#0000				
	%QW34	Hex	16#0000				
	%QW36	Hex	16#0000				
	%QW38	Hex	16#0000				
	%QW40	Hex	16#0000				
	%QW42	Hex	16#0000				
	%QW44	Hex	16#0000				
	%QW46	Hex	16#0000				>

h. In the "Modify Value" cell enter the value, click the ²⁴ button to write, write the value, as shown in the figure below.

i	Name	Address	Display format	Monitor value	Modify value	9	Comment	
1		%QW2	Hex	16#FFFF	16#FFFF		1	^
1		%QW4	Hex	16#FFFF	16#FFFF		1	
1		%QW6	Hex	16#0000				
1 1 1		%QW8	Hex	16#0000				
1		%QW10	Hex	16#0000				
1		%QW12	Hex	16#0000				
1		%QW14	Hex	16#0000				
1 1		%QW16	Hex	16#0000				
1 1 1		%QW18	Hex	16#0000				
1		%QW20	Hex	16#0000				
1		%QW22	Hex	16#0000				
1 1 1		%QW24	Hex	16#0000				=
1		%QW26	Hex	16#0000				
1		%QW28	Hex	16#0000				
1		%QW30	Hex	16#0000				
1		%QW32	Hex	16#0000				
1 1 1		%QW34	Hex	16#0000				
1		%QW36	Hex	16#0000				
1		%QW38	Hex	16#0000				
1 1		%QW40	Hex	16#0000				
1		%QW42	Hex	16#0000				
1		%QW44	Hex	16#0000				
1		%QW46	Hex	16#0000				~

7.2.2.3 Application in KV STUDIO software environment

1. Create Project

- a. Open KV STUDIO software, select "File -> New Project".
- b. In the pop-up box, fill in the "Project Name", select "PLC Model", "Position", as shown in the figure below

KV :	STUDIO											\times
File(F)	View(V)	Monitor/Simulator(N)	Operation re	corder/Replay(R)	Tool(T) Wind	dow(W)	Help(H)					
i 🗅 📂		19 11 R 🖶 R 🕐	Ethernet	•	D 💕 🗐 🔂	1 d	K= ()		\$F5 F4 \$F4 F7	F8F8SF8SF8SF8		
:	≣ ≣ ≋	@ ## 5 % %	₹.00►		(⊢ ♥)> >	-0.	y Ö 🛤	1		* Comments		Ŧ
			F	New project				×				
				Project name(N)			PLC model(K)				
				GW6L			KV-8000	~				
				Position(P)								
				D:\Backup\Docum	ents\KEYENCE\k	VS10G\K	VS\PROJECT	Refer(S)				
				Comment(C)								
								^				
								~				
				AVV display comme	ents(\ <u>//)</u>							
				KVS PROJECT								
				Register specia	I device cmnts(M)	ок	Cancel				
								_				

- Project name: Customize.
- PLC model: View the PLC appearance and select the corresponding model, e.g. KV-8000.
- c. The "Confirm Unit Setting Information" window pops up, and you can select to start the Unit Editor, close the dialog box, or read the unit configuration from the PLC as necessary. Select "No" to demonstrate the operation, as shown in the figure below.

KV STUDIO -[Editor: KV-8000] - [GW6L *]		- 🗆 ×
	i) Convert(A) Monitor/Simulator(N) Debug(D) Operation recorder/Replay(R) Tool(T) Window(W)	
🕴 🗅 🧑 🗟 📾 📫 🚵 🖶 🖨 🗟 🕐 🗮 Us		
i 🖉 🗄 📰 🌌 🖾 🖼 📲 🏅 🗞 😼 🔍 🌒	● ► ■ II H4 ▲ H H ▼ HI > ◎	Ŧ
Project 🕂 🗸	Main X	
Duit configuration Unit configuration Unit configuration switching Device comment Label		
Operation recorder setting CFU system setting A Program: GW6L Every-scan execution	00002	
<pre>minimization module Initialize module Standby module Fixed-period module Inter-unit sync module Function Block Starco</pre>	of Confirm unit setting information × Setup unit setting info now? • of "[Yes]—Start Unit Editor. • * [No]—Close this dialog. • * [Read unit setting)—Read unit setting information from PLC. •	
Subroutine macro Self-hold macro Device default	Yes(Y) No(L) Read unit setting(L)	
 File register setting O:Memory card I:CPU memory CPU memory 	0000	
a oser document -	00007	END
	00008	ENDH

2. Communication settings

Select the communication method, if the PLC and the host computer software are connected through a network cable, select "Ethernet", if connected through USB, select "USB".

Procedure for "Ethernet" operation

a. Click the to the menu bar to display the "Communication Settings" window as

shown below.

C comm port		
USB(<u>U</u>)	⊖ Serial(<u>S</u>)	
C Ethernet(E)	O Bluetooth(<u>H</u>)	○ Modem(<u>M</u>)
SB settings		
No settings.		
Routing setting(<u>R</u>)		
PC comm port : USB		
PC comm port : USB via VT/DT : No via network : No		
PC comm port : USB via VT/DT : No		Detaï(<u>A</u>)

Select "Ethernet", click "Destinations", select "1 sample", configure the IP address, and click
 "Search Destination Target". Click "Find Connection Target", as shown in the following figure, the IP address is configured in the "192.168.0" network segment.

776		
PC comm port		
	◯ Serial(<u>S</u>)	
Ethernet(E)	O Bluetooth(<u>H</u>)	○ Modem(<u>M</u>)
Ethernet settings		
IP address(])	192 . 168 . 0 . 10	Search dest.(F)
Port No.(P)	8500	Conn. test(T)
PC comm port : US via VT/DT : No		
PC comm port : US	SB	Detail(<u>A</u>)
PC comm port : US via VT/DT : No via network : No	SB	Detail(A) Cancel
PC comm port : US via VT/DT : No via network : No Connected model Destinations(L) Add to des	58 :	

c. In the "Search Destination" pop-up window, select the "network card" and click "Execute", as shown in the following figure.

Select network card				
	1			
Network card (N)	Realtek PCIe GbE Family C	ontroller		~
IP address	192.168.0.254			
Subnet mask	255.255.255.0			
Port No.(P) 8	500 Exe	cute(<u>S</u>) Stop	p(<u>B</u>)	
	here broadcast packets rea y increase according to the		units.	
IAC address	Connected Unit typ	e IP address	Project name	

d. Select the found PLC and click "Execute" as shown in the following figure.

Select network card				
Network card (N)	Realtek PCIe GbE Family Contro	ller		~
IP address	192.168.0.254			
Subnet mask	255.255.255.0			
Port No.(P) 85	00 Execute	(S) Stop(D)	
	Execute	(<u>5</u>) Stop(<u>b</u>)	
nd Ethernet unit wh	ere broadcast packets reach. (KV only)		
	increase according to the numl		te.	
wetwork load may	increase according to the humi	ber of connected un	ns.	
esult				
AC address	Connected Unit type	IP address	Project name	
	All and a state of the state of	192.168.0.10	11	
-01-FC-ED-53-73	KV-8000	132.100.0.10		
-01-FC-ED-53-73	KV-8000	152.100.0.10		
-01-FC-ED-53-73	KV-8000	192.100.0.10		
-01-FC-ED-53-73	KV-8000	192.100.0.10		-
-01-FC-ED-53-73	KV-8000	192.100.0.10		
-01-FC-ED-53-73	KV-8000	152,100.0.10		
-01-FC-ED-53-73	KV-8000	192.100.0.10		
-01-FC-ED-53-73	KV-8000	132.100.0.10		
-01-FC-ED-53-73	KV-8000	152.100.0.10		
-01-FC-ED-53-73	KV-8000	192.100.0.10		
-01-FC-ED-53-73	KV-8000	152.100.0.10		
-01-FC-ED-53-73	KV-8000	152.100.0.10		
-01-FC-ED-53-73	KV-8000	152.100.0.10		
⊢01-FC-ED-53-73	KV-8000	152.100.0.10		
-01-FC-ED-53-73	KV-8000	152.100.0.10	Select	Cancel

e. Click the "OK" button on the Communication Settings window.

"USB connection" operation method

Select USB on the "Communication Settings" screen.

3、 EtherNet/IP settings

a. Double click "Unit Configuration -> KV-8000 -> EtherNet/IP R30000 DMI10000" in the left navigation tree to bring up the "EtherNet/IP Settings" window. Select "Manual" or "Auto Configuration" as required. Select "Manual" to demonstrate the operation as shown in the figure below. When the setting is completed, click "OK" to close the window.

File(F) Edit(E) View(V)	📕 EtherNet/IP settings		-		× Ip(H)	
i 🗅 🤭 🗄 🗎 📴 🛗 🛛	File(F) Edit(E) Settings(S) View(V) Convert(C) EDS file(D) Comm	unication(N) Tool(T) Help(H)			_	
i _A 1	- 🕊 🛈 🐩 🗞 🕹 🏠 🦍 👘 🎒 👫 🖏 🍠 🗞 🛱 🧠 💌 🗽 🛃 🎱	EtherNet/IP unit			a ×	•
Unit configuration		Unit list(1) Unit setting(2)	Search u	nit(3)	_	10
[0] KV-8000					-	10
EtherNet/IF		Unit name	Rev.	EDS fil		
Unit configura		Keyence Corporation				
Label		KV-5500	1.1	KV-5500	KV-8000	
Operation record		KV-7500	1.1	KV-7500	^	
CPU system setti		KV-8000	1.1	KV-8000		
🖬 🚔 Program: GW6L		E KV-EP02	1.1	EtherNe		
😑 🚞 Every-scan exe 🔳 📸 Main		KV-N16ER		16-poin		
Initialize mod		KV-N16ET*		16-poin		
Standby module		×		16-poin		
Fixed-period #		1		2+1ch a		
🔄 📄 Inter-unit syn	The EtherNet/IP setting has not been set. Ple * "Manual"Set the configuration from the			8-point	be	
Function Block	* "Auto Configuration"Search the connect			8-point	ion KV	
E S Macro		_		8-point	~	
Subroutine mac		Configuration(A)		>		
Device default			_			
🖬 👘 File register se						
0:Memory card						
1:CPU memory						
🖬 🛄 User document					_	
	Output				ф	
					>	
		Lucción de la companya de la compa			ply	[END
	N Node name IP address Co	nnection (ms)	N] RPI[OUT] Time of	ut	
		(IIIS)	(11	- /	-	
						ENDH -
	I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			>		
	Edito		6		10	
	Edito	r OK	Cance	Apply		

4. Installation of EDS files

a. Right-click the KV-8000 in the Unit Editor window and select "EtherNet/IP Settings" to enter the settings page as shown below.

M KV STUDIO -[Editor: KV-8000] - [GW6L *]		
File(F) Edit(E) View(V) Program(M) Script(S) Convert(A) Monitor/Simulator(N) Debug(D) Operation recorder/Replay(R)	Tool(T) Window(W) Help(H)
🗅 📂 🖶 📾 📫 🛤 🗮 🗟 🕢 🔡 Et	hernet 🔹 💀 💕 📲 👺 🔕 🗹 🖏 🕮 😂 📟 🔛 🗄 부 🍄 부 부	F4 F7 5F7 F8 5F8 F9 5F9
		Comments Comment 1
		X
Troject 4 7		
[0] KV-8000	File(F) Edit(E) Convert(P) View(V) Option(O) Window(W) Help(H)	
EtherNet/IP R30000 DM10000		0
💭 Unit configuration switching		Unit a
- 📴 Device comment	0 Width:57mm KV-8000	Select unit(1) Setup unit(2)
T Label	Height:90mm	
Operation recorder setting EVEN System setting	Depth:115mm Curr. Cons.:400mA	TE P=
Program: GW6L	Weight: 340g EtherNet/IP setting(F) Ctrl+F	
Every-scan execution		Socket function Not used(*) •
🖬 📑 Main	Setup mail(M) Ctrl+M	Leading DM No. DM10000
Initialize module	Mail Command Maker(2)	Number of DMs 230
Fixed-period module	FTP client setting(J)	Leading relay R30000
Inter-unit sync module		Number of rel 640
- Function Block		Baud rate 100/10Mbps aut
🚍 🚍 Macro		Setting metho Fixed IP addre
Subroutine macro		TP address 192 168 0 10 ¥
Self-hold macro Device default		Socket function
a ∰ File register setting		When socket function is used, the following functions, settings may be used. "Socket0"-"Socket15", "Common KV socket".
	Message	д
	Process Row No. Code Message	
	II I I Message	>
	Display EtherNet/IP setting screen. Editor	Line:1, Col:1 OK Cancel Apply

b. Click "EDS File" in the menu bar of the "EtherNet/IP Settings" screen, and then click "Registration" as shown in the following figure.

<pre>May Endity Find an Approximation Solution May Endity Find an Approximation May Endity Find Approximation May Endity Find</pre>	🞆 KV STUDIO -[Editor: KV-8000] - [GW6L *]					
Image: Section recorder setting Image: Section recorder setting <th>File(F) Edit(E) View(V) Program(M) Script</th> <th>(S) 🛼 EtherNet/IP settings</th> <th></th> <th></th> <th>-</th> <th>×</th>	File(F) Edit(E) View(V) Program(M) Script	(S) 🛼 EtherNet/IP settings			-	×
Reg(h roject I X Totic configuration I X Totic configuration I Value configuration Dial configuration I Value configuration Device comment I Value Device comment I Value configuration Display all EDS files(V) Property(P) Totaliste module I Value configuration Display all EDS files(V) Property(P) Text y-scan execution I W Y-NIGER I I Ferdiance Display all EDS files(V) I W Y-NIGER I I Ferdiance Display all EDS files(V) I W Y-NIGER I I Ferdiance Display all EDS files(V) I W Y-NIGER I I Ferdiance Display all EDS files(V) I W Y-NIGER I I Ferdiance Frequency condite I W Y-NIGER I I Ferdiance Frequency condite I W Y-NIGER I I Ferdiance Fi W Sec document I W Sec W W W W W W W W W W W W W W		the File(F) Edit(E) Settings(S) View(V) Convert(C)	EDS file(D) Communicati	on(N) Tool(T) Help(H)		
Project 9 Olit configuration 9 Init configuration 9 Init configuration 9 Init configuration setting 9 Detector 10 Marco comment(E) Add to scan list(A) Display all EDS files(V) 9 Property(P) 7500 Initialize module 5500 Standy module 11.1 Inter-unit sync module 11.1 Standy module 11.1 Inter-unit sync module 11.1 Standy module 11.1 Standy module 11.1 Property(P) 11.1 Standy module 11.1 Inter-unit sync module 11.1 Standy module 11.1 Property (P) 11.1 Standy module 11.1 Inter-unit sync module 11.1 Standy module 11.1 Property (P) 11.1 Standy module 11.1 Standy module 11.1 Standy module 11.1 Standy module 11.1			Reg(I)			
rojet 0 X Construction Statistics (Construction Statistics) (Construct			Delete(D)	unit		a
Add to scan list(A) Dist configuration switching Port configuration switching Property(P) P	-		Search(S)		the sector of the sector of the	
EtherNet/IP B30000 DH10001 Wilt configuration switching Device comment Goperation recorder setting Operation recorder setting Coll system setting Property(P) Tabel Property(P) Tabel Property(P) Tabel Property(P) Tabel Property(P) Tabel Property(P) Tabel Property(P) Table Property P) Subroutine macrol Poler Poler		8	Edit comments(E)		earch unit(3)	
Diploy all EDS files(V) Display all EDS files(V) Display all EDS files(V) Display all EDS files(V) Display all EDS files(V) SS00 1.1 KV-SS00 SS00 SS00 1.1 KV-SS00 SS00 S			Add as seen line(A)			
<pre>Bip System setting C Operation recorder setting C Standy module F Inter-unit sync module F In</pre>						^
Image: Status Property(P) 5500 1.1 KV-5500 CCPU system setting 7500 1.1 KV-7500 1.1 Image: Status Forgram: GWEL Image: Status			Display all EDS files(V)	ice corporation		
CPU system setting CPU system setting Program: GWEL			Property(P)			
CHO System Securing B Programs GWL B Programs GWL Initialize module Standby module Fixed-period module Fixed-period module Standby module Fixed-period module Standby module Standby module Fixed-period module Standby module Standby module Fixed-period module Standby module Standby module Fixed-period module Inter-unit sync module Subroutine macro Subroutine macro Subroutine macro Device default I l:CPU memory User document Output Macro N Node name IP address Connection RPI(IN) RPI(OUT) (ms) Time out (ms) N Node name IP address Connection	Operation recorder setting					
<pre>B Device document</pre>						
<pre># Main Initialize module Standby module Fixed-period module Fixed-period module Inter-unit sync module Function Block Betroutine macro Subroutine macro Su</pre>	🚍 🚔 Program: GW6L		8			
Thitalize module Standby module Fixed-period module Inter-unit sync module Rtw-Nicex Nector Subroutine macro Subroutine macro Subroutine sector Output Output Set document Output N Node name IP address Connection RPI(IN) RPI(IN) RPI(IN) RPI(IN) Ressage/Verify Setup list						
Standby module Fixed-period m						
Fixed-period module Inter-unit sync module Function Block Function Block Subroutine macro Subroutine macro Subroutine macro Subroutine macro Subroutine macro Weile register setting Output Output Output N Node name IP address Connection RPI[IN] RPI[OUT] Time out (ms) Time out (ms) Time out (ms) Time out (ms) Setup list						
Inter-unit sync module Pinction Block Pinction Block State Macro Subjointing macro Device default Pile register setting Output Device document Output Dutt Dutt <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
Function Block Macro Subroutine macro Subroutine macro Self-hold macro Device default Output Output Output Output A Device document Device docum						
Image: Set of the second se						
Subcoutine macro Subcoutine macro Subcoutine macro Subcoutine macro Device default 1:CPU memory Device document Output Output Output N Node name IP address Connection RFI[IN] RFI[OUT] Time out (ms) (ms) Content Cont	a 🗐 Macro					
Image: Self-hold macro Image: Device default Image: Self-hold macro Image: Self-hold macr	- E Subroutine macro		<	THE NORME	1 1 010	> '
Image: Split of resting EDS for GWEL_CO_LISE In 1CFU memory Image: Split of the						
■ Pile register setting ■ 0:Hemory card ■ 1:CFU memory ■ 1:CFU memory ■ 1:CFU memory ■ 0:M IP ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●						
ICCU memory Image: User document Output Image: Ima			220	101 0.00_00_0000		
Image: Second comment Output Image: Second comment Image: Sec						
Output a Im Im						
Image: Setup list Im	a - Oser document	Output				Д
N Node name IF address Connection RFI(IN) (ms) RPI(OUT) (ms) H + H Message/Verify Setup list I >						
N Node name IF address Connection (ms) (ms) lime out						
		N Node name IP addre	ss Connect			e out
Read EDS file, and register to the unit list. Editor OK Cancel Apply		H + + H Message Verify Setup list	() <			>
		Read EDS file, and register to the unit list.	Editor	OK	Cancel App	v

c. In the folder where the EDS file is placed, select the EDS file of the corresponding model and click "OK", the configuration file installation is completed, as shown in the following figure.

	0000[0] : 192.168.0.10		EtherNet/IP unit		
			Unit list(1) Unit setting(2)	Search u	init(<u>3)</u>
			Unit name	Rev.	EDS fil
			WI-5000 Series	1.1	WI-5000
			xG-8000/7000	1.2	XG-8000
			XG-X1000 Series	1.1	XG-X100
			XG-X2000 Series	1.1	XG-X200
			Generic Device	1.1	Generic
			- Nanjing Solidot		
			EI3-1616A	2.3	EDS fil
			EI4-1616A	2.3	EDS fil
			EI4-A80V	2.3	EDS fil
			B GW6L C0 L256	1.1	EDS for
			5D-0030	1.1	V1.0 ED
			303 XB6S-E12002	2.3	EDS fil
			<		>
			1		>
			GW6L_C0_L256[1.1] EDS for GW6L_C0_L256		
utput					
	<i></i>				

5、 topological configuration

Topology configuration can be "manually added" and "auto-configuration" two ways, this configuration using manual configuration.

a. Enter the "EtherNet/IP Settings" page and switch to the "Search Unit" tab, as shown in the following figure.

(1) 新 ⅔ ¼ ¼ ╗ (1) 新 페 ♂ 6 @ @ M k	Eth	erNet/IP unit nit list(1) Unit se nit list(1) Display Unit name	tting(2) <mark>Search un all</mark> IP address	~
	Ur	nit list(1) Unit se	all	iit(<u>3)</u>
	1	Display	all	~
				s MAC a
		Unit name	IP address	s MAC a
	K			
out M IP IN IN IN IN Address	Conne	ction	RPI[IN] RPI[((ms) (ms)	
	0			
H Message Verify Setup list	[] < Editor	1	OK Cancel	Apply

b. Click , select the communication path, and the USB connection method is shown in the following figure.

lonoming ingule.	
LtherNet/IP settings	- 🗆 X
File(F) Edit(E) Settings(S) View(V) Convert(C) EDS file(D) Comm	nunication(N) Tool(T) Help(H)
📲 🕼 🐕 💫 🛍 🐘 📑 🌮 🚳 🔍 💌 🛍 😭 🥝	
KV-8000[0] : 192.168.0.10	EtherNet/IP unit
	Unit list(1) Unit setting(2) Search unit(3)
	👫 🐘 者 Display all 🗸 🗸
	Unit name IP address MAC a
Select communication path	×
Ethernet port of EtherNet/IP unit vi	ia PLC(P)
OPC Ethernet port direct link(D)	
	1
	:
OK	Cancel
Output	
N Node name IP address Co	onnection RPI[IN] RPI[OUT] (ms) (ms) Time out
	(10) (10)
If I I I Message Verify Setup list	>
Edito	or OK Cancel Apply

c. "PC Ethernet Port Direct Link" is the network cable connection method, as shown in the following

figure.

LtherNet/IP settings					
File(F) Edit(E) Settings(S) View	(V) Convert(C) EDS fi	le(D) Communication(N) To	ool(T) Help(H)		
📲 🕼 🐕 📽 🐘 🛤	Y 🝠 😚 🚳 🖱 😿 🗎	la lit 🕜			
KV-8000[0] : 192.168.0.10		EtherNet/IP uni	t		
		Unit list(<u>1</u>) U	Jnit setting(<u>2</u>)	Search unit(<u>3</u>)	
		🙀 🙀 🛃 Di	splay all		~
		Unit nam	me IP	address	MAC a
	-				
	Select communication	n path	×		
	O Ethernet port of Eth	erNet/IP unit via PLC(<u>P</u>)			
	PC Ethernet port dir	rect link(D)			
	5				
		:	- All 1997		
					>
		OK Cancel	_		
		OK Cancel			
Output					a.
•••••••••••••••••••••••••••••••••••••					
N Node name	IP address	Connection	RPI[IN (ms)		Time out
II II III Message Verify Setup I	st				>
		Editor	OK	Cancel	Apply

d. Select "PC Ethernet Port Direct Link" to bring up the "Select NIC" window, and set the local NIC and IP address, as shown in the following figure.

LtherNet/IP settings							
File(F) Edit(E) Settings(S)	View(V) Convert(C)	EDS file(D) Communication(N)	Tool(T) Help(H)				
📲 🛈 🐕 🖏 👗 🛍 👘	h 🖻 🖋 🗟 🕲	🖗 😿 🗽 🚺 🕜					
KV-8000[0] : 192.16			Et	nerNet/IP un	it		Д
			U	nit list(<u>1</u>)	Unit setting	2) Search unit(3)	
			*		isplay all		~
				Unit na	ame	IP address	MAC a
	Select network care				×		
	Network card(N)	Realtek PCIe GbE Family Controller			~		
		192.168.0.254					
	IP address	192.108.0.254					
	Subnet mask	255.255.255.0					
			OK	(Cancel		>
Output							ф
<u>a n a s s a n</u>							
N Node name	IP addr	Connection	RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Refresh priority	
H + + H Message Verify	Setup list	[] <					>
			Editor		OK	Cancel	Apply

e. Click to search for devices connected to the network. Set the IP address segment for

searching, and click "Search" as shown in the following figure.

				erNet/IP un hit list(1) I		Search unit(<u>3</u>)	
				11. At 12	isplay all		Y
				Unit na	me I	P address	MAC a.
	Search un	it settings	×				
	Search st	art address(T) 192 . 168	. 0 . 0				
		n unit without IP address(U) st acceptance time(Q) 15	s				
		Search(<u>F</u>)	Cancel				
utput							

f. When the search is complete, the display is shown below.

K EtherNet/IP settings					0000		×
File(F) Edit(E) Settings(S) View(V)	Convert(C) EDS file(D) C	Communication(<u>N</u>) Too	l([]) Help(H)				
🐗 🕦 🐕 🗣 👗 🖻 👘 🥵	' 😚 🖗 🔍 😿 🖿	0					
KV-8000[0] : 192.168.0.10			EtherNet/IP unit				д
			Unit list(<u>1</u>) Unit	t setting(2) Search u	nit(<u>3)</u>		
			🚮 🖬 🗗 Displ	lay all	\sim		
			Unit name			address	
			GW6L_C0_L2	56 <u>192.168.0.1</u>	8C:F3:E	7:00:00:0	03
			GWEL_C0_L256	[1.1]			
				next time: Fixed IP	start		
			EDS file for G	Wel_C0_L256			
Output							д
9a ma # 57 12 154 154							
N Node name	IP address	Connection	RPI[IN] R (ms)	RPI[OUT] (ms) Time out	Refre		
			(ms)	(1003)	PIIOII	01	
H + + Message Verify Setup list							>
			Editor	OK	Cancel	Apply	

Double-click on the found device to add it to the configuration, as shown below. g.

📕 EtherNet/IP settings							0.000		\times
File(F) Edit(E) Settings(S) View(V)	Convert(C) ED	S file(D) Communication(N)	Tool()	Help(<u>H</u>)					
📲 🕼 🐕 🐾 👗 💼 👘 👫	🤊 🚳 🔍 🗹	to ti 🕜							
KV-8000[0] : 192.168.0.10			Eth	erNet/IP unit					ņ
			Un	it list(1) U	nit setting(2) Search un	it(<u>3</u>)		
			1. Sec. 1. Sec	🐂 🛃 Dis	play all		~		
1: GWEL_C0_L256 : 192.	168.0.1			Unit nam		IP address		addres	
Exclusive Owner				GW6L_CO_L	256 <u>192</u>	<u>. 168. 0. 1</u>	8C:F3:E	7:00:00:	03
			G	EL_CO_L25	6[1, 1]				
			So	lidot					
				S file for		e:Fixed IP 256	start		
Output									ņ
bib # <i>₽</i> 88 0\$ 0									
N Node name	IP address	Connection		RPI[IN] (ms)	RPI[OUT] (ms)	Time out	Refre priori		
1 GW6L_C0_L256	192.168	Exclusive Owner		5.0	80.0	RPI*16	Normal		
I I I Message Verify Setup list		(<							>
				Editor		OK	Cancel	Apply	/

6、Setting the IP address

In the interface of the found device, double-click the IP address column and configure the IP address in the pop-up box. The default address network segment is 192.168.0.

Description:

-The timeout for setting the IP address needs to be configured to 60s.

-If the dipswitch is configured with an IP address, the IP of the dipswitch prevails.

In this example, the GW6L-C0 (L256) uses a dial-up IP address of 192.168.0.1.

7. Configure the amount of uplink and downlink data

a. Click the Switch Mode option in the menu bar to switch to Editor mode, as shown in the following figure.

File(<u>F)</u> Edit(<u>E)</u> View(<u>V)</u> Program(<u>M</u>) Script(<u>S</u>)	Conver	t(<u>A</u>) Monitor/Simul	ator(<u>N</u>) Debug(<u>D</u>)) Operation	recorder/Replay(<u>R</u>) T	ool() Window	(W) Help(H
🗋 🤒 🖶 🚔 📸 🛤 🖶 🗟 🕢 👔 🔛 Eth	ernet	- 🛛 📑	📲 🗈 🖸 🖬	i 🏛 🚉 🖭	DEN : F5 SF5 F4 SF4 -	F7 SF7 F8 SF8 F OO-I I	3 SF9
.4 🗄 🗄 🗷 📾 🎬 🖷 🎜 🗞 😽 🗨 🌒		II HI & H H	7 H > O	- 	Editor	- Comment	s Comment
roject 4 X	Main	×			Editor		
Unit configuration		1	2 3	4	Monitor Online edit	7	8
[0] KV-8000					Simulator		
EtherNet/IP R30000 DM10000	00001				Simulator edit		
[1] GW6L_C0_L256	00001				Replay		
Unit configuration switching Device comment							
Label							
Operation recorder setting	00002						
CPU system setting							
🖬 🚔 Program: GW6L				· · · · · · · · · · · · · · · · · · · ·	+++		
🚍 🫅 Every-scan execution							
🖬 📑 Main	00003						
Initialize module Standby module							
- Fixed-period module							
Inter-unit sync module	00004						
- J Function Block	00004						
Macro							
- 🔚 Subroutine macro							
Self-hold macro	00005						
III Device default Pile register setting							
0:Memory card							
1:CPU memory							
n 🎴 User document	00006						

b. Enter the "EtherNet/IP Settings" screen and click "Exclusive Owner" to bring up the "Connection Settings" window. In the "Connection Settings" window, click "Setup Parameter" as shown below.

EtherNet/IP settings						- 🗆	\times
File(F) Edit(E) Settings(S) View(V)) Convert(Connection settings - 1:GW	6L C0 L256	5 ?	×]	
🛷 🛈 📸 🖏 👗 🛍 🐘 📑							
	D I W I	No. Connec	tion	Application type			ņ
KV-8000[0] : 192.168.0.10		1 Exclusive Owner		exclusive owner		tion 1	~
						nit(<u>3)</u>	
1: GW6L CO L256 : 192 Exclusive Owner	.168.0.1						^
1999 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 - 1996 -		Add(A) Delete(E	=)			0.1 L256	
		Connection name(C)	Exclusive C	human	~	L256	
					*	ch	
		Time out(T)	RPI*16	 (IN:80.0ms / OUT:800.0ms) 			
		Refresh priority(E)	Normal		~	P	
			Setup par	ameter(P) Assign device([D)	2	
		IN (input from adapter)				or	
		Connection type					
		Connection point			~		
		Data size	0	Word			
				word	_		
		Send trigger	Cyclic		Y		
		RPI (communication cycle)	5.0	ms (2.0 to 50.0ms)		-	*
		Production inhibit time	-	ms			
		OUT (output to adapter)				-	
Output		Connection type					
₽ m # <i>\$</i> 7 8 % ∰		Connection point			\sim		
N Node name	IP add	Data size	0	Word		111	Refres riorit
1 📓 GW6L C0 L256	192.16	RPI (communication cycle)	50.0	ms (2.0 to 50.0ms)		Norma	
			Keep cor	 nsistent with IN			
H + + H Message Verify Setup list							>
				OK Ca	ncel	Appl	y] /

c. In the "Setup Parameter" window, you can configure the uplink and downlink data volume, the uplink and downlink data volume are 256 bytes, as shown in the figure below. Click "OK" to save

the settings.

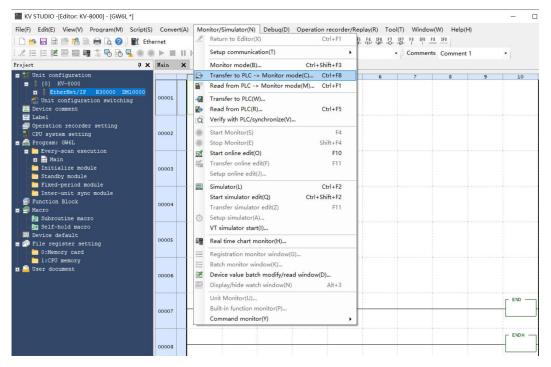
LtherNet/IP settings		- 🗆 ×
File(F) Edit(E) Settings(S) View(V) Convert	onnection settings - 1:GW6L C0 L256 ? ×	
4 🛈 🚔 🕾 👗 🖿 👘 👘 😤 🚳 殿		
	No. Connection Application type	4
KV-8000[0] : 192.168.0.10	1 Exclusive Owner 😵 exclusive owner	nit(3)
	Setup parameter X	nic(2)
1: GW6L_C0_L256 : 192.168.0.1	Parameter(P) GW6L_C0_L256 ~	^
	No. Parameter Set value Attribute	0.1
	0004 Reserve0 0: R/W	L256
	Conr 0005 Reserve1 0: R/W ~	L256
	Time 0006 Consumed Data Size 256 R/W	ch
	0007 Produced Data Size 256 R/W	
	Refre	P
	IN 0	ior
	Con	
	Con	
	Data	
	Sen Description Upload Data Size	
	RPI Range 0 to 1448	~
	Current set 256	
	Pro(value	
	OUT	
Output	Con	ą
		-
<u>₽</u> • • • • • • • • • • • • • • • • • • •	Con	
N Node name IP add	Data Restore to default(D) OK Cancel	ut Refres priorit
1 GW6L_C0_L256 192.16	RPI (communication cycle) 50.0 ms (2.0 to 50.0ms)	Normal
	Keep consistent with IN	
II I I Message Verify Setup list		>
	OK Cancel	Apply

- d. In the Connection Settings window, click OK.
- e. In the EtherNet/IP Settings window, click Apply and click OK.
- f. In the Cell Editor window, click Apply and click OK.

8. Configuration Download

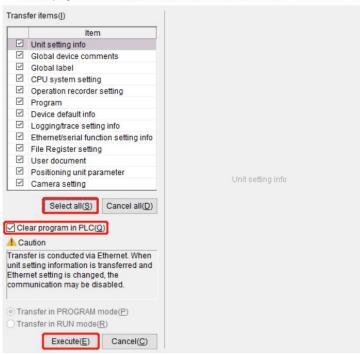
After module configuration and parameter setting are completed, download to PLC operation is performed.

a. Click "Monitor/Simulator (N) -> Transfer to PLC -> Monitor Mode (C)" in the menu bar as shown below.

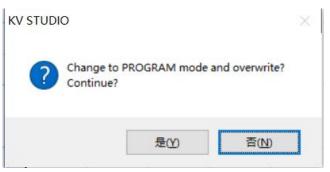


b. The Transfer Program window pops up, check "Clear Program in PLC", click "Select All", click "Execute" to download the program to the PLC, as shown in the following figure.

📰 Transfer program [Communication destination: KV-8000, route: Ethernet 192.168.0.1... 🗙



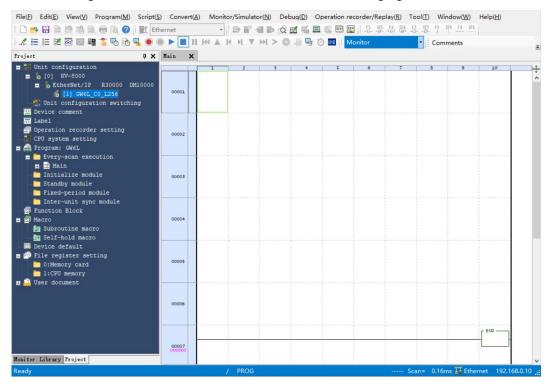
c. A prompt box pops up "Change to PROGRAM mode and overwrite? Continue?" Click to select "Yes" as shown below.



d. After writing to the PLC is completed, a pop-up box will appear, "Change to RUN mode", click and select "Yes", as shown in the figure below, to enter the monitoring mode.

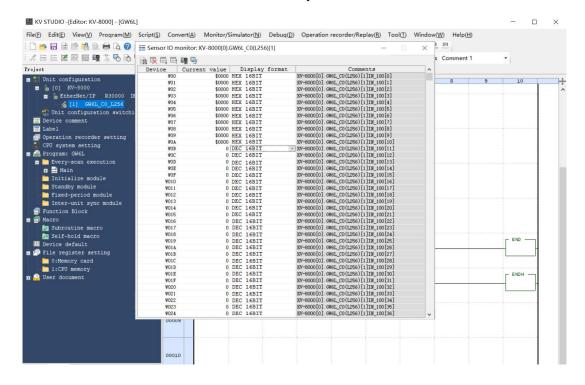
KV STUDIO	\times
Change to RU	JN mode?
是①	香(<u>N</u>)

e. After the configuration is downloaded, it is shown in the following figure.



9、 data monitoring

a. In monitor mode, double-click the "GW6L-C0(L256)" icon to open the monitor table, and you can monitor the uplink and downlink data. The uplink data is shown in the monitor table as below, which is used to check whether the data is correctly transmitted.



b. The first byte range of W00~W07F in the uplink data of this example is the input data, totaling 255 bytes; the last byte of W07F is the status bit, as shown below.

ile(E) Edit(E) View(V) Program(M)	Script(S) Conv	vert(<u>A</u>) Monitor/Simulator(<u>N</u>)	Debug(D) (Operation recorder/Replay(<u>R</u>)	Tool (1) Wind	low(M) Help(H)		
🗅 📂 🖶 📾 📂 🛍 🗟 🖶 💫 🕗	🚝 Sensor IO m	onitor: KV-8000[0].GW6L_C0(L25	6)[1]	_		9	SF9		
1 🗄 🗄 🗷 🖂 📖 🖷 🕇 🕏 🔂	🖹 🕅 🖾	Sign 19-				is.	Comment 1		-
oject	Device	Current value Display		Comments		^			
	WOGE	0 DEC 16BIT		-6000[0].GW6L_C0(L256)[1]IN_100[1					
Unit configuration	WO6F	0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]IN_100[1			8	9	10
🖬 🔓 [0] KV-8000	W070	0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]IN_100[1					
EtherNet/IP R30000 D	W071	0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]IN_100[1					
	W072	0 DEC 16BIT		-6000[0].GW6L_C0(L256)[1]IN_100[1					
[1] GW6L_C0_L256	W073 W074	0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]IN_100[1 -8000[0].GW6L_C0(L256)[1]IN_100[1					
🔄 🦣 Unit configuration switchi	W074 W075	0 DEC 16BIT 0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]IN_100[1 -8000[0].GW6L_C0(L256)[1]IN_100[1					
The comment The comment The comment The comment of	W075 W076	0 DEC 16BIT 0 DEC 16BIT		-8000[0].GW6L_C0(1256)[1]IN_100[1 -8000[0].GW6L_C0(1256)[1]IN_100[1					
T Label	W076	0 DEC 16BIT		-8000[0]. GW6L_C0(1256)[1]IN_100[1 -8000[0]. GW6L_C0(1256)[1]IN_100[1					
Operation recorder setting	W077	0 DEC 16BIT		-6000[0]. GW6L_C0(1256)[1]IN_100[1					
	W078	0 DEC 16BIT		-6000[0]. GW6L_C0(1256)[1]IN_100[1					
CPU system setting	W07A	0 DEC 16BIT		-8000[0]. GW6L_C0(L256)[1]IN 100[1					
🕋 Program: GW6L	W07B	0 DEC 16BIT		-8000[0]. GW6L_C0(L256)[1]IN_100[1					
Every-scan execution	WO7C	0 DEC 16BIT		-8000[0]. GWEL_CO(L256)[1]IN 100[1					
Main	WO7D	0 DEC 16BIT		-8000[0]. GW6L_C0(L256)[1]IN 100[1					
	WO7E	0 DEC 16BIT		-8000[0]. GW6L CO(L256)[1]IN 100[1					
Initialize module	WOTE	\$0000 HEX 16BIT		-8000[0]. GW6L CO(L256)[1]IN 100[1					
- 🛅 Standby module	W080	\$0000 HEX 16BIT		-6000[0]. GW6L CO(L256)[1]OUT_150[
Fixed-period module	W081	\$0000 HEX 16BIT		-8000[0]. GW6L_CO(L256)[1]OUT_150[
Inter-unit sync module	W082	\$0000 HEX 16BIT		-6000[0]. GW6L CO(1256)[1]OUT 150[
G Function Block	W083	\$0000 HEX 16BIT	KV-	-6000[0]. GW6L CO(1256)[1]OUT 150[3]				
	W084	0 DEC 16BIT	KV-	-6000[0]. GW6L_C0(L256)[1]0UT_150[4]				
Macro	W085	0 DEC 16BIT	KV-	-8000[0]. GW6L_CO(L256)[1]OUT_150[5]				
- 🗐 Subroutine macro	W086	0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]0UT_150[
🕞 Self-hold macro	W087	0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]0UT_150[END -
Device default	W088	0 DEC 16BIT		-8000[0]. GW6L_C0(L256)[1]0UT_150[LEND .
File register setting	W089	0 DEC 16BIT		-8000[0]. GW6L_C0(L256)[1]0UT_150[-
	¥08A	0 DEC 16BIT		-6000[0].GW6L_C0(L256)[1]OUT_150[
0:Memory card	WOSB	0 DEC 16BIT		-6000[0].GW6L_C0(L256)[1]0UT_150[
- i:CPU memory	WOSC	0 DEC 16BIT		-6000[0].GW6L_C0(L256)[1]0UT_150[
📮 User document	WOSD	0 DEC 16BIT	KV-	-8000[0].GW6L_C0(L256)[1]0UT_150[13]				[ENDH
	WOSE	0 DEC 16BIT		-8000[0]. GWEL_C0(L256)[1]0UT_150[-
	WOSF	0 DEC 16BIT		-8000[0].GW6L_C0(L256)[1]0UT_150[
	W090	0 DEC 16BIT		-6000[0].GW6L_C0(L256)[1]0UT_150[
	W091	0 DEC 16BIT		-8000[0]. GW6L_C0(L256)[1]0UT_150[
	₩092	0 DEC 16BIT	KV-	-8000[0].GW6L_C0(L256)[1]OUT_150[18]	~			
	00009								

c. The downlink data of the module is shown in the monitoring table as follows, which is used to force the data to be output, and the display format can be switched as shown in the following figure.

	Program(M)	Script(S)	Convert(A) M	onitor/Sir	nulator(N)	Debug(D) Oper	ration rec	order/Rep	lay(<u>R</u>)	Tool(I)	Wi
	k 🖶 🖪 (🚍	Sensor IO r	monitor: KV-800	0[0].GW6L	_C0(L256)[1]				—		\times
.≮ ☵ ☵ ೫ ☜ !	📲 🏅 😼 🖡 📾		- Ka 📮 🔍									
roject		Device WU78	Current val	ue Di	splay fo	ormat		Land Little	Comment:	3		-
- Init configurati	-	W07C			16BIT				L256)[1]IN_			
Unit configurati	on	W07D			16BIT				L256)[1]IN			
🖬 📴 [0] KV-8000		WO7E			16BIT				L256)[1]IN			
E b EtherNet/II	R30000	W07F		0 DEC	16BIT	B	w-8000[0]	. GW6L_CO (L256)[1]IN	100[127]		
[1] GW61	C0 L256	W080	\$	0000 HEX	16BIT	B	w-6000[0]	. GW6L_CO (L256)[1]0VT	_150[0]	1	
f Unit configur	ation swit	¥081	\$	0000 HEX	16BIT				L256) [1] OVI			
Device comment		W082		0000 HEX					L256) [1] OVI			
		W083	\$	0000 HEX					L256)[1]0VI			
Label		¥084			16BIT				L256) [1] OVI			
Operation record	er setting	₩085			16BIT				L256)[1]0VI			
📲 CPU system setti	ng	¥086			16BIT				L256)[1]0VI			
Program: GW6L		W087			16BIT				L256)[1]0VI			
= Every-scan ex	cution	¥088 ¥089			16BIT 16BIT				L256) [1] OVI			
Main	ouozon	W089 W08A							L256) [1]0VI L256) [1]0VI			
	and and a second se	WOSA			16BIT 16BIT				L256)[1]001 L256)[1]001			
🔄 Initialize mo		WOSC			16BIT				L256)[1]001 L256)[1]001			
Standby module	1	WOOD			16BIT				L256)[1]001			
Fixed-period 1	nodule	WOOD			16BIT				L256)[1]001			
Inter-unit sy	nc module	WOSF			16BIT				L256)[1]0VI			
Function Block		¥090			16BIT				L256)[1]0UT			
		¥091		0 DEC	16BIT				L256)[1]0VI			
Macro	10.000	W092		0 DEC	16BIT	B	W-8000[0]	. GW6L_CO (L256)[1]OUT	_150[18]		
🔄 🛃 Subroutine ma	ro	W093		0 DEC	16BIT	B	W-8000[0]	. GW6L_CO (L256)[1]OVI	150[19]		
📑 Self-hold mac:	0	¥094		0 DEC	16BIT	B	W-6000[0]	. GW6L_CO (L256)[1]0VT	_150[20]		
Device default		¥095		0 DEC	16BIT				L256) [1] OVI			
File register se	tting	W096			16BIT				L256) [1] OVI			
	ourng	W097			16BIT				L256) [1] OVI			
0:Memory card		W098			16BIT				L256) [1] OVI			
		W099			16BIT				L256)[1]0VI			
1:CPU memory		W09A					V-6000[0]			_150[26]		
				0 DEC								
1:CPU memory		W09B		0 DEC	16BIT	B	w-6000[0]	. GW6L_CO (L256)[1]0VI			
1:CPU memory		W09B W09C		0 DEC 0 DEC	16BIT 16BIT	E	V-6000[0] V-6000[0]	. GW6L_CO() . GW6L_CO()	L256) [1] OVI L256) [1] OVI	_150[28]	1	
1:CPU memory		W09B W09C W09D		0 DEC 0 DEC 0 DEC	16BIT 16BIT 16BIT	B B B	X-8000[0] X-8000[0] X-8000[0]	. GW6L_CO() . GW6L_CO() . GW6L_CO()	L256) [1] OVI L256) [1] OVI L256) [1] OVI	_150[28] _150[29]		
1:CPU memory		W09B W09C		0 DEC 0 DEC 0 DEC 0 DEC	16BIT 16BIT	B B B B	x-6000[0] x-6000[0] x-6000[0] x-6000[0]	. GW6L_CO(. GW6L_CO(. GW6L_CO(. GW6L_CO(L256) [1] OVI L256) [1] OVI	_150[28] _150[29] _150[30]		

d. In the "current value" cell enter the value, write the value, as shown below.

ile(E) Edit(E) View(V) Program(M) Script(S) Convert(A) N	Ionitor/Simulator(N)	Debug(D) O	peration recorder/Repl	ay(<u>R</u>) Tool(<u>T</u>) W	indow(W)	Help(<u>H</u>)	
) 🤒 🖬 🔮 🖄 🗟 🖶 🖗 🗋 😮 🗐 🖭 🗊	E Sensor IO mon	itor: KV-8000[0].GW	6L_C0(L256)[1]		CA CO CO CO CO	- 023 0.2 029		×
🗶 🏣 📰 🌌 🐼 🎬 🖷 🏅 🗞 🗞 🗣 🔹		-	-					
roject 🛛 🗘 🗙								_
Unit configuration	Device	Current value	Display f		Comment			^
■ 6 [0] KV-8000	¥080		HEX 16BIT		GW6L_C0(L256)[1]0			
	W081		HEX 16BIT		GW6L_C0(L256)[1]0			
EtherNet/IP R30000 DM10000	W082		HEX 16BIT		GW6L_C0(L256)[1]0			
[1] GW6L_C0_L256	¥083		HEX 16BIT		GW6L_C0(L256)[1]0			
🔄 💭 Unit configuration switching	¥084	-	DEC 16BIT		GW6L_C0(L256)[1]0			
💾 Device comment	¥085		DEC 16BIT		GW6L_C0(L256)[1]0			
T Label	¥086	0 1	DEC 16BIT		GW6L_C0(L256)[1]0			
Operation recorder setting	W087	0 1	DEC 16BIT		GW6L_C0(L256)[1]0			
CPU system setting	¥088	0 1	DEC 16BIT		GW6L_C0(L256)[1]0			
Program: GW6L	W089	0 1	DEC 16BIT		GW6L_C0(L256)[1]0			
	ASOW	0 1	DEC 16BIT		GW6L_C0(L256)[1]0			
E Every-scan execution	WO8B	0 1	DEC 16BIT	KV-6000[0]	GW6L_C0(L256)[1]0	UT_150[11]		
🖬 📰 Main	¥08C	0	DEC 16BIT		GW6L_CO(L256)[1]0			
- 🛅 Initialize module	WOSD	0 1	DEC 16BIT		GW6L_C0(L256)[1]0			
Standby module	WOSE	0 1	DEC 16BIT	KV-6000[0]	GW6L_CO(L256)[1]0	UT_150[14]		
Fixed-period module	WOSF	0 1	DEC 16BIT	KV-6000[0]	GW6L CO(L256)[1]0	UT_150[15]		
Inter-unit sync module	W090	0	DEC 16BIT	KV-8000[0]	GW6L_CO(L256)[1]0	UT_150[16]		
- Function Block	W091	0	DEC 16BIT	KV-8000[0]	GW6L_C0(L256)[1]0	UT_150[17]		
	¥092	0	DEC 16BIT	KV-8000[0]	GW6L CO(L256)[1]0	UT 150[18]		
a 🗐 Macro	¥093	0	DEC 16BIT	KV-8000[0]	GW6L CO(L256)[1]0	UT 150[19]		
- 🛃 Subroutine macro	¥094	0	DEC 16BIT	KV-8000[0]	GW6L CO(L256)[1]0	UT 150[20]		
📴 Self-hold macro	¥095	0	DEC 16BIT	KV-6000[0]	GW6L CO(L256)[1]0	UT 150[21]		
Device default	¥096	0	DEC 16BIT	KV-6000[0]	GW6L CO(L256)[1]0	UT 150[22]		
👘 File register setting	¥097		DEC 16BIT		GW6L_CO(L256)[1]0			
0:Memory card	¥098		DEC 16BIT		GW6L CO(L256)[1]0			
1:CPU memory	¥099	0	DEC 16BIT		GW6L CO(L256)[1]0			
J User document	W09A		DEC 16BIT		GW6L CO(L256)[1]0			
User document	W09B		DEC 16BIT		GW6L CO(L256)[1]0			
	W09C		DEC 16BIT		GW6L CO(L256)[1]0			
	WO9D		DEC 16BIT		GW6L CO(L256)[1]0			
	WO9E		DEC 16BIT		GW6L CO(L256)[1]0			
	1002		DEC IODII		0005_00(1200)[1]0	01_100[00]		-
							END -	
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	000000							_
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7.2.2.4 data interaction

a. After establishing the communication connection, the value is written in the downlink data of the KV STUDIO software, and the output data is shown below.

File(F) Edit(E) View(V) Program(M) Script(<u>S</u>) Conve	rt(A) Monitor/Simulator(N) Del	bug(<u>D</u>) Operation recorder/Replay(<u>R</u>) Tool	(I) Win
	Ethernet		부 다 다 다 다 다 🔛 💷 🔁 📾 🔊	SE7 F8 S
				1.
				Com
roject	Д 🗙 Main	×		
🛛 👬 Unit configuration		1 1 3 1		
🚍 🔓 [0] KV-8000	🔚 Sensor IO monit	or: KV-8000[0].GW6L_C0(L256)[1]	- 0	×
🛓 🔓 EtherNet/IP R30000		-		
6 [1] GW6L C0 L256			-	
Tunit configuration swite		ent value Display forma		^
The Device comment	W080 W081	\$ABCD HEX 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[0] KV-8000[0].GW6L_C0(L256)[1]0UT_150[1]	
- Label	W081 W082	\$FFFF HEX 16BIT \$0000 HEX 16BIT	KV-8000[0].GW6L_C0(L256)[1]00T_150[1] KV-8000[0].GW6L_C0(L256)[1]00T_150[2]	
The second se	W082	\$0000 HEX 16BIT	KV-8000[0]. GW6L_C0(1256)[1]001_150[2] KV-8000[0]. GW6L_C0(1256)[1]00T_150[3]	
- 🗊 Operation recorder setting	¥084	0 DEC 16BIT	KV-8000[0]. GW6L_C0(L256)[1]001_150[3] KV-8000[0]. GW6L_C0(L256)[1]00T_150[4]	
CPU system setting	¥085	0 DEC 16BIT	KV-8000[0]. GW6L_C0(L256)[1]001_150[4] KV-8000[0]. GW6L_C0(L256)[1]007_150[5]	
🖬 🚑 Program: GW6L	¥086	0 DEC 16BIT	KV-8000[0]. GW6L_C0(L256)[1]00T_150[6]	
Every-scan execution	¥087	0 DEC 16BIT	KV-8000[0]. GW6L. CO(L256)[1]0UT_150[7]	
Main	W088	0 DEC 16BIT	KV-8000[0]. GW6L C0(L256)[1]0UT 150[8]	
	W089	0 DEC 16BIT	KV-6000[0]. GW6L CO(L256)[1]OUT 150[9]	
- Initialize module	WOSA	0 DEC 16BIT	KV-6000[0]. GW6L_C0(L256)[1]0UT_150[10]	
— Standby module	W08B	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[11]	
Fixed-period module	WOSC	0 DEC 16BIT	KV-8000[0]. GW6L_C0(L256)[1]0UT_150[12]	
Inter-unit sync module	WOSD	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[13]	
- Function Block	WOSE	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[14]	
	WOSF	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[15]	
🖬 🚍 Macro	W090	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[16]	
- 🛃 Subroutine macro	W091	0 DEC 16BIT	KV-6000[0].GW6L_C0(L256)[1]0UT_150[17]	
Self-hold macro	W092	0 DEC 16BIT	KV-8000[0]. GW6L_C0(L256)[1]0UT_150[18]	
Device default	¥093	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[19]	
File register setting	W094	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[20]	
the second se	W095	0 DEC 16BIT	KV-6000[0].GW6L_C0(L256)[1]0UT_150[21]	
0:Memory card	W096 W097	0 DEC 16BIT	KV-8000[0].GW6L_C0(L256)[1]0UT_150[22] KV-8000[0].GW6L_C0(L256)[1]0UT_150[23]	
1:CPU memory	W097 W098	0 DEC 16BIT 0 DEC 16BIT	KV-8000[0].GW6L_C0(1256)[1]001_150[23] KV-8000[0].GW6L_C0(1256)[1]00T_150[24]	
🖬 🔷 User document	W099	0 DEC 16BIT	KV-8000[0]. GW6L_C0(L256)[1]001_150[24] KV-8000[0]. GW6L_C0(L256)[1]007_150[25]	
	W09A	0 DEC 16BIT	KV-8000[0]. GW6L_C0(L256)[1]00T_150[26]	
	W09B	0 DEC 16BIT	KV-6000[0]. GW6L_C0(L256)[1]0UT_150[27]	
	WOOD	0 DEC 16BIT	KV-8000[0], GW6L C0(L256)[1]0UT 150[28]	
	WO9D	0 DEC 16BIT	KV-8000[0]. GW6L_CO(L256)[1]0UT_150[29]	
	WO9E	0 DEC 16BIT	KV-8000[0]. GW6L CO(L256)[1]0UT 150[30]	
	00007			
	000000			
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b. In the monitoring table of the TIA Portal V17 software, check the uplink data to confirm that the data is entered into the gateway module, as shown in the following figure, the data has been passed in.

i	Name	Address	Display format	Monitor value	Modify value	9	Comment	
1		%IW68	Hex	16#CDAB				^
2		%IW70	Hex	16#FFFF				-
3		%IW72	Hex	16#0000				_
4		%IW74	Hex	16#0000				
5		%IW76	Hex	16#0000				
5		%IW78	Hex	16#0000				
7		%IW80	Hex	16#0000				
3		%IW82	Hex	16#0000				
9		%IW84	Hex	16#0000				
10		%IW86	Hex	16#0000				
11		%IW88	Hex	16#0000				
12		%IW90	Hex	16#0000				
13		%IW92	Hex	16#0000				
14		%IW94	Hex	16#0000				
15		%IW96	Hex	16#0000				
16		%IW98	Hex	16#0000				
17		%IW100	Hex	16#0000				
18		%IW102	Hex	16#0000				
19		%IW104	Hex	16#0000				
20		%IW106	Hex	16#0000				
21		%IW108	Hex	16#0000				
22		%IW110	Hex	16#0000				
23		%IW112	Hex	16#0000				~

c. At this point, the last status bit byte of the TIA Portal V17 software uplink data is 16#01 indicating that there is data interaction between the gateways, as shown in the following figure.

i Name	Address	Display format	Monitor value	Modify value	4	Comment	
	%IW280	Hex	16#0000				
	%IW282	Hex	16#0000				
	%IW284	Hex	16#0000				
	%IW286	Hex	16#0000				
	%IW288	Hex	16#0000				
	%IW290	Hex	16#0000				
	%IW292	Hex	16#0000				
	%IW294	Hex	16#0000				
	%IW296	Hex	16#0000				
	%IW298	Hex	16#0000				
	%IW300	Hex	16#0000				
	%IW302	Hex	16#0000				
	%IW304	Hex	16#0000				
	%IW306	Hex	16#0000				
	%IW308	Hex	16#0000				
	%IW310	Hex	16#0000				
	%IW312	Hex	16#0000				
	%IW314	Hex	16#0000				
	%IW316	Hex	16#0000				
	%IW318	Hex	16#0000				
	%IW320	Hex	16#0000				
	%IW322	Hex	16#0100				
	%QW2	Hex	16#CDAB				

d. In the monitoring table of the TIA Portal V17 software, write the downlink data as shown below.

i	Name	Address	Display format	Monitor value	Modify value	9	Comment	
1		%QW2	Hex	16#FFFF	16#FFFF		1	^
1		%QW4	Hex	16#FFFF	16#FFFF		1	
1		%QW6	Hex	16#0000				
1		%QW8	Hex	16#0000				
1		%QW10	Hex	16#0000				
1		%QW12	Hex	16#0000				
1		%QW14	Hex	16#0000				
1		%QW16	Hex	16#0000				
1		%QW18	Hex	16#0000				
1		%QW20	Hex	16#0000				
1		%QW22	Hex	16#0000				
1		%QW24	Hex	16#0000				=
1		%QW26	Hex	16#0000				
1		%QW28	Hex	16#0000				
1		%QW30	Hex	16#0000				
1		%QW32	Hex	16#0000				
1		%QW34	Hex	16#0000				
1		%QW36	Hex	16#0000				
1		%QW38	Hex	16#0000				
1		%QW40	Hex	16#0000				
1		%QW42	Hex	16#0000				
1		%QW44	Hex	16#0000				
1		%QW46	Hex	16#0000				~

e. Check the uplink data in the KV STUDIO software to confirm that the data has been input to the gateway module, as shown in the following figure, the data has been transmitted.

File(E)	Edit(E)	View(V)	Program(M) Script(S)	Convert(A) Monitor,	/Simu	lator(N)	Debug(D)	Operation	n recorder/Rep	olay(R)	Tool(I)	Wind	ow(
1		P 18 8	k 🖶 🖪 🕝	Ether	net	• E.		-4 6	🖸 🖬 🖷		E F5 SF5	F4 SF4	F7 557	F.8 SF8	FS
1 =	8 = 8 2	607 IIII 🔤	1 🕇 🕏 P			*** * **				- etc 1	10.00			-	
	0			E Sensor IO	monitor: K	V-8000[0].G	W6L	CO(L256)	[1]				-		\times
roject			_	🔁 🐺 🆽 I											
		figuratio	n	Device	1 101 101	nt value	_	Display	format		Com	nents			-
	[0] B				00			16BIT	TOTHAC	xv-e000[0]	. GW6L CO(1256)		00[0]		-1
		erNet/IP	R30000		01			16BIT			. GW6L CO (1256)				
	6	[1] GW6L_	C0_L256		02			16BIT			GW6L CO(1256)				
	Unit c	configura	tion swit(W	03	\$0000	HEX	16BIT		KV-8000[0]	.GW6L CO(1256)	[1]IN 1	00[3]		
De De	evice co	omment		W	04	\$0000	HEX	16BIT		KV-8000[0]	.GW6L_C0(L256)	[1]IN_1	00[4]		
In La	abel			w	05	\$0000	HEX	16BIT			.GW6L_C0(L256)				
The second second		n recorde	r setting	W	06	\$0000	HEX	16BIT			.GW6L_C0(1256)				
		em settin			07			16BIT			.GW6L_C0(1256)				
	rogram:		.g		08			16BIT			. GW6L_C0(L256)				
					09			16BIT			. GW6L_C0(L256)				
		-scan exe	cution		DA			16BIT			.GW6L_C0(L256)				
	Mai 🏙				DB			16BIT	•		. GW6L_C0(L256)				
	Initia	alize mod	ule		DC DD			16BIT 16BIT			. GW6L_C0(L256) . GW6L_C0(L256)				
	Standb	by module	8		DE		_	16BIT			. GW6L_C0(L256) . GW6L_C0(L256)				
	Fixed-	-period m	odule		OF			16BIT			. GW6L_C0(1256) . GW6L_C0(1256)				
	Inter-	-unit syn	c module	¥0				16BIT			. GW6L_C0(1256)				
and the second second	unction			80				16BIT			. GW6L_C0(L256)				
M		DICCK		WO		-		16BIT			. GW6L CO (L256)				
				80		0	DEC	16BIT			.GW6L CO(1256)				
	-	itine mac		WO	14	0	DEC	16BIT			.GW6L CO(L256)				
		nold macr	•	WO	15	0	DEC	16BIT			.GW6L_C0(L256)				
	evice de			80	16	0	DEC	16BIT			.GW6L_C0(L256)				
(👘 Ei	ile regi	ister set	ting	WO	17	0	DEC	16BIT		KV-8000[0]	.GW6L_C0(L256)	[1]IN_1	00[23]		
-	0:Memo	ory card		WO	18	0	DEC	16BIT			.GW6L_C0(L256)				
	1:CPU	memory		80				16BIT			.GW6L_C0(L256)				
- U:	ser docu	ument		80				16BIT			.GW6L_C0(L256)				
-				WO				16BIT			.GW6L_C0(L256)				
				WO				16BIT			. GW6L_C0 (L256)				
				WO		-		16BIT			. GW6L_C0 (1256)				
				WO				16BIT			. GW6L_CO (1256)				
				WO		U	DEC	16BIT		KA-8000[0]	. GW6L_CO(L256)	LIJIN_1	00[31]		
													-		
					00007										
					000000										

f. At this time, the last status bit byte of the KV STUDIO software uplink data is 16#01 indicating that there is data interaction between the gateways, as shown below.

File(F) Edit	(E) View(V)	Program(M)	Script(S)	Convert(<u>A</u>) Monitor	/Simulator(<u>N</u>)	Debug(D)	Operation	recorder/Rep	ay(<u>R</u>) Tool(<u>T</u>)	Window(
🗅 📂 🔒		k 🖶 🖪 🕜	Ethern	et 🔹	• • • • •	🔞 🖬 🖷	💷 🎰 🖭	F5 SF5	F4 SF4 F7 SF7	F8 SF8 F9
/ == 8=	😢 🐼 🌆 🛛	• <u>*</u> 5 B			н 🔻 нн >	- 0.1	r th pan :	Monitor		Comments
			_				- O (-	monitor		comments
roject			ДХ Ма	in X						
	configuratio	n	E Consor IO r	nonitor: KV-8000[0].		\[1]				
0] 👌 🖪] KV-8000		= sensor io i		SWOL_CO(L230					- ^
= 0	EtherNet/IP		🔁 🕵 🆽 🖽							
	💰 [1] GW6L	_C0_L256	Device	Current value	Display	format		Comm	ents	
👘 Un	it configura	tion swit	W06/		DEC 16BIT			GW6L CO(L256)	LOOFTOOT	
- Devic	e comment		W063 W063		DEC 16BIT			GW6L_C0(1256)		
Tabel			W060		DEC 16BIT			GW6L_C0(L256)		
Opera	tion recorde	r setting	W060		DEC 16BIT			GW6L CO(1256)		
-	vstem settir		W061	1	DEC 16BIT			GW6L CO(L256)		
		*9	W061		DEC 16BIT			GW6L CO(L256)		
🛔 🚔 Progr			W070		DEC 16BIT			GW6L_C0(L256)		
	ery-scan exe	cution	W071		DEC 16BIT			GW6L CO(L256)		
🖬 🖬	Main		W072		DEC 16BIT			GW6L CO(L256)		
🦳 In	itialize mod	ule	W073		DEC 16BIT			GW6L CO(L256)		
- St	andby module		W074		DEC 16BIT			GW6L_C0(L256)		
Fi:	xed-period m	odule	WO75	; (DEC 16BIT			GW6L_C0(L256)		
	ter-unit syn	and a state of the	W076		DEC 16BIT		KV-8000[0]	GW6L_C0(L256)	1]IN_100[118]	
	ion Block	o modure	W077		DEC 16BIT			GW6L_C0(L256)		
			W078		DEC 16BIT		KV-8000[0]	GW6L_C0(L256)	1]IN_100[120]	
Macro			W079) (DEC 16BIT		KV-8000[0]	GW6L_C0(L256)	1]IN_100[121]	
	broutine mac		W07/		DEC 16BIT			GW6L_C0(L256)		
🔄 🔂 Se	lf-hold macr	0	W071		DEC 16BIT			GW6L_C0(L256)		
Devic	e default		W070		DEC 16BIT			GW6L_C0(L256)		
File	register set	ting	W07I		DEC 16BIT			GW6L_C0(L256)		
	Memory card		WO71		DEC 16BIT			GW6L_C0(L256)		
	CPU memory		WO71		HEX 16BIT			GW6L_C0(L256)		
and the second s			W080		HEX 16BIT			GW6L_C0(1256)		
1 🤷 User	document		W081		HEX 16BIT			GW6L_C0(L256)		
			W082		HEX 16BIT			GW6L_C0(L256)		
			W083		HEX 16BIT			GW6L_C0(L256)		
			W084		DEC 16BIT			GW6L_C0(L256)		
			WOSE		DEC 16BIT			GW6L_C0(L256)		
			W086		DEC 16BIT			GW6L_C0(L256)		
			W087 W085		DEC 16BIT			GW6L_C0(L256)		
					LINE TERTT		KW-BAUMITTI	GART THUSSEL	1 mm 16mg1	
				00007						
onitor Libr	ary Project									
	an allowe				-1	×	×	4. A		0.04ms 🎞