User Manual of KPS/KGW Series Products

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1 Product Introduction

The product name prefix of KPS/KGW indicates the product category. KPS series includes industrial serial server products and KGW series includes industrial intelligent gateway products. This document applies to the following series of products:

KPS/KGW310XA&320XA series; KPS/KGW3224A series; KGW3204A 4G series;

1.1 Brief

1.1.1KPS/KGW310X&320XA Series

KPS/KGW 310XA-320XA series is an industrial gateway product based on Linux system architecture and ARM9 processor, which is mainly used to connect serial devices to Ethernet, read serial device data through the network and remotely control serial devices.

This series can be divided into RS-232 and RS-485 serial communication modes. RS-485 provides 120Ω switchable terminal resistance, which is convenient to reduce signal reflection and can effectively improve the stability and reliability of RS-485 serial communication.

Series products include the following models:

\triangleright	KPS3101A-E-1T1D-232-L17	KPS3101A-E-1T1D-485-L17
\triangleright	KPS3102A-E-1T2D-232-L17	KPS3102A-E-1T2D-485-L17
	KPS3204A-E-2T4D-232-L17	KPS3204A-E-2T4D-485-L17
\triangleright	KPS3208A-E-2T8D-232-L17	KPS3208A-E-2T8D-485-L17
\triangleright	KGW3101A-E-1T1D-232-L17	KGW3101A-E-1T1D-485-L17
	KGW3102A-E-1T2D-232-L17	KGW3102A-E-1T2D-485-L17
\triangleright	KGW3204A-E-2T4D-232-L17	KGW3204A-E-2T4D-485-L17
\triangleright	KGW3208A-E-2T8D-232-L17	KGW3208A-E-2T8D-485-L17



Figure 1: KPS/KGW 3102A, KPS/KGW3204A and KPS/KGW3208A RS-485 Physical Drawing 1.1.2KPS/KGW3224A Series

KPS3224A/KGW3224A series is an industrial-grade high-performance 24-port rack product based on Linux system architecture and 4-core A53 processor, which is mainly used for the conversion of communication protocols. Through data collection, storage and control, online real-time monitoring and remote control can be realized, and it can be used as the terminal equipment of industrial Internet platform. The equipment can meet the needs of communication protocol conversion in different industrial applications, and is suitable for smart cities, smart transportation, smart power and other fields.

It can be set to three serial communication modes: RS-232, RS-485 and RS422. The RS-485 serial interface of this series of equipment provides a switchable terminal resistance of 120Ω , which is convenient to reduce signal reflection and can effectively improve the stability and reliability of RS-485 serial communication.

Series products include the following models:

- ► KPS3224A-2T24D-HV
- ► KPS3224A-2T24D-HV-HV
- ➤ KGW3224A-2T24D-HV
- ➤ KGW3224A-2T24D-HV-HV



Figure 2: KPS 3224a/KGW 3224a Physical Drawing

1.1.3KGW3204A-4G Series

KGW3204A-4G wireless gateway is an industrial-grade 4G wireless gateway based on Linux system architecture, which is mainly used for the conversion of communication protocols. Through data collection, storage and control, it can realize online real-time monitoring and remote control, and can be used as the terminal equipment of industrial Internet platform.

4G wireless gateway can support RS-232, RS-485 and RS-422 serial communication modes. Two Ethernet interfaces and one 4G are provided to meet the requirements of wired and wireless communication. Providing a switchable terminal resistance of 120Ω is convenient to reduce signal reflection and can effectively improve the stability and reliability of serial communication.

Series products include the following models:

KGW3204A-2T4D-232/485-4G-L17



Figure 3: KGW 3204a-2t4d-232/485-4g-L17 Physical Drawing

1.2 Product Features

Data transmission:	Support Socket operation mode, including TCP Server, TCP Client	
	and UDP.	
Transmission protocol:	KPS series supports transparent transmission and Modbus RTU data	
	transmission protocol;	
	KGW series additionally supports Modbus, OPC UA, DNP,	
	IEC101, IEC103, IEC104, IEC61850, DL/T645-1997,	
	DL/T645-2007 and Siemens S7 data transmission protocols, and	
	supports advanced application-script calculation.	
Routing:	Support static routing.	
Security function:	Support SSH, MAC address binding, user classification,	
	AES\DES\3DES data encryption.	
Device management:	Support Web management (HTTP/HTTPS)	

	Support KyCMT integrated debugging management tools		
	(equipment search, IP address configuration and other functions)		
	Support KyPMT integrated configuration tool (EDPS protocol		
	engineering configuration)		
	Support ICMP control message		
	Support SNMP v2c		
	Support SNMP Trap		
	Support ARP, DNS, DHCP Client.		
Equipment maintenance:	Support upgrading through WEB software.		
	Support FTP, TFTP and Syslog.		
Support SMTP mail alarm			
Support device alarm indicator light			
	Support breakpoint reconnection		
	Support telnet management		
Clock characteristics:	Support NTPv3 Client.		

2 Specification Parameters and Pin Definition

2.1 Power Source Pin

				Anti-reverse
Products	Input voltage	Access terminal	Power consumption	connection of
				power supply
			KPS3101A: 1.0W	
			KGW3101A: 2.0W	
			KPS3102A: 1.0W	
KPS/KGW3x0xA	24V DC	2-core plug-in	KGW3102A: 2.0W	
series	(12-48V DC)	type	KPS3204A: 1.5W	V
			KGW3204A: 2.0W	
			KPS3208A: 1.6W	
			KGW3208A: 3.0W	
KPS/KGW3224A	220V AC	3-core plug-in	15.0w	
series	220 V AC	type	13.0w	Ň
KGW3204A 4G series	24V DC	2-core plug-in	8.0w	V
KUW 5204A 4U series	(12-48V DC)	type	0.0w	Ň

Table 1 Power Information

KPS/KGW3x0xA series and KGW3204A-4G series use a 2-core plug-in terminal to connect to the power supply. The equipment has anti-reverse connection protection, and the line sequence is subject to the mask screen printing instructions.



Power	Pin	Description
PWR	V+	Power supply
	V-	Power supply

Table 2 Definition of Power Interface

KPS/KGW3224A series rack serial server uses two 3-core plug-in terminals to connect to the power supply.

PWR1	Power
*/ -/N +	PWR

Power Pin		Description	
	-/N	Zero curve	
PWR	+/L	Live wire	
	GND	Earth wire	

2.2 Serial Interface

2.2.1 RS-485 terminal resistance

Table 4 Resistance Information

Products	120Ω terminal resistance setting mode
KPS/KGW3x0xA series	DIP switch
KPS/KGW3224A series	WEB page configuration
KGW3204A 4G series	DIP switch

When using RS-485 transmission mode in complex industrial environment, it may be necessary to increase the terminal resistance to reduce the signal interference caused by serial signal reflection;

DIP switch is set with 120Ω terminal resistance: ID n of DIP switch corresponds to serial port Sn respectively. When dip switch No. N is turned ON, the terminal resistance of Sn serial port is enabled; When dip switch No. N is turned OFF, the terminal resistance of Sn serial port is not enabled; The termination resistor is not enabled by default.

WEB page setting 120Ω terminal resistance: When the serial terminal resistance of the serial server-additional configuration page is set to ON, the terminal resistance of the serial port is enabled;

When set to OFF, the terminal resistance of the serial port is not enabled; The device does not enable the termination resistor by default.

2.2.2 Serial interface pin definition

2.2.2.1 KPS/KGW310XA&320XA

According to different product models, serial ports can be divided into RS-232 type and RS-485 type, and each type of gateway only supports one communication mode of serial interface.



A2

B2

GND

A1

B1

GND

Pin	Serial	RS-232	RS-485
	number		
GND		GND	GND
B1	S1	RxD	Data-(B)
A1		TxD	Data+(A)

Table 5 Definition of KPS/KGW 3101a Terminal

Table 6 Definition of KPS/KGW 3102a Terminal

Pin	Serial number	RS-232	RS-485
GND		GND	GND
B1	S 1	RxD	Data-(B)
A1		TxD	Data+(A)
GND		GND	GND
B2	S2	RxD	Data-(B)
A2		TxD	Data+(A)

Table 7 Definition of KPS/KGW 3204a Terminal

Pin	Serial	RS-232	RS-485
	number		
GND		GND	GND
B1	S1	RxD	Data-(B)
A1		TxD	Data+(A)
B3		RxD	Data-(B)
A3	S3	TxD	Data+(A)
GND		GND	GND
GND	S2	GND	GND



B2		RxD	Data-(B)
A2		TxD	Data+(A)
B4		RxD	Data-(B)
A4	S4	TxD	Data+(A)
GND		GND	GND

Table 8 Definition of KPS/KGW 3208a Terminal

Pin	Serial	RS-232	RS-485
	number		
GND		GND	GND
B1	S1	RxD	Data-(B)
A1		TxD	Data+(A)
B3		RxD	Data-(B)
A3	S3	TxD	Data+(A)
GND		GND	GND
GND		GND	GND
B5	S5	RxD	Data-(B)
A5		TxD	Data+(A)
B7		RxD	Data-(B)
A7	S7	TxD	Data+(A)
GND		GND	GND
GND		GND	GND
B2	S2	RxD	Data-(B)
A2		TxD	Data+(A)
B4		RxD	Data-(B)
A4	S4	TxD	Data+(A)
GND		GND	GND
GND		GND	GND
B6	S6	RxD	Data-(B)
A6		TxD	Data+(A)
B8		RxD	Data-(B)
A8	S 8	TxD	Data+(A)
GND		GND	GND



2.2.2.2 KPS/KGW3224A

The serial ports of this series can be divided into RS-232 type, RS-485 type and RS-422 type, and each serial port only supports one communication mode of serial interface. According to the additional configuration of page serial port-serial port mode configuration item, RS-485 terminal can be configured as RS-422 terminal.



Pin	Serial	RS-232	RS422	RS-485
	number			
GND		-	GND	GND
B1	S 1	-	TxD1-	B1
A1		-	TxD1+	A1
GND		-	GND	GND
B3	S3	-	TxD2-	B3
A3		-	TxD2+	A3
GND		-	GND	GND
B5	S5	-	TxD3-	В5
A5		-	TxD3+	A5
GND		-	GND	GND
B7	S7	-	TxD4-	B7
A7		-	TxD4+	A7
GND		-	GND	GND
B2	S2	-	RxD1-	B2
A2		-	RxD1+	A2
GND	S4	-	GND	GND
B4	т	-	RxD2-	B4

Table 9 Definition of KPS 3224a/KGW 3224a RS-485 Terminal

A4		_	RxD2+	A4
GND			GND	GND
B6	S6		RxD3-	B6
A6			RxD3+	A6
GND			GND	GND
B8	S 8	_	RxD4-	B8
A8			RxD4+	A8
GND		-	GND	GND
B9	S9		TxD5-	B9
A9		-	TxD5+	A9
GND		-	GND	GND
B11	S11	-	TxD6-	B11
A11		-	TxD6+	A11
GND		-	GND	GND
B13	S13	-	TxD7-	B13
A13		_	TxD7+	A13
GND		-	GND	GND
B15	S15	-	TxD8-	B15
A15		-	TxD8+	A15
GND		-	GND	GND
B10	S10	-	RxD5-	B10
A10		-	RxD5+	A10
GND		-	GND	GND
B12	S12	-	RxD6-	B12
A12		-	RxD6+	A12
GND		-	GND	GND
B14	S14	-	RxD7-	B14
A14		-	RxD7+	A14
GND		-	GND	GND
B16	S16	-	RxD8-	B16
A16		-	RxD8+	A16

Table 10 Definition of KPS 3224a/KGW 3224a RS-232 Terminal

Pin	Serial	RS-232	RS422	RS-485
	number			
GND		GND	-	-
RX1	S1	Rx1	-	-
TX1		Tx1	-	-
GND		GND	-	-
RX3	S3	Rx3	-	-
TX3		Tx3	-	-
GND		GND	-	-
RX5	S5	Rx5	-	-
TX5		Tx5	-	-
GND		GND	-	-
RX7	S7	Rx7	-	-
TX7		Tx7	-	-
GND		GND	-	-
RX2	S2	Rx2	-	-
TX2		Tx2	-	-
GND		GND	-	-
RX4	S4	Rx4	-	-
TX4		Tx4	-	-
GND		GND	-	-
RX6	S6	Rx6	-	-
TX6		Tx6	-	-
GND		GND	-	-
RX8	S8	Rx8	-	-
TX8		Tx8	-	-

2.2.2.3 KGW3204A-2T4D-232/485-4G-L17

The serial ports of this series can be divided into RS-232, RS-485 and RS-422, and each serial port only supports one of the communication modes of serial interfaces. According to the settings of serial port server-serial interface, RS-485 terminal can be configured as RS-422 terminal.

Table 11 Definition of KGW3204a-2t4d-232/485-4g-L17 Terminal

	the second s					
GND A3	GND A4	Pin	Serial numbe	RS-485	RS-232	RS-422
B3	- B4	GND		GND	-	-
A1	• A2	B1	S1	Data-(B)	-	-
B1	• B2	A1		Data+(A)	-	-
	GND	B3		Data-(B)	RxD	TxD-
		A3	S3	Data+(A)	TxD	TxD+
		GND		GND	GND	GND
		GND		GND	-	-
		B2	S2	Data-(B)	-	_
		A2		Data+(A)	-	-
		B4		Data-(B)	RxD	RxD-
2.3 Network P	ort	A4	S4	Data+(A)	TxD	RxD+
	Table	GND		GND	GND	GND
Network Interface I	nformation Products			Network inter	face	
	Tioducts					
				KPS/KGW3102		
	KPS/KGW3x0x	A series		10/100Mbp	os	
			KPS/KGW320XA: 2 10/100Mbps			
	KPS/KGW3224A series KGW3204A 4G series			2 x 10/100M	bps	
				2 x 10/100M	bps	
When working	ng normally, you	can dir	ectly co	nnect the equip	ment to the r	network by us

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When working normally, you can directly connect the equipment to the network by using the network cable. When initialization and fault detection are needed, it can be directly connected to the PC through the network cable. When the equipment is running, the network port indicator lights up, so it can be judged whether it has been connected to the network and the rate of access to the network.

Users can change the IP address of the network port, but the MAC address cannot be changed.

If you want to connect multiple devices to the network side, the external network device must keep the same network segment as the network port of the device, and there is no IP and MAC address conflict.

The port pins are defined as follows:

Table 13 Definition of Network Ports



Pin	MDI-X signal	MDI signal
1	Rx+	Tx+
2	Rx-	Tx-
3	Tx+	Rx+
6	Tx-	Rx-
4-5	to be defined	to be defined
7-8	to be defined	to be defined

2.4 Light emitting diode

Table 14 LED I	Indicators
----------------	------------

LED Indicator light	Color	Description
		Flashing: the Reset button is pressed for more than 3 seconds.
Reset	Green	On: Press the Reset button for less than 3 seconds.
		Off: the Reset button is not pressed.
		Always on: the input power supply is connected normally and the
Power	Green	equipment is running normally.
		Off: the input power supply is not connected or abnormal.
PWR1	Green	On: power on
	Green	Off: No electricity.
PWR2	Green	On: power on
F WKZ		Off: No electricity.
	Green	Always on: the serial server is starting.
		Flash: The frequency is about once every second, and the system
		is running normally.
Run		Flash (no Reset indicator):
		When the reset key is pressed (for 3-10 seconds), the system will
		return to the factory settings.
		Off: the main state is abnormal or not powered on.
		On: the port has established a valid network connection.
4G	Green	Flash: There is network activity on the port.
		Off: the port has not established a valid network connection.
Alarm	Green	Flash: The frequency is about 2 times per second, and the system

		crashes or runs abnormally.
		Off: the system is normal
		Always on: KGW series non-agreement project
		KPS serial port is not started.
		On: the port has established a valid network connection.
Link/ACT	Green	Flash: There is network activity on the port.
		Off: the port has not established a valid network connection.
Speed	Green	On: 100M working state (i.e. 100Base-TX).
speed		Off: 10M working state (i.e. 10Base-TX)
RJ45	Green	On: the port has established a valid network connection.
(Link/ACT)		Flash: There is network activity on the port.
		Off: the port has not established a valid network connection.
RJ45	Yellow	On: 100M working state (i.e. 100Base-TX).
(10/100M)		Off: 10M working state (i.e. 10Base-TX)
Tx-n	Green	Flash: serial port n has data signal to send.
1 ^ 11		Off: serial port n has no data transmission.
Rx-n	Green	Flash: serial port n has data signal reception.
KX-11		Off: serial port n has no data transmission.

Note: The value of n in the above table is serial number of serial port, such as Tx1 for serial port 1.



Figure 5 Line Diagram of KPS/kg w3x0xa Series Indicator Panel (taking KPS3208A as an example)



Note: KPS/KGW3224A series equipment supports configuring RS485 serial port in RS422 mode. When the RS-422 serial port N is enabled, the RX 2n indicator will always be on, indicating that the RS-422 serial port N has been turned on. At this time, RX/TX(2n-1) is the serial port indicator of RS-422 port n.



Figure 7 KGW3204A-4G Series Indicator Panel Line Diagram

2.5 Console Interface

Note: Console interface is applicable to KPS/KGW3224A.

Table 15 Definition of Console Port

Pin	MDI-X signal	MDI signal
2	Tx	Тх
3	Rx	Rx
5	GND	GND
1	to be defined	to be defined
4	to be defined	to be defined
6-8	to be defined	to be defined

2.64G Module

Note: 4G module is suitable for KGW3204A-4G. The domestic version uses EC200A-CN module, and the global version uses EG25-G module.

2.6.1 EC200A-CN Mini PCle

Table 16 RF Parameters of EC 200a-CN Mini PCLE

Network standard	Frequency band	Max downlink	Max uplink
LTE-FDD	B1/ B3/ B5/ B8	150	50
LTE-TDD	B34/ B38/ B39/B40/ B41	130	30
WCDMA	B1/B5/ B8	384	384

Table 17 Emission Power of EC 200a-CN Mini PCLE

Network standard	Maximum power value

EGSM900	33dBm±2dB
DCS1800	30dBm±2dB
WCDMA	24dBm+1/-3db
LTE-FDD	23dBm±2dB
LTE-TDD	23dBm±2dB

2.6.2 EG25-G Mini PCIe

Table 18 RF Parameters of EG25-G Mini PCLE

Network standard	Frequency band	Max downlink	Max uplink
LTE-FDD	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/	150 50	
	B13/ B18/ B19/ B20/ B25/ B26/ B28		20
LTE-TDD	B38/ B39/B40/ B41	130	30
WCDMA	B1/B2/ B4/ B5/ B6/ B8/ B19	384	384
GSM	B2/B3/B5/B8	296	236.8
0.514		107	85.6

Table 19 Emission Power of EC 200a-CN Mini PCLE

Network standard	Maximum power value
EGSM900	33dBm±2dB
DCS1800	30dBm±2dB
WCDMA	24dBm+1/-3db
LTE-FDD	23dBm±2dB
LTE-TDD	23dBm±2dB

3 Hardware Characteristics

3.1 Network Interface

Products	KPS/KGW3x0xA series	KPS/KGW3224A series	KGW3204A 4G series
Number of	one KPS/KGW310XA		
network	and two	2	2
interfaces	KPS/KGW320XA.		
Rate	10/100Mbps, adaptive	10/100Mbps, adaptive	10/100Mbps, adaptive
Connector	RJ45	RJ45	RJ45
4G	None	None	1 road
ESD	Air 8 kV, contact 6 kV	Air 8 kV, contact 6 kV	Air 8 kV, contact 6 kV

Table 20 Network Interface Parameters

protection	electrostatic protection	electrostatic protection	electrostatic protection
Isolation	Built-in 1.5KV	Built-in 1.5KV	Built-in 1.5KV
protection	Dunt-in 1.5KV		

Note: it is recommended to use shielded wire for network interface wiring to improve anti-interference ability.

3.2 Serial Interface

Table 21 Serial Interface Parameters				
product	KPS/KGW3x0xA series	KPS/KGW3224A series	KGW3204A 4G series	
Number of	KPS/KGW 3101a: 1			
serial	KPS/KGW 3202a: 2	24	4	
interfaces	KPS/KGW 3204a: 4			
	KPS/KGW 3208a: 8.			
	RS-232/RS-485 product	8 RS-232 models and 16	2 RS485, 2	
Serial port type	models are available.	RS-485 models (8	RS232/RS485 or 1	
Serial port type		RS-422 models can be	RS422.	
		configured).		
Connector	Terminal	Terminal	Terminal	
DIP switch	Enable/disable the 120Ω	No DIP switch,	Enable/disable the 120Ω	
	terminal resistance of	controlled by software	terminal resistance of	
	RS-485 equipment.		RS-485 equipment.	
EMC	Emc level 3 b	Emc level 4 b	Emc level 4 b	
Isolation	Built-in 3KV	Built-in 3KV	Built-in 3KV	
protection				

Note: Shielded wires are recommended for serial interface wiring to improve anti-interference ability.

3.3 Serial Communication Parameters

Products	KPS/KGW3x0xA series	KPS/KGW3224A series	KGW3204A 4Gseries
data bit	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8
Stop position	1, 2	1, 2	1, 2
Check Digit	None, Even, Odd	None, Even, Odd	None, Even, Odd

Table 22 Serial Communication Parameters

Baud rate	50, 75, 110, 134, 150,	110, 300, 600, 1200,	50, 75, 110, 134, 150,
	200, 300, 600, 1200,	2400, 4800, 9600,	200, 300, 600, 1200,
	1800, 2400, 4800, 9600,	19200, 38400, 57600,	1800, 2400, 4800,
	19200, 38400, 57600,	115200, 230400,	9600, 19200, 38400,
	115200, 230400,	Customize (nonstandard	57600, 115200,
	Customize (nonstandard	baud rate)	230400, Customize
	baud rate)	Note: The baud rate of	(nonstandard baud rate)
		230400 is only	
		applicable to RS-485	
		13-16 and RS-422 7-8.	

3.4 Button

Reset: Within 3S of short press, the equipment will be restarted without restoring the factory settings; Long press 3S-10S to restore the factory settings; For more than 10S, do nothing.

3.5 Environmental Conditions

Working temperature: $-40^{\circ}C \sim 75^{\circ}C$

Storage temperature:-40°C ~ 85° C

Relative humidity: $5 \sim 95\%$ without condensation.

Cooling mode: natural cooling, no fan.

3.6 Micro SD

KPS\KGW3224A and KGW3204A-2T4D-232/485-4G-L17 series support Micro SD card expansion.

Support SDIO3.0 standard

3.7 SIM card

KGW3204A-2T4D-232/485-4G-L17 series supports SIM cards.

Micro card: Size 12mm*15mm

Domestic version support: Mobile, Telecom and Unicom.

Global version:

Operator certification: Deutsche Telekom (Europe), Verizon/AT&T/U.S. Cellular (USA),

Telus/Rogers* (Canada)

Compulsory/conformity certification: GCF (global), CE (Europe), UKCA (United Kingdom), PTCRB (North America), FCC (United States), IC (Canada), Anatel (Brazil), IFETEL (Mexico), KC (Korea), NCC (China), JATE/TELEC (Japan), RCM (Australia &

New Zealand), ICASA (South Africa).

4 Software Function

The device has a Web management configuration page, which can be opened by browsers such as Chrome and Firefox to set the device.

Note: The following general functional modules are exemplified by KGW3204A, and the specific functional modules are illustrated by corresponding models.

4.1 WEB Login and Password

Connect to the Web console: open a browser and enter the IP address of the device. Default IP address: network port-eth0: 192.168.0.249; Network port-eth1: 192.168.1.249.

KYLAND	KGW3204A-E-2T4D-232-L17	
	Authorization Required	
	Please enter your username and password Username:	
	Password :	
	LOGIN RESET	

Figure 8 Login Page

Default login user name: admin and login password: pwd\$4\$Kyland. Enter the user name and password and click "Login" to enter the Web console. After logging in to the homepage, you can choose the page display language, and the page text can be switched between English and Simplified Chinese.

4.2 Home Page

The homepage interface is used to display equipment information, including serial number, host name, software version, hardware version and equipment time.

	Path: Home		
Network	Home		
Application			_
FUser		System	
Serial Servers	Serial Number	K10A0023A220300180	
Data Acquisition	Host Name	KGW3204A-E-2T4D-232-L17	
+System	Fireware Version	R0009_Build_0.0.0.3_2302241114	
rsystem	Hardware Version	1.1	
	Device Time	2023-02-24 11:22:18 +0800	
	Copyright (C) 2004-20	22 by Kyland Technology Limited	

Figure 9 Home Page

4.3 Network

4.3.1 Interface

The network-interface page is used to display the relevant network parameters of the serial server device, including the running time of the device, MAC address, data received/sent, IP address, etc.

KYLAND			English(USA)
-Network	Path: Home >> Network >> In	iterface	
Interface Bridge	Network	Status	Action
+Application +User	LAN	Uptime:0 Day(s) 0 Hour(s) 2 Minute(s) 35 Second(s) MAC Address:08:00:27:00:01:a3 RX: 110.59 KB (573 Pkts)	Edit
+Serial Servers	eth0	TX: 767.79 KB (792 Pkts) IPv4:192.168.0.249	
+Data Acquisition	LAN1	Uptime:0 Day(s) 0 Hour(s) 2 Minute(s) 34 Second(s) MAC Address:08:00:27:00:01:a4	
+System	eth1	RX: 0 B (0 Pkts) TX: 0 B (0 Pkts) IPv4:192.168.1.249	Edit



After clicking the Network-Interface menu, the "Edit" button appears on the network interface page. Click the "Edit" button to enter the network interface editing interface, where the user can set the IP address, subnet mask, gateway, customized DNS and multi-IP address of the gateway -LAN (eth0) and gateway -LAN1 (eth1). When all parameters are set, click "Apply" and the network function will take effect after automatic restart.

KYLAND		English(USA)
	Path: Home >> Network >> Ir	nterface -> Interface Settings
-Network	Interface Settings	
• Interface		
Interface Bridge	Interfaces -lan	
+Application	Network changes will applied to	applications after a device reboot.
+User		
+Serial Servers	Interface name	lan
+Data Acquisition	Protocol	Static address ♥
+System	IPv4 address	192.168.0.249
	IPv4 netmask	255.255.255.0
	IPv4 gateway	
	Use custom DNS servers	
	Multi IP address	
	Apply Back	

Figure 11. Website Editing Page

Parameter	Value	Description	
Protocol	Static address, DHCP client	Select static IP or DHCP.	
Ip address	eth0:192.168.0.249 eth1:192.168.1.249	Ip address	
Subnet mask	255.255.255.0	Identifies whether the server belongs to a, b or network.	
Default gateway	0.0.0.0	The IP address of the router that provides network access outside the LAN of the device.	
Custom DNS	IP address	domain name system	
Multiple IP addresses	IP address	You must be in the same network segment as the current network port to add successfully, and you can access the device through the added multi-IP address.	

Table 23 Editing Parameters of Network Port

4.3.2 Network port bridging

The network-gateway bridge page is used to display the network parameters related to gateway bridge, including enabling bridge, IPv4 address, IPv4 subnet mask, using customized DNS server, multiple IP addresses, etc.

Network interface bridging is divided into LAN-LAN and LAN-WAN.

LAN-LAN bridging mode. Tick Enable Bridging, tick "Ethernet Adapter eth1", turn on the

bridging function, set the IP address and subnet mask, and click "Apply". The bridge function between the network port -LAN(eth0) and the network port -LAN1(eth1) has been successfully enabled, and both networks can access this equipment or transmit data with this equipment with the set IPv4 address.

KYLAND			English(USA)	E?
	□ Path: Home >> Network >> In	nterface Bridge		
-Network	Interface Bridge			
Interface		2 <u>1</u> 5		
Interface Bridge	Enable Bridge			
+Application	IPv4 address	192.168.0.249		
+User	IPv4 netmask	255.255.255.0		
+Serial Servers	IPv4 gateway			
The All Academic Constants	Use custom DNS servers			
+Data Acquisition	Multi IP address	L		
+System	Cover the following interface	Ethernet Adapter: "eth0"		
	Network changes will applied to	applications after a device reboot.		
	Apply			

Figure 12 LAN-LAN Gateway Bridge Page

Parameter	Value	Description	
IPv4 address	IP address	Ip address	
IPv4 subnet mask	255.255.255.0	Identifies that the server belongs to a class, b	
		or c network.	
Use a custom	IP address	Domain name system	
DNS server			
Multiple IP		You must be in the same network segment as	
addresses	IP address	the current network port to add successfully,	
		and you can access the device through the	
		added multi-IP address.	

Table 24 LAN-LAN Interface Bridging Parameters

Bridge mode of LAN-WAN. Check Enable Bridging, uncheck "Ethernet Adapter eth1", select the protocol (WAN), set the IP address and subnet mask of the gateway -LAN(eth0) and gateway -WAN (eth1) respectively, and click Apply. The routing function is enabled, and the IP of different network segments can be accessed through the WAN port of this device.

	□ Path: Home >> Network >> In	nterface Bridge	
Network	Interface Bridge		
Interface			
nterface Bridge	Enable Bridge		
Application	IPv4 address	192.168.0.249	
User	IPv4 netmask	255.255.255.0	
Serial Servers	IPv4 gateway		
Data Acquisition	Use custom DNS servers		
	Multi IP address		
+System	Cover the following interface	☑ 2 Ethernet Adapter: "eth0" □ 2 Ethernet Adapter: "eth1"	
	Protocol(WAN)	Static address 🗸	
	IPv4 address(WAN)	192.168.1.249	
	IPv4 netmask(WAN)	255.255.255.0	
	IPv4 gateway(WAN)		
	Use custom DNS servers(WAN)		
	Multi IP address(WAN)		
		applications after a device reboot.	

Figure 13 LAN-WAN Interface Bridge Page

Parameter	Value	Description	
Protocol	Static address, DHCP client	Select static IP or DHCP.	
IPv4 address	IP address	Ip address	
IPv4 subnet mask	255.255.255.0	Identifies that the server belongs to a class, b or c	
		network.	
IPv4 gateway	IP address	Default gateway	
Use a custom	IP address	Domain name system	
DNS server	ii uuurobb		
Multiple IP		The LAN port has multiple IPS, and it must be in	
addresses		the same network segment as the current network	
	IP address	port to be added successfully, and the device can	
		be accessed through the added multiple IP	
		addresses.	
Multi-IP address		WAN port has multiple IPS, and it must be in the	
(WAN)	IP address	same network segment as the current network port	
		to be added successfully, and the device can be	

Note: A single network port device does not support bridging.

4.4 Mobile Network Settings

Note: KGW3204A-2T4D-232/485-4G-L17 unique function module.

4.4.1 Mobile network enabling

The mobile network enabling page is used to display and set relevant parameters of mobile network settings, including enabling mobile network, access point name, user name, password and Ping address.

When the mobile network function is enabled, the device will communicate with the 4G network to realize the function of wireless communication. When the access point name, user name and password are correctly filled in, the system will register with the correct access point name, user name and password. When the access point name, user name and password are not filled in, the system will register with the default access point name, user name and password.

Note: APN is not required for non-private network.

KYLAND			English(USA)
	□ Path: Home >> Mobile Networ	rk Settings >> Mobile Network Enable	
+Network	Mobile Network Enable		
 Mobile Network Settings 			
• Mobile Network Enable	Enable Mobile Network		
IMSI	APN Setting		
+Application	APN		
+User	Account		
	Password		
+Serial Servers	Ping Address	kyland.com.cn	
+Data Acquisition			
+System	Apply		

Figure 14 Mobile Network Enabling Page

Table 26 Enabling Parameters	of Mobile Network
------------------------------	-------------------

Parameter	Value	Description
Access point name	Access point name or empty	APN
User name	User name or empty.	User name
Password	Password or empty.	Password
Ping address	Ping address	Ping address is used to judge whether the current network communication is normal. If the address filled in

	cannot be pinged, the 4G module
	will be restarted. If this function is
	not enabled, fill in 127.0.0.1.

4.4.2 IMSI

The IMSI page is used to display basic information of IMSI, including IMEI, IMSI and firmware information.

When the mobile network function is enabled, IMEI information, IMSI information and firmware information will be displayed on the IMSI page. Turn off the mobile network function, and the basic information of IMSI page will not be displayed. When the mobile network function is enabled but the SIM card is not inserted, IMSI page displays IMEI information and firmware information, and IMSI is displayed as no sim card.

KYLAND		English(USA)	
+Network - Mobile Network Settings	Path: Home >> Mobile Network Settings >> IMSI IMSI		
Mobile Network Enable	Basic Information		
+Application +User	IMSI Firmware Information		
+Serial Servers	CSQ		
+Data Acquisition +System			

Figure 15 IMSI Page

Table 27 IMSI Parameters

Parameter	Value	Description
IMEI	IMEI information is empty.	Information of 4G module
IMSI	IMSI information is either empty or no sim card.	SIM card information
Firmware information	Firmware information is empty.	4G module firmware
Signal strength	Signal strength and bit error rate	4G signal strength in * *, # # * * It should be between 0 and 31 (99 indicates no signal), and the larger the value, the better the signal quality. # # is the error rate, and the value is between 0 and 99.

4.5 Application

4.5.1 Time synchronization

The time synchronization page is used to display and set time, including enabling time zone selection application, device time synchronization and setting time application.

Time zone setting: Select the corresponding time zone from the drop-down box and click Apply.

Device time: manually synchronize the local time to the device, and the synchronized gateway device time is consistent with the local time.

Setting time: manually set the time parameter by year, month, day, hour and minute, and the time of gateway equipment after application is the set time.

Relevant parameters of time synchronization, including NTP client, calibration interval and candidate NTP servers. When the time synchronization function is enabled, the equipment will regularly check the time with NTP server with the time checking interval as the time checking cycle. When multiple NTP servers are set up, if the device fails to correct the time with the first candidate NTP server, the device will automatically correct the time with the second candidate NTP server, and so on.

KYLAND							English(USA)	
	□ Path: Home >	> Application >>	Time Synchroni	zation				
+Network	Time Synchroni	zation						
-Application					_			
• Time Synchronization	Time Zone				~	Apply		
FTP Settings	Local Time	2023-03-02 14:1	2:11					
Email Settings	Device Time	2023-02-24 11:3	1:46			Sync		
SNMP Settings		Year Month	Day Hour	Min Seco	nd			
MAC Address Filter Settings	Set Time	2023 3	2 14	12 11		Apply		
Basic Alarm	-							
Power Down Alarm Settings	Enable NTP	Client 🗹				Apply		
+User	Time Inte	rval 1 mi	n 🗸					
+Serial Servers	NTP Server Ca	ndidates			* 1			
+Data Acquisition								
+System								

Figure 16 Time Synchronization Page

Table 28 Time Synchronization Parameters

Parameter	Value	Description
-----------	-------	-------------

Time interval	1min, 5min, 20min	Time correction request interval
Candidate NTP server	Target NTP server	The device sends a time correction request to the NTP server.
Time zone	UTC-12:00~UTC+12:00	World time zone time
Equipment time	Local time	After synchronization, the device time is consistent with the local time.
Set-up time	Month: 1-12, day: 1-31, hour: 0-23, minute: 0-59, and second: 0-59.	Set the time manually

4.5.2 FTP settings

The FTP Settings page is used to display the relevant parameters of this device as an FTP server, including enabling FTP server, FTP account and FTP account password.

Enable the FTP server function, and you can use the device as an FTP server to store and download files.

Note: The file storage space of FTP function of KPS\KGW3224A and KGW3204A-2T4D-232/485-4G-L17 models is the built-in SD card of the device, and the FTP function is not available when the SD card is not inserted.

KYLAND			Engli	sh(USA)	
+Network	Path: Home >> Application > FTP Settings	>> FTP Settings			
-Application Time Synchronization FTP Settings	Enable FTP server FTP Server Account FTP Server Password				
Email Settings SNMP Settings MAC Address Filter Settings Basic Alarm	Apply				
Power Down Alarm Settings +User +Serial Servers					
+Data Acquisition +System					



Table 29 FTP Settings Parameters

_		
Parameter	Value	Description
		1

FTP account	Custom (non-root)	User login FTP server account
FTP account	Customize	Password of user login FTP server
password		

4.5.3 Mail alert settings

The e-mail alarm setting page is used to display the relevant parameters of e-mail alarm setting, including enabling e-mail alarm client, address of e-mail sending server, e-mail account and password of e-mail account, etc.

E-mail alarm setting can regularly send alarm information to the mailbox designated by the user, and the alarm content includes equipment IP, CPU and memory information.

KYLAND			English(USA)	C
	□ Path: Home >> Applicat	tion >> Email Settings		
+Network	Email Settings			
-Application				
Time Synchronization	Enable Email Warning			
FTP Settings	Email Server			
Email Settings	Email Account			
SNMP Settings	Email Password			
	Subject			
MAC Address Filter Settings	Email Warning Cycle	1 day 🗸		
Basic Alarm	Email Warning Content	IP		
Power Down Alarm Settings	Email warning Content	CPU/Mem		
+User	Email To			
+Serial Servers	Andu			
+Data Acquisition	Apply			
+System				

Figure 18 Email Alarm Settings

Table 30 Email Alarm Settings

Parameter	Value	Description
Mail delivery address	Server IP address	Mail alert server address
Mail account	Mailbox account	The login account of the sender of the mail.
Mail account	Email password	Password of the login account of the mail
password		sender.
Mail theme	Customize	Mail theme
E-mail alert period	1day, 20hour, 20min, 5min, 1min	The interval between mail sending.
Email alert content	Checked/Unchecked	Email alarm content can be checked with IP,
		CPU/Mem.

Alarm mail receiver	Mailbox account	Mail recipient's mailbox account

4.5.4 SNMP settings

The SNMP Settings page is used to display the related parameters of SNMP settings, including enabling SNMP, service port, community, Trap IP and Trap port.

After successful SNMP setting, you can get the device information, including device time, network information, memory information, etc. At the same time, the device can regularly specify the IP to upload the device information to the user.

KYLAND			English(USA)	E?
	■ Path: Home >> Application	>> SNMP Settings		
+Network	SNMP Settings			
-Application				
Time Synchronization	Enable SNMP			
FTP Settings	Server Port			
Email Settings	Community			
• SNMP Settings	Trap IP			
MAC Address Filter Settings	Trap Port			
Basic Alarm	Apply			
Power Down Alarm Settings				
+User				
+Serial Servers				
+Data Acquisition				
+System				

Figure 19 SNMP Settings

Parameter	Value	Description
Service port	Port number	Port number of the SNMP service of the device.
community	Customize	Community of communication between devices and SNMP protocol
Trap IP	Ip address	The destination IP address of the information
		uploaded by the device.
Trap port	Port number	The destination port number of information uploaded
		by the device.

4.5.5 Address filtering settings

The MAC address setting page is used to display relevant parameters of MAC address filtering settings, including enabling MAC address filtering, MAC address filtering mode and MAC address.

The MAC address filtering setting function is used to set the firewall. By setting the white list, only MAC addresses added to the white list are allowed to access this device. By setting the blacklist,

the MAC address added to the blacklist will not be able to access this device.

Note: Please use black/white list carefully. When the wrong setting of black/white list makes it impossible to access this device, press and hold the Reset button to restore the factory settings to reset the black/white list.

KYLAND					English(USA)	00
	□ Path: Home >> Application >	> MAC Address Fi	lter Settings			
+Network	MAC Address Filter Settings					
-Application						
Time Synchronization	Enable Mac FireWall					
FTP Settings	Mac FireWall Mode	blacklist 🗸				
Email Settings	MAC Address	Re	mark			
SNMP Settings				*		
• MAC Address Filter Settings	Apply					
Basic Alarm						
Power Down Alarm Settings						
+User						
+Serial Servers						
+Data Acquisition						
+System						

Figure 20 MAC Address Filtering Settings Page

Table 32 MAC Address Filtering Set	ting Parameters
------------------------------------	-----------------

Parameter	Value	Description
Mac address filtering mode	White list, blacklist	Select white list or black list for filtering mode.
Mac address	Mac address	MAC address to add to the list.

4.5.6 Basic alarm

The basic alarm page is used to display relevant parameters of basic alarm, including enabling basic alarm, external alarm server and port, external alarm server protocol, alarm threshold, etc.

The basic alarm function can be used for users to manage equipment, monitor equipment status and set alarm conditions. When the utilization rate of CPU or memory is higher than the threshold set by users, alarm information will be sent to the designated external server.

KYLAND				English(USA)
	■ Path: Home >> Application >>	Basic Alarm		
+Network	Basic Alarm			
-Application		2		
Time Synchronization	Enable Basic Alarm			
FTP Settings	External Alarm Server	0.0.0.0		
Email Settings	External Alarm Server Port			
SNMP Settings	External Alarm Server Protocol	TCP 🗸		
MAC Address Filter Settings	Alarm Type	Enable	Threshold	
Basic Alarm	CPU Availability Alarm		50 %	
	Memory Availability Alarm		50 %	
Power Down Alarm Settings				
+User	Apply			
+Serial Servers				
+Data Acquisition				
+System				

Figure 21 Basic Alarm Settings Page

Table 33 Basic Alarm Setting Parameters

Parameter	Value	Description
External alarm server	Ip address	External server IP address
External alarm server port	Port number	External address port number
External alarm server protocol	TCP, UDP	The receiver uses the protocols TCP and UDP.
Alarm type	Checked/Unchecked	Alarm trigger content and conditions

4.5.7 Power failure alarm setting

The power failure alarm page is used to display the relevant parameters of power failure alarm, including enabling power failure alarm, external alarm protocol, external alarm server and port, and alarm content.

Power failure alarm is used to send the prompt information of power failure to the designated external server when the equipment is powered down.

Note: Power failure alarm needs to be correctly connected to the power supply.

KYLAND			English(USA)	6?
+Network −Application	Path: Home >> Application >> Power Down Alarm Settings	Power Down Alarm Settings		
Time Synchronization FTP Settings Email Settings SNMP Settings MAC Address Filter Settings Basic Alarm Power Down Alarm Settings +User +Serial Servers	Enable Power Down Alarm Alarm Protocol External Alarm Server External Alarm Server Port Alarm Content Apply	UDP		
+Data Acquisition +System				

Figure 22 Power Failure Alarm Settings Table 34 Power Failure Alarm Settings

		5
Parameter	Value	Description
Alarm protocol	UDP, SNMP	Alarm protocol UDP or SNMP
External alarm server	Ip address	External server IP address
External alarm server port	Port number	External server port number
Alarm content	Customize	Alarm information content

4.6 User

4.6.1 User management

The user management page is used to display and manage related parameters of user accounts, including user name, password, permission level, etc.

Using the admin user login page, you can add or delete users, modify user passwords, and modify users' read and write permissions on the user management page. Read-only users can only browse Web page information, and cannot modify device configuration parameters and manage users. Read-write users can browse and modify the device configuration parameters of Web pages, but they cannot manage users.
KYLAND					English(USA)
+Network		User >> User Managemer	t		
+Application	User Management	t			
-User	Index	User Name	Password	User Level	Operation
• User Management	1			Read 🗸	🛛 💌 🖄
Modify Password				Read Read/Write	
+Serial Servers					
+Data Acquisition					
+System					

Figure 23 User Management Page

4.6.2 Modify password

User-Modify Password page is used to display relevant parameters of user password, including user name, current password, new password, etc.

On the User-Modify Password page, you can modify the user password. The default user name is admin and the password is pwd\$4\$Kyland.

Modify password: enter the current password, enter the new password, enter the new password again for confirmation, and click "Apply" to show that the password is successfully modified. If you forget the administrator password, press and hold the Reset button to restore the factory settings, you can log in to the page with the initial user name admin and password pwd\$4\$Kyland.

KYLAND			English(USA)	C?
	□ Path: Home >> User >> M	odify Password		
+Network	Modify Password			
+Application		(a		
-User	User Name	admin		
User Management	Current Password	Current Password		
• Modify Password	New Password	New Password		
+Serial Servers	Confirm New Password	Confirm New Password		
+Data Acquisition	Apply			
+System				

Figure 24 Modify Password Page

4.7 Serial server

4.7.1 Serial interface settings

The serial port setting page can set the relevant parameters of the device, which is used to set baud rate, data bit, parity bit, stop bit, serial port mode, etc. Standard and nonstandard baud rates are supported. Select the existing standard baud rate from the Baud Rate drop-down box. If you need to Customize the nonstandard baud rate, select Customize from the drop-down box or double-click the baud rate input box, and then manually enter the required baud rate. Transparent transmission mode supports encrypted transmission, and the modes are DES, 3DES and AES. Select the mode to be encrypted in the drop-down box corresponding to Encrypted Transmission, or select Disabled without encryption.

When the parameters are set, click "Apply" and the parameters will take effect immediately. The configuration of serial communication parameters needs to be consistent with the lower computer; The serial port mode can be selected from four modes: TCP Server, TCP Client, UDP Server and UDP Client. Refer to Chapter 4 for the specific configuration method of serial port parameters.

The local port should be configured above 1024 as far as possible to avoid occupying the system port. If the local port number is not filled in in TCP Client and UDP Client modes, the system will automatically assign the port number. The maximum number of sessions represents the maximum number of allowed upper computers to connect to the serial server. Only 8 links are allowed to be established in TCP Server mode, and only 8 newly established session connections are maintained in UDP Server mode.

Note: Serial interface page and protocol project cannot use the same Serial number at the same time. For example, if serial port 1 is set to TCP Server mode, it is necessary to avoid using COM1 port in protocol project.

letwork	Serial Interface								
pplication					10				
Jser	SerialP	ort1	S	erialPort2			SerialPort3	SerialPort	4
erial Servers	Baud Rate	Date Bits Used	D	arity	Stop Bits U	Icod	Serial Frame bytes(0~1460)	Character Interval/1	00~500m
erial Interface					Contraction Contracts		C		00 5001
tatus Info	9600 🗸	8 ~	None	~	1	~	0	500	
oata Acquisition	Network Mode	Tcp/Server	~						
ystem	Transmit Mode	Transparent	~		Mode				
	Encrypt Transmiss	ion Disabled	~						
	Serial Heartbeat I	Packet]					
	Serial Heartbeat Ti	me(s) * 60							
	Channel Check								
	Connect Informat	ion Disable	~						
	Bind IP address	Default	~						
	Local Tcp Port								
	Max Client Num	* 4							
	Keepalive Time(s)* 10							
	Max No data Time	(s) [#] 200							

Transmission modes are Transparent and Modbus RTU.

Figure 25 Transparent Transmission Mode TCP Server mode

KYLAND	□ Path: Home >> Seria	10	11					English(USA)	
Network	Serial Interface	I Servers >> Seria	al Interfa	ce					
Application	Senar Interface								
	SerialPort		S	erialPort2			SerialPort3	SerialPort4	
Serial Servers	Baud Rate	P			C1				
Serial Interface		Date Bits Used		arity	Stop Bit		Serial Frame bytes(0~1460)		0~500ms
Status Info	9600 🗸 8	~	None	~	1	~	0	500	
Data Acquisition	Network Mode	Tcp/Client	~						
System	Transmit Mode	Transparent	~	Simplex	Mode				
	Encrypt Transmission	Disabled	~						
	Serial Heartbeat Pack	cet 🗌							
	Serial Heartbeat Time	s) ** 60							
	Channel Check								
	Connect Information	Disable	~						
	Keepalive Time(s) *	10							
	Max No data Time(s)*	200							
	Reconnect Time(s) *	60							
		Target Ip *				Target F	Port * Loca	al Tcp Port	
									+ -
	Apply Refresh								

Figure 26 Transparent Transmission Mode TCP Client Mode

KYLAND	□ Path: Home >> Se	arial Convert >> Cori	al Interface				English(USA)	E
-Network	Serial Interface							
Application	Senar Interface						1.4 4 1.5 F	
	SerialPo	ort1	SerialPort2			SerialPort3	SerialPort4	
Serial Servers	Baud Rate	Date Bits Used	Parity	Stop Bits	il-e-i	Serial Frame bytes(0~1460)	Character Interval(10	500
Serial Interface								J~500ms
Status Info	9600 ~	8 🗸	None 🗸	1	~	0	500	
Data Acquisition	Network Mode	Udp/Server	~					
System	Transmit Mode	Transparent	✓ Simple	x Mode				
	Encrypt Transmissi	on Disabled	~					
	Serial Heartbeat P	acket						
	Serial Heartbeat Tin	ne(s) * 60						
	Bind IP address	Default	~					
	Local Udp Port*							
	Max Client Num	* 4						
	Apply Refre	sh						

Figure 27 Transparent Transmission Mode UDP Server Mode

Network	Path: Home >> Seria	al del vers 2 2 della	in internace			
Application						
Jser	SerialPort	l	SerialPort2		SerialPort3	SerialPort4
Serial Servers	Baud Rate	Date Bits Used	Parity	Stop Bits Used	Serial Frame bytes(0~1460)	Character Interval(100~500ms
Serial Interface						
Status Info	9600 🗸 8	~	None 🗸	1 ~	0	500
ata Acquisition	Network Mode	Udp/Client	~			
System	Transmit Mode	Transparent	✓ Simples	Mode		
	Encrypt Transmission	Disabled	~			
	Serial Heartbeat Pac	(et 🗌				
	Serial Heartbeat Time	(s) * 60				
	Target	lp *	Tarç	get End Ip	Target Port * Lo	cal Tcp Port
						+ -

Figure 28 Transparent Transmission Mode UDP Client Mode

Parameter	Value	Description
		Configuration of baud rate of serial port:
		After selecting Customize, manually
		enter the baud rate in the input box,
		ranging from 50 to 250000.
	50, 75, 110, 134, 150, 200, 300,	Note: When KPS/KGW3224A and
	600, 1200, 1800, 2400, 4800, 9600,	KGW3204A-4G models are
	19200, 38400, 57600, 115200,	configured with nonstandard baud
	230400,	rate, use the following calculation
Baud rate	Customize(nonstandard baud rate)	formula to check the error rate. If the
	Note: KPS/KGW3224A model	error rate is less than 0.003,
	does not support 50, 75, 134, 200	configuration is allowed.
	and 1800, and only RS-485 13-16	Calculation formula:
	port supports 230400.	If the baud rate is n, the error rate error
		is:
		M=INT(33333333/16/n)
		N=INT(33333333/M/16)
		error=abs((N-n)/n)
Data bit	5, 6, 7, 8	Configuration of serial data bits
Check Digit	None, Odd, Even	Configuration of serial port parity bit
Stop position	1, 2	Configuration of serial port stop bit

Encryption mode	ECB, CBC	Select the encryption mode for		
transmission	DES, 3DES, AES	encrypted transmission.		
Encrypted		Select the encryption method for		
		directions.		
data transmission		network port can be transmitted in both		
Unidirectional	Checked/Unchecked	Unchecked: the data of serial port and		
		to send data to the network port.		
		Checked: Only the serial port is allowed		
mode	Transparent	transmission mode of serial port data.		
Transmission		Communication mode and transparent		
Network mode	UDP/Server, UDP/Client	operation.		
	TCP/Server, TCP/Client,	Select the network mode of serial port		
		sends data to the outside.		
		character interval, and the serial port		
		length is reached or exceeds the waiting		
spacing	Setting range is 100-500ms.	interval until the serial port data frame		
Character	Unit ms, the default is 500.	the device waits for the character		
		set value of the serial port data frame,		
		network port at one time is less than the		
		if the data length received by the		
		When the serial port data frame is not 0,		
		and send it in packets.		
		length, the serial port will split the data		
		send the data; When it exceeds this		
		waiting character interval, and directly		
		frame length is reached or exceeds the		
Serial data frame	Setting range 0-1460 bytes	interval time until the serial port data		
	Unit bytes, the default is 0.	exceed this length, wait for the character		
		network port of the equipment does not		
		time, and when the data received by the		
		length of data sent by the serial port at a		
		setting value is not 0, the maximum		
		Not enabled when set to 0; When the		

		encrypted transmission.
Encrypted filling	PKCS7, Zero	Select the filling form of encrypted transmission.
Key length	128, 192, 256	AES encryption method can choose the key length.
Encryption key	Custom fill-in key	The key length is between 1 and 32 characters.
Encrypted IV	Custom filling	Encryption IV requires input only when encryption mode is CBC.
Serial port heartbeat packet	Checked/Unchecked Customizable information content	Enable the serial port heartbeat packet, and the serial port will regularly send customized information content.
Heartbeat packet interval of serial port	Unit s, the default is 60.	Enable serial port heartbeat packet and send the time period of serial port heartbeat packet.
Channel check (optional)	Not enabled by default Information content is empty.	Before the device communicates, the network side needs to check the information once. Establish communication connection when receiving correct check information; Disconnect as soon as you receive the error check information.
Connection information (optional)	The default is empty. IP information and Device information are optional.	After the communication connection is established, the device network actively sends the device IP address or device name.
Local port (optional)	Port number	Local port numbers of TCP and UDP Client mode can be automatically assigned by the system by default.
Maximum number of sessions	1~8	Maximum number of sessions in Server mode.
Keep-alive interval	Unit: S, the default is 10 s.	When the device has no data communication, the network sends Keep Alive information frames regularly until the device judges that there is no data

		disconnection.			
		If the set time is exceeded, the			
No data	Unit: S. 200 a by default	communication connection will be			
disconnection	Unit: S, 200 s by default.	disconnected actively when the device has			
		no data communication.			
		In TCP Client mode, the time period for			
Reconnection		reconnecting devices can reduce the network			
	Unit: S, default is 60s.	connection time of TCP Client. If channel			
time		check is set, it needs to be checked again			
		after reconnection.			
Target IP	Ip address	Target IP address			
		In UDP Client mode, the set destination end			
Destination end	T 11	IP address of the destination IP segment can			
IP (optional)	Ip address	be used to send serial port information to			
		multiple consecutive UDP Server servers.			
Target port	Port number	Target port number			
		When setting the local port, a fixed port			
Local port		number will be used for communication;			
	Port number	When the port is empty, the system will			
(optional)		allocate an idle port number for			
		communication.			
		Select the bound network port (effective			
Binding network	oth 0 oth 1	only when two network ports belong to the			
port	eth0, eth1	same network segment and have different			
		IP).			
Bind an IP		Select the IP to bind, and multiple different			
address	Primary IP, multi-IP	IPS can bind the same port (only in			
auuress		Tcp/Server and Udp/Server modes).			

	Path: Home >> Ser	ial Servers >> Seria	al Interface				
Network	Serial Interface						
Application	SerialPor		Serial			SerialPort3	SerialPort4
	SerialPor	ti i	Serial	ort2		SerialPort3	SenalPort4
Serial Servers	Baud Rate	Date Bits Used	Parity		Stop Bits Used	Serial Frame bytes(0~1460)	Character Interval(100~500ms
Serial Interface	9600 ~	8 ¥	None	~	1999 - 19	1	500
Status Info	9600 🗸	8 🗸	None	•	1 ~	0	500
Data Acquisition	Network Mode	Tcp/Server	~				
System	Transmit Mode	Modbus RTU	~				
	Bind IP address	Default	~				
	Local Tcp Port *						
	Max Client Num *	4					
	Keepalive Time(s) *	10					
	Polling Interval(10~1	000ms) * 100					
	RTU Timeout(100~90	100ms) * 1000					

Figure 29 Modbus RTU Transmission Mode TCP Server Mode

Network	Path: Home >> Ser	lai servers >> serie	ar internace			
Application	Serial Interface					
User	SerialPor	t1	SerialPort2		SerialPort3	SerialPort4
Serial Servers	Baud Rate	Date Bits Used	Parity	Stop Bits Used	Serial Frame bytes(0~1460)	Character Interval(100~500m
Serial Interface				12		
Status Info	9600 ~	8 👻	None 🗸	1 ~	0	500
Data Acquisition	Network Mode	Tcp/Client	~			
System	Transmit Mode	Modbus RTU	~			
	Encrypt Transmissio	Disabled	~			
	Keepalive Time(s) *	10				
	Reconnect Time(s)	60				
	RTU Timeout(100~90	000ms) * 1000				
	Slave Id *	Targ	get lp *	1	arget Port * L	ocal Tcp Port
						+ -

Figure 30 Modbus RTU Transmission Mode TCP Client Mode

	Path: Home >> Ser	rial Servers >> Seri	al Interface				
-Network	Serial Interface						
Application	- 10		SerialPo			SerialPort3	o 1 Io 14
	SerialPor	ti	SerialPo	ort2		SerialPort3	SerialPort4
Serial Servers	Baud Rate	Date Bits Used	Parity	Stop Bit	ts Used	Serial Frame bytes(0~1460)	Character Interval(100~500ms
Serial Interface	9600 ~	8 ~		→ 1	~	lo	500
Status Info	9600 •	• •	None	•	•	U	500
Data Acquisition	Network Mode	Udp/Server	~				
System	Transmit Mode	Modbus RTU	~				
	Encrypt Transmissio	Disabled	~				
	Bind IP address	Default	~				
	Local Udp Port*						
	Polling Interval(10~1	000ms) * 100					
	RTU Timeout(100~9	000ms) * 1000					

Figure 31 Modbus RTU Transmission Mode UDP Server Mode

	Path: Home >> Seri	al Servers >> Seria	I Interface			
Network	Serial Interface					
Application			SerialPort2	<u></u>	SerialPort3	SerialPort4
	SerialPort	1	SerialPort2		SenaiPorts	SerialPort4
Serial Servers	Baud Rate	Date Bits Used	Parity	Stop Bits Used	Sorial Framo hutos(0-1460) Character Interval(100~500ms
erial Interface				and the second second		
tatus Info	9600 🗸	· ·	None 🗸		• 0	500
ata Acquisition	Network Mode	Udp/Client	~			
ystem	Transmit Mode	Modbus RTU	~			
	Encrypt Transmission	Disabled	~			
	RTU Timeout(100~90	00ms) * 1000				
	Slave Id *		Target Ip *		Target Port * Local T	cp Port
						· · · · ·

Figure 32 Modbus RTU Transmission Mode UDP Client Mode

Table 36 Modbus RTU Setting Parameters

Parameter	Value	Description
		Configuration of baud rate of serial port:
		After selecting Customize, manually
		enter the baud rate in the input box,
		ranging from 50 to 250000.
	50, 75, 110, 134, 150, 200, 300,	Note: When KPS/KGW3224A and
	600, 1200, 1800, 2400, 4800, 9600,	KGW3204A-4G models are
	19200, 38400, 57600, 115200,	configured with nonstandard baud
	230400,	rate, use the following calculation
Baud rate	Customize (nonstandard baud rate)	formula to check the error rate. If the
	Note: KPS/KGW3224A model	error rate is less than 0.003,
	does not support 50, 75, 134, 200	configuration is allowed.
	and 1800, and only RS-485 13-16	Calculation formula:
	port supports 230400.	If the baud rate is n, the error rate error
		is:
		M=INT(33333333/16/n)
		N=INT(33333333/M/16)
		error=abs((N-n)/n)
Data bit	8	Not configurable
Check Digit	None, Odd, Even	Configuration of serial port parity bit
Stop position	1, 2	Configuration of serial port stop bit
Serial data frame	Unit bytes, the default is 0.	Not configurable

Character spacing	Unit ms, the default is 500. Setting range is 100-500ms.	Not effective				
Network mode	TCP/Server, TCP/Client,	Select the network mode of serial port				
Network mode	UDP/Server, UDP/Client	operation.				
Transmission	Modbus RTU	Communication mode of serial port data,				
mode	Wodbus K I U	Modbus RTU mode.				
The set of the set		Local port numbers of TCP and UDP				
Local port	Port number	Client mode can be automatically				
(optional)		assigned by the system by default.				
Maximum		Maximum number of sessions in Server				
number of	1~8					
sessions		mode.				
		When the device has no data				
17 1.		communication, the network sends Keep				
Keep-alive	Unit: S, the default is 10 s.	Alive information frames regularly until				
interval		the device judges that there is no data				
		disconnection.				
		In TCP Client mode, the time period for				
		reconnecting devices can reduce the				
Reconnection	Unit: S, default is 60s.	network connection time of TCP Client.				
time		If channel check is set, it needs to be				
		checked again after reconnection.				
Target IP	Ip address	Target IP address				
Target port	Port number	Target port number				
		When setting the local port, a fixed port				
		number will be used for communication;				
Local port	Port number	When the port is empty, the system will				
(optional)		allocate an idle port number for				
		communication.				
		Select the bound network port (effective				
Binding network	eth0, eth1	only when two network ports belong to				
port		the same network segment and have				

		different IP).
Slave Id	1-255	Slave Id value of TCP and UDP Client, that is, slave station address.
Polling interval	10-1000ms	TCP/UDP Server network mode, when the request time of the upper computer is less than the set value, the time interval for the device to send continuous requests to the lower computer is the sum of the set value and the request processing time; When the time requested by the upper computer is greater than the set value, the value setting is invalid.
RTU timeout	100-9000ms	The upper computer sends a request message, and if the lower computer fails to reply after the set time, the serial server will send a timeout message to the upper computer. This value needs to be less than the timeout set by the upper computer.
Bind an IP address	Primary IP, multi-IP	Select the IP to bind, and multiple different IPS can bind the same port (only in Tcp/Server and Udp/Server modes).

	Path: Ho	me >:	> Serial	Servers >>	 Serial Interfa 	ice			
Network	Serial Inte	erface							
Mobile Network Settings					1				
Application	2	Seria	alPort1			SerialPort2		SerialPort3	SerialPort4
Jser	Baud Ra	ata	Data	Bits Used	Parity	Stop Bits Used	Туре	Sarial Frame buter(0=1460)	Character Interval(100~500ms
Serial Servers		2007R	100000000		Version and				11
Serial Interface	9600	~	8	~	None 🗸	1 ~	RS-422 ~	0	500
Status Info	Netwo	ork Me	ode	Tcp/Serve	er 🗸		RS-232 RS-485		
Data Acquisition	Transn	nit Mo	de	Transpare	ent 🗸	Simplex Mode	RS-422		
System	Serial He	artbea	at Packe	t 🗆]			
	Serial Hea			• 60					
	Chann	iel Che	eck						
	Connect	Inform	nation	Disable	~				
	Local 1		rt *	7003					
	Max Cli		um *	4					
	Keepaliv		e(s) *	10					
	Max No d	ata Tir	me(s) #	200					

Figure 33 Serial Ports 3 and 4 Configured as RS-422.

Note: Serial ports 1-2 of KGW3204A-2T4D-232/485-4G-L17 series products are fixed as RS-485, and serial ports 3-4 are fixed as RS-232 or RS-485 when they leave the factory, and cannot be changed after leaving the factory. If the serial port 3-4 is set as RS-485 in the factory, two RS-485s can be configured as one RS-422 on the serial port server-serial interface setting page.

Table 37 Serial Port Ty	pe Parameters
-------------------------	---------------

Parameter	Value	Description
Туре	RS-232\RS-485\RS-422	If the hardware is set to RS-232, the type should be RS-232, and the other two options will not take effect; If the hardware is set to RS-485, the serial port mode is 485 when the type is RS-485, 422 when the type is RS-422, and it will not take effect when the type is RS-232.

4.7.2 Status messages

The status information page is used to record the running information of the serial port of the equipment, including the sending and receiving information of the serial port and the connection information of the TCP transmission mode, and can be used to observe the connection status of the serial port of the equipment.

KYLAND				English(USA)	Ð
	Path: Home >> Se	erial Servers >> Status Info			
Network	Status Info				
Application		10			
User	Serial Name	Serial Info	Link Info		
	/dev/ttyS1	Rx: 0.00 MB (0 Byte) Tx: 0.00 MB (0 Byte)			
Serial Interface	/dev/ttyS2	Rx: 0.00 MB (0 Byte) Tx: 0.00 MB (0 Byte)			
Status Info	/dev/ttyS3	Rx: 0.00 MB (0 Byte) Tx: 0.00 MB (0 Byte)			
Data Acquisition	/dev/ttyS4	Rx: 0.00 MB (0 Byte) Tx: 0.00 MB (0 Byte)			

Figure 37 Status Information Mode

4.7.3 Extra configuration

Note: KPS/KGW3224A unique function module.

The additional configuration page is used to set the running configuration of the device serial port, including enabling/disabling the 120Ω resistor in RS-485 mode and enabling/disabling the configuration of the RS422 port, which can be used to set additional configuration items of the device serial port.

RS-485 120 Ω configuration

By default, the 120Ω resistor is not enabled for RS-485 serial port. When port N and port n+1 are set to on on the page, the 120Ω resistor is enabled for two consecutive 485 ports. When the page setting port n and port n+1 are off, the 120Ω resistor is disabled for two consecutive 485 ports.

KYLAND						English(USA)
	Path: H	ome >> Seria	Servers >> A	dditional Config		
Network	RS-485	120Ω Config	Serial Inter	ace Mode Config		
			-			
User	Port	120	Ω			
Serial Servers	1	OON	OFF			
erial Interface	2					
Status Info	3	OON	OFF			
Additional Config	4					
Data Acquisition	5	OON	OFF			
System	6					
	7	OON	OFF			
	8	8 9 Oon				
			OFF			
	10		~ ~ ~			
	11	OON	OFF			
	12					
	13	OON	OFF			
	14					
	15	Oon	OFF			
	16	0.011				



Serial port mode configuration

By default, the RS-485 serial port is RS485 mode. When the page sets port n as enabled, two consecutive RS485 ports 2n-1 and 2n are enabled as RS422 mode. When the page setting port n is not enabled, two consecutive ports 2n-1 and 2n are in RS485 mode.

	Path: Home >	> Serial	Servers >> Additional Config	
Network	RS-485 120Ω C	onfig	Serial Interface Mode Config	
Application				
User	RS-422 Port	Enable	Remark	
Serial Servers	1		TX : RS-485 Port 1 ; RX : RS-485 Port 2	
Serial Interface	2		TX : RS-485 Port 3 ; RX : RS-485 Port 4	
Status Info	3		TX : RS-485 Port 5 ; RX : RS-485 Port 6	
	4		TX : RS-485 Port 7 ; RX : RS-485 Port 8	
Additional Config	5		TX : RS-485 Port 9 ; RX : RS-485 Port 10	
Data Acquisition	6		TX : RS-485 Port 11 ; RX : RS-485 Port 12	
System	7		TX : RS-485 Port 13 ; RX : RS-485 Port 14	
	8		TX : RS-485 Port 15 ; RX : RS-485 Port 16	

Figure 36 Serial Port Mode Configuration

4.8 Data acquisition

The data collection page is used to display and set the relevant configuration information of the protocol gateway. You can view the general situation of the protocol configuration through the Web page, enable, delete, download and import the protocol project, and upgrade the EDPS file and authorize the EDPS.

Note: this page will only be displayed for KGW310XA, KGW320XA, KGW3224A and KGW3204A-4G series products.

4.8.1 Overview of protocol configuration

The protocol configuration overview page is mainly used to display and set the configuration information related to device communication protocols, including three parts: running project configuration, protocol engineering list and protocol driver list.

Run project configuration

In the running project configuration, click the configuration items of collection service and forwarding service to view the project configuration parameters of equipment currently running, including port information, protocol parameters and equipment information of engineering configuration.

KYLAND				English(JSA)
	□ Path: Home >> Data Ad	quisition >> Prot	ocol Config OverView		
Network	Current Project Detail	Protocol Project	List Protocol Driver List		
Application	Client		ID	Property	_
·User	b modbus[modbusc]	lient]	Name	modbusCJ1	
-Serial Servers	🖃 🔶 Port Group	-	Vendor		
-Data Acquisition	CH.1[192.16		Address	1	
Protocol Config OverView	Protocal Paralla	leter	Model	Standard	
EDPS Upgrade	<u>modbusCJ1</u>	Unknown]	Period for Class 1 Data(ms)	500	
EDPS Authorization			Period for Class 2 Data(ms)	1000	
+System			Period for Class 3 Data(ms)	10000	
			Time Sync Period(s)	-1	
			Events(ms)	0	
			Byte Order for 2 Bytes	21	
			Byte Order for 3 Bytes	321	
			Byte Order for 4 Bytes	4321	
			Byte Order for Float	4321	
			The Maximum Coils for Polling	2000	_
			The Maximum Registers for Polling	125	
			The Maximum Coils for Writing	800	
			The Maximum Registers for Writing	100	
	4	•	Data Bytes in a Register	2	
	Server		Event Mode	Auto	*

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Protocol engineering list

In the list of protocol projects, you can view and manage protocol projects, and enable, download, delete and import them.

The project displayed in the protocol project list is called the downloaded protocol project in the equipment.

After downloading the protocol project, click the "Enable" button, and the page shows that the operation is successful. The enabling box of the protocol project is in a checked state, and the current protocol project is activated and immediately runs. Only one protocol project can be enabled, and multiple protocol projects cannot be enabled at the same time.

In the protocol project list, click the "Download" button of the protocol project, and the protocol project will be saved to the local computer.

In the list of protocol projects, click the "Delete" button of the inactive protocol project, and click "Confirm" to delete the project. The page shows that the operation is successful and the protocol project will be deleted from the equipment. In order to ensure the normal operation of equipment functions, it is not allowed to delete the enabled protocol projects in the equipment.

Click "Browse" button, select the path of the protocol project file stored in the local computer, and then click "Import" button to import the selected protocol project into the protocol gateway and start running immediately.

In the second seco			Jisition >> Protoco	I Config Over\	fiew
Network	Current Projec	t Detail P	rotocol Project List	Protocol D	river List
Application User	Protocol	10 S 10 10			
+Serial Servers		and the transmitter	evice and status		
-Data Acquisition	Enable F	Project Name		Action	
Protocol Config OverView		101TO101	Start	Download	Delete
EDPS Upgrade					
EDPS Authorization		101TO103	Start	Download	Delete
System		modbus	Start	Download	Delete
	Protocol Import a comp Project File	patible project	mport here to replace the ile No file chosen		ct Import

Figure 38 Protocol Engineering List

Protocol driver list

In the protocol driver list, you can view the communication protocol driver information supported by this device, including driver name, driver description, driver file name, driver version and authorization status.

	Path: Home >> Data Acquisit	tion >> Protocol Config OverView			
+Network	Current Project Detail Proto	col Project List Protocol Driver List			
+Application	Protocol Driver List				
HUser					
+Serial Servers	Protocol driver list in the device	3			
-Data Acquisition	Driver Name	Driver Description	Driver File	Driver Version	Authorization Status
Protocol Config OverView	Modbus Client Driver	Modbus Client Driver For KGW3000	modbusclient.so	R0006_Build_0.0.0.1_2302211000	No Authorize
EDPS Upgrade	Modbus Server Driver	Modbus Server Driver For KGW3000	modbusserver.so	R0006_Build_0.0.0.1_2302211000	No Authorize
EDPS Authorization	OPC UA Client Driver	OPC UA Client Driver For KGW3000	opcuaclient.so	R0006_Build_0.0.0.1_2302211000	No Authorize
+ System	OPC UA Server Driver	OPC UA Server Driver For KGW3000	opcuaserver.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	EDPS Cal driver	EDPS Cal driver For KGW3000	edpscal.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	EDPS Cal Script	EDPS Cal Script For KGW3000	edpsscript.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	DNP Client Driver	DNP Client Driver For KGW3000	dnpclient.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	DNP Server Driver	DNP Server Driver For KGW3000	dnpserver.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	IEC101 Client Driver	IEC101 Client Driver For KGW3000	iec101client.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	IEC101 Server Driver	IEC101 Server Driver For KGW3000	iec101server.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	IEC103 Client Driver	IEC103 Client Driver For KGW3000	iec103client.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	IEC103 Server Driver	IEC103 Server Driver For KGW3000	iec103server.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	IEC104 Client Driver	IEC104 Client Driver For KGW3000	iec104client.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	IEC104 Server Driver	IEC104 Server Driver For KGW3000	iec104server.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	DL/T 645-2007 Client Driver	DL/T 645-2007 Client Driver For KGW3000	gb614client.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	DL/T 645-1997 Client Driver	DL/T 645-1997 Client Driver For KGW3000	g <mark>bme</mark> terclient.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	SIEMENS S7 Client Driver	SIEMENS S7 Client Driver For KGW3000	s7client.so	R0006_Build_0.0.0.1_2302211000	No Authorize
	MQTT Data Collect Driver	MQTT Data Collect Driver For KGW3000	mqttsc.so	R0006_Build_0.0.0.1_2302211000	No Authorize

Figure 39 Protocol Driver List

4.8.2 EDPS upgrade

The EDPS upgrade page is mainly used for updating and upgrading EDPS functions.

Click the "Browse" button, select the upgrade file path, and then click the "Upgrade EDPS" button to upgrade the EDPS of the webpage. When the page shows that the upgrade is successful, the

device EDPS function is successfully updated and upgraded.

The EDPS upgrade function does not affect the existing protocol engineering files in the equipment and the authorization of EDPS.

KYLAND		English(USA)	63
+Network	Path: Home >> Data Acquisition >> EDPS Upgrade EDPS Upgrade		
+Application	FDDC I Is see de		1
+User	EDPS Upgrade		
+Serial Servers	Upload a EDPS tar.gz here to upgrade the EDPS.		
-Data Acquisition	EDPS Upgrade File Choose File No file chosen Upgrade EDPS		
Protocol Config OverView			
• EDPS Upgrade			
EDPS Authorization			
+System			

Figure 40 EDPS Upgrade

4.8.3 EDPS authorization

EDPS authorization page is mainly used for EDPS authorization authentication, and it can only run normally and stably after authorization authentication.

Click the "Export" button to export the machine code file to the local computer. Then, submit the machine code file to the manufacturer to generate the authorization file.

Click the "Browse" button, select the path of the authorization file, and click the "Import" button to import the authorization file into the device. When the page display operation is successful, the EDPS authorization of the device is successful.

KYLAND	Englis	sh(USA)
	□ Path: Home >> Data Acquisition >> EDPS Authorization	
+Network	EDPS Authorization	
+Application		
+User	Click "Export" to export EDPS machine code.	
+Serial Servers	Machine Code Export Export	
Data Acquisition	To authorize EDPS, you can import a authorization file here.	
Protocol Config OverView		
EDPS Upgrade	Authorization File Import Choose File No file chosen Import	
EDPS Authorization		
+System		

Figure 41 EDPS Authorization

4.9 System

4.9.1 Log

The system log page is used to record the running information of equipment, and the log can be downloaded, which is convenient for daily maintenance and fault detection of equipment.

	Path: Home >> System >> Log
Network	System Log Logging Settings
Application	Feb 24 11:30:45 KGM3204A-E-2T4D-232-L17 daemon.info kytools[2521]: receive request eth index: 3 {thr ip search->56}
ser	Feb 24 11:20:23 KGW3204A-E-2740-232-L17 doemon.info kyserial[2547]: reuseaddr:1 {create listen tcp-134}
ser	Feb 24 11:20:23 KGW3204A-E-2T4D-232-L17 daemon.info kyserial[2547]: hostname:KGW3204A-E-2T4D-232-L17,localip:192.168.0.249 {p
erial Servers	Feb 24 11:20:23 KGW3204A-E-2T4D-232-L17 daemon.info kyserial[2547]: first init param serial4 {param_init_with_serial_num->59}
	Feb 24 11:20:22 KGW3204A-E-2T4D-232-L17 daemon.info kyserial[2547]: first init param serial3 {param_init_with_serial_num->59}
ata Acquisition	Feb 24 11:20:22 KGW3204A-E-214D-232-L17 daemon.info kyserial[547]: first init param serial2 {param_init_with_serial_num->59}
System	Feb 24 11:20:22 KGW3204A-E-2T4D-232-L17 daemon.info kyserial[2547]: first init param serial1 {param_init_with_serial_num->59} Feb 24 11:20:22 KGW3204A-E-2T4D-232-L17 daemon.info kyserial[2547]: kyserial start {main->997}
	rep 24 11:20:22 Kuus2044-E-2140-232-L17 daemon.into Kyšerial(254/]: Kyšerial start {main->99/} Feb 24 11:20:19 KGN3204A-E-2140-232-L17 authpriv.info dropbear[2453]: Not backgrounding
.og	Feb 24 11:20:19 KGM3204A-E-2140-232-L17 authpriv.ind oropean[2455]; Not backgrounding Feb 24 11:20:12 KGM3204A-E-2140-232-L17 authpriv.ind oropean[2455]; Not backgrounding
Backup/Restory	Feb 24 11:20:12 KGN32044-E-2140-232-L17 deemon.err block: /dev/mtdblock12 is already mounted on /rom
Jackup/Restory	Feb 24 11:20:05 KGW3204A-E-2140-232-L17 syslog.info syslogd started: BusyBox v1.27.2
Upgrade	Feb 24 11:19:49 SerialServer syslog.info syslogd exiting
	Feb 24 11:19:48 SerialServer daemon.notice procd: /etc/rc.d/K80timing: stop timing service
Reset	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K80macfilter: stop macfilter service
Reboot	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K78edpsmain: stop edpsmain service
(0000)	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K76ftp: Delete USER from the system
	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K76ftp:
	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K76ftp: Usage: deluser [remove-home] USER
	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K76ftp:
	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K76ftp: BusyBox v1.27.2 () multi-call binary.
	Feb 24 11:19:47 SerialServer daemon.notice procd: /etc/rc.d/K76ftp: stop vsftpd service
	Feb 24 11:19:46 SerialServer daemon.notice procd: /etc/rc.d/K76ftp: Delete USER from the system
	Feb 24 11:19:46 SerialServer daemon.notice procd: /etc/rc.d/K76ftp: Usage: deluser [remove-home] USER
	reo 24 11:19:46 Serialserver daemon.notice procd: /etc/rc.d/K76fp: Usage: deluser [remove-nome] USEK Feb 24 11:19:46 Serialserver daemon.notice procd: /etc/rc.d/K76fp:
	Feb 24 11:19:46 SerialServer daemon.notice proce: /etc/rc.d/K76ftp: BusyBox v1.27.2 () multi-call binary.
	Feb 24 11:19:46 SerialServer daemon.notice prodd. /etc/rc.d/k75hasealarm: stop base alarm service
	Feb 24 11:19:45 SerialServer authoriv.info dropbear[2855]: Early exit: Terminated by signal
	Feb 24 11:19:45 SerialServer daemon.notice prod: /etc/rc.d/K100poweralarm: stop poweralarm service
	Feb 24 11:19:45 SerialServer daemon.notice procd: /etc/rc.d/K100poweralarm: uci: Entry not found
	Feb 24 11:19:45 SerialServer daemon.info procd: - shutdown -
	Feb 24 11:17:24 SerialServer authpriv.notice dropbear[3443]: Password auth succeeded for 'root' from 192.168.0.250:49163
	Feb 24 11:17:22 SerialServer authpriv.info dropbear[3443]: Child connection from 192.168.0.250:49163
	Feb 24 11:16:15 SerialServer authpriv.info dropbear[2855]: Not backgrounding

Figure 42 System Log

Log settings are used to send log information to the designated external server, and can be used to remotely monitor equipment operation information.

KYLAND			English(USA)	C ?
	■ Path: Home >> System >> Log			
+Network	System Log Logging Settings			
+Application				
+User	Enable Log Client			
+Serial Servers	External System Log Server			
+Data Acquisition	External System Log Server Port	514		
System	External System Log Server Protocol	UDP		
Log	Apply			
Backup/Restory				
Upgrade				
Reset				
Reboot				

Figure 43 Log Settings	
Table 38 Log Settings	

Parameter	Value	Description
External log server	Ip address	External server IP address
External log server port	Port number	External server port number
External log server protocol	UDP	Only UDP protocol is supported.

4.9.2 Backup/recovery

The backup and recovery page can be used for configuration backup and upload.

Click "Generate Backup" to download the current configuration file and archive the backup to the local area. Click "Browse" button, select the path of the local configuration file, and click "Upload Backup" to import the local configuration file, and use the local configuration file to restore the device configuration information.

KYLAND				English(USA)	₿?
	□ Path: Home >> System >	> Backup/Restory			
+Network	Backup/Restory				
+Application	a production data a	download a tgz archive of the current conf	Summer 191		1
+User	Click Generate Archive to o	Jownload a tgz archive of the current con	iguration nies.		
+Serial Servers	Downlo	ad Backup Genera	ate Archive		
+Data Acquisition	To restore configuration file	s, you can upload a previously generated b	ackup archive here.		
-System					
Log	Reset To Backup	Choose File No file chosen	Upload Archive		
Backup/Restory	-				
Upgrade					
Reset					
Reboot					

Figure 44 Backup and Recovery Page

4.9.3 Upgrade

The upgrade page can be used for firmware upgrade and update.

Click the "Select File" button, select the upgrade file path, and then click the "Upgrade" button to upgrade the webpage firmware. After the upgrade is successful, the gateway device automatically restarts and the system is updated successfully.

Check the "Keep Configuration" button, and the configuration will be kept after the upgrade. If "Keep Configuration" is not checked, the configuration will not be kept after upgrading, and the configuration information will be restored to the factory default configuration status.

Note: When upgrading the firmware of KPS/KGW3x0xA series, the EDPS firmware will be upgraded at the same time.

Note: The upgrade will stop the related business procedures. If the related business is used after the upgrade fails, the machine needs to be restarted.

KYLAND		English(USA)	E?
	□ Path: Home >> System	>> Upgrade	
+Network	Upgrade		
+Application	100 10		7
+User	Flash new firmw	are image	
+Serial Servers	Upload a sysupgrade-con firmware image).	patible image here to replace the running firmware. Check "Keep settings" to retain the current configuration (requires a compatible	
+Data Acquisition			
—System	Keep Settings		
Log	Image	Choose Files No file chosen Flash Image	
Backup/Restory			
• Upgrade			
Reset			
Reboot			

Figure 45 Upgrade page

4.9.4 System reset

The system reset page is used to restore this equipment to the factory setting state.

When all the setting information on the device needs to be cleared, click the "Perform Reset" button to restore the new generation gateway to the factory default settings.

KYLAND	English(USA)	DC
	□ Path: Home >> System >> Reset	
+Network	Reset	
+Application		
+User	Reset To Default Perform Reset	
+Serial Servers		
+Data Acquisition		
-System		
Log		
Backup/Restory		
Upgrade		
Reset		
Reboot		

Figure 46 System Reset Page

Note: Restoring the factory settings will completely reset the equipment, and the equipment configuration parameters will be restored to the factory default configuration state. Please back up the important configuration information of the equipment before using to restore the factory settings.

4.9.5 Restart

The restart page is used to restart this device.

When it is necessary to restart the equipment, click the "Execute Restart" button to restart the

equipment.

YLAND		English(USA)
	■ Path: Home >> System >> Reboot	
Network	Reboot	
pplication	Reboot the operating system of your device	
Jser	Keboot the operating system of your device	
Serial Servers	Perform Reboot	
Data Acquisition		
ystem		
og		
ackup/Restory		
lpgrade		
leset		
Reboot		

Figure 47 Restart the Page

4.10 Help

There is a "Help" button in the upper right corner of the Web interface. Click "Help" to jump to the official page of Kyland Technology.

KYLAND			English(USA)	Ð
	Path: Home			-
Network	Home			
Application				
User		System	1	
Serial Servers	Serial Number	K10A0023A220300180		
Data Acquisition	Host Name	KGW3204A-E-2T4D-232-L17		
System	Fireware Version	R0009_Build_0.0.03_2302241114		
	Hardware Version	1.1		
Log	Device Time	2023-02-24 11:57:48 +0800		
Backup/Restory				
Upgrade	KYLAN			
Reset	Copyright (C) 2004-20	22 by Kyland Technology Limited		
Reboot	copyright (c) 2004-20.	ce by tytalic recimology clinice		

Figure 48 Help Page

4.11 Quit

After logging in to the Web page and completing the page configuration, click the exit button to exit the Web login state, so as to prevent the abnormal function of the device caused by wrong operation. The Exit button is located in the upper right corner of the interface.

KYLAND			English(USA)	B
	Path: Home			
+Network	Home			
+Application				
+User		System		
+Serial Servers	Serial Number	K10A0023A220300180		
+Data Acquisition	Host Name	KGW3204A-E-2T4D-232-L17		
a construction of a construction of the second second	Fireware Version	R0009_Build_0.0.03_2302241114		
-System	Hardware Version	1.1		
Log	Device Time	2023-02-24 11:58:11 +0800		
Backup/Restory				
Upgrade	KYLAN	9		
Reset	C	2 by Kyland Technology Limited		
• Reboot	Copyright (C) 2004-202	2 by Kyland Technology Limited		

Figure 49 Exit the Page

5 Operational Use Case

5.1 Network Port Bridging Operation Case

Bridge function is not enabled

A. Network port 0 and network port 1 are different network segments

Without configuring a gateway, you cannot communicate with each other. When two network ports need to be able to communicate with each other, you need to configure one of the network ports as the gateway of the other network port (for example, configure the gateway of network port 0:192.168.0.249 to network port 1:192.168.1.249)



B. Network port 0 and network port 1 are the same CIDR segments

The two network ports cannot access each other to communicate, and network port 0 and network port 1 are in an independent working mode.

Bridge function is enabled

When the network mode is to enable the bridging function, the serial server can work in LAN-LAN or LAN-WAN mode.

When two devices need to be able to access and communicate with each other on the same network segment, choose LAN-LAN mode. Check Enable Bridging, and check "Ethernet Adapter eth1". At this time, the ports 0 and 1 are LAN ports.

When different network segments need to be able to access each other for communication, choose LAN-WAN mode. Check enable bridging, and uncheck "Ethernet adapter eth1". At this time, Ethernet port 0(eth0) is LAN port and Ethernet port 1(eth1) is WAN port.

A. bridging with the same network segment

Physical connection:



ip:192.168.0.249

Figure 50 Physical connection

On the Web page, check Enable Bridging, turn on the bridging function, check "Ethernet Adapter eth1", set the IP address and subnet mask, and click "Apply" to enable two devices on the same network segment to communicate with each other.

KYLAND			ish(USA)
	Path: Home >> Network >> In	nterface Bridge	
etwork	Interface Bridge		
terface	Enable Bridge		
terface Bridge			
oplication	IPv4 address	192.168.0.249	
	IPv4 netmask	255.255.255.0	
rial Servers	IPv4 gateway		
ta Acquisition	Use custom DNS servers		
	Multi IP address		
ystem	Cover the following interface	Ethernet Adapter: "eth0"	
	Network changes will applied to	applications after a device reboot.	

Figure 51 Bridging the network ports of the same network segment

Ping another device (IP: 192.168.0.111) on a PC with an IP of 192.168.0.242, and you can ping.

B. Bridging different network segments

Physical connection:



Figure 52 Physical connection

Leave "Ethernet adapter eth1" unchecked on the Web page, select the protocol, set the IP address and subnet mask, and click "Apply" to enable two devices with different network segments to communicate with each other.

Note: the gateway must be configured correctly, otherwise communication cannot be carried out.



Figure 53 Bridge of Network Ports of Different Network Segments

Ping another device (IP:192.168.0.111) on a PC with an IP of 10.12.2.233, and you can ping.

5.2 Transparent Transfer Operation Cases

A KGW3204A and a computer are used, and the serial interface type of the gateway is RS-232. As a TCP Server, the gateway uses a USB-to-RS-232 serial communication line at the USB end of the computer, and the DB9 port of the USB-to-RS-232 serial communication line is connected to the serial port S1 of the terminal of this equipment.

Note: This operation case is that the serial port uses transparent transmission communication protocol, RS-232 serial port connection mode, and the network port uses TCP Server and TCPClient network communication mode. If the serial port is an RS-485 cable or the network mode adopts other modes, the configuration item can be changed to the corresponding mode, and the operation method is similar.

5.2.1 TCP Server mode

A. Configuring the Web console

Start KGW3204A, enter the IP address in the browser, and enter the user name and password to log in to the Web page.

Click "serial server"-"serial interface settings" in the navigation bar, select serial port 1, TCP Server for network mode, Transparent for transmission mode, fill in the local port with more than 1024, and the maximum number of connections is 4, set the serial port baud rate, data bits, parity bits, stop bits and other configuration applications, and click "Apply" to save.

Network	Path: Home >> Serial S	severa + + senar miterrat							
Application	Serial Interface								
⊦User	SerialPort1			SerialPort2		Seria	lPort3		SerialPort4
-Serial Servers	Baud Rate	Date Bits Used		Parity		Stop Bits Used	Serial Frame bytes(0~1	460)	Character Interval(100~500ms) *
Serial Interface	9600 ~			is a set	1	~			500
Status Info			INC	one 🗸	1	•	0		500
Data Acquisition	Network Mode	Tcp/Server	~			_			
-System	Transmit Mode	Transparent	~	Simplex Mode					
	Encrypt Transmission	Disabled	~						
	Serial Heartbeat Packet								
	Serial Heartbeat Time(s)	60							
	Channel Check								
	Connect Information	Disable	~						
	Bind IP address	Default	•						
	Local Tcp Port *	7011							
	Max Client Num*	4							
	Keepalive Time(s) *	10							
	Max No data Time(s) *	200							

B. Configure PC-side parameters

The PC end uses USB to RS-232 serial communication line, and the serial end of the serial communication line connects the terminal of KGW3204A to connect the PC with the device S1.

Open the integrated debugging management tool "KyCMT", right-click the serial network debugging assistant column to create a new debugging assistant, select TCP Client as the communication port, fill in the local host address, fill in the KGW3204A device IP and port number for the remote address, and click Connect. Right-click to create a new debugging assistant, select COM as the communication port, and configure the parameters related to the serial port to be the same as those of the serial port S1 of KGW3204A equipment. Click Open after the configuration is completed.

After the above operations are completed, enter the numerical value in the data sending area of KyCMT, and you can see that the data receiving area of the integrated debugging management tool can receive the corresponding data, and the two-way communication of data is successful, as shown in the following figure.



Figure 55 Configuration of Integrated Debugging Management Tool Parameters

5.2.2 TCP Client mode

A. Configure PC-side parameters

The PC end uses USB to RS-232 serial communication line, and the serial end of the serial communication line connects the terminal of KGW3204A to connect the PC with the device S1.

Open the integrated debugging management tool "KyCMT", right-click the serial network debugging assistant column to create a new debugging assistant, select TCP Server as the communication port, fill in the local host address, and click Connect if the local port is above 1024.

Right-click to create a new debugging assistant, select COM as the communication port, and configure the parameters related to the serial port to be the same as those of the serial port S1 of KGW3204A equipment. Click Open after the configuration is completed.

B. Configuring the Web console

Start KGW3204A, enter the IP address in the browser, and enter the user name and password to log in to the Web page.

Click "serial server"-"serial interface settings" in the navigation bar, select serial port 1, TCP Client for network mode, Transparent for transmission mode, and fill in the IP and port configured in step a for the destination IP and port. The local port can be left blank (KGW3204A uses the filled-in port to establish connection), and up to four non-repetitive links can be added, and configuration applications such as serial port baud rate, data bits, parity bits and stop bits can be set.

	Path: Home >> Serial Servers >> S	erial Interface						
	Serial Interface							
	SerialPor			SerialPort2	Operate successfully	SerialPort3		SerialPort4
	SerialPor	t1		SerialPort2		SenalPort3		SenalPort4
al Servers	Baud Rate	Date Bits Used		Parity		Stop Bits Used	Serial Frame bytes(0~1460) *	Character Interval(100~500ms) *
al Interface	9600	✓ 8	~	None	v 1	v	0	500
itus Info ta Acquisition	Network Mode	Tcp/Client	~					
otocol Config OverView								
PS Upgrade	Transmit Mode	Transparent	~	Simplex Mode				
PS Authorization	Encrypt Transmission	Disabled	~					
stem	Serial Heartbeat Packet							
	Serial Heartbeat Time(s) *	60						
	Channel Check	0						
	Connect Information	Disable	~					
	Keepalive Time(s) *	10						
	Max No data Time(s)*	200						
	Reconnect Time(s) *	60						
		Target Ip *			Tarç	get Port*	Local Tcp Port	
		192.168.0.150				9001		E -

Figure 56 Web Configuration TCP Client Page

After the above operations are completed, enter the numerical value in the data sending area of KyCMT, and you can see that the data receiving area of the integrated debugging management tool can receive the corresponding data, and the two-way communication of data is successful, as shown in the following figure.

🗳 КуСМТ		-		6 KyCMT			– 🗆 🗙
System Language Windwos Help	p			System Language Windwos H	lelp		
ToolsView @ 🗵	Communication Port	Data Received		ToolsView	Communication Port	Data Received	
III IP Manager	Top Server * Ferns Setting Lock Most Adde 192.108.0.150 * Lock Most Fort 9001 Liseument	Esceive from 192,168,0,249;11514] hall child challs hall child child hall child child hall child child hall child child		II IF Manager II WOM-EIN Connection III Var Net Azzirt COM24	COM Num COMEA ** Bead Rate 9600 * Farity Bit NOME * Data Bit 8 * Step Bit 1 * eksee	hilo'sallo'kallo! kallo'sallo'kallo! kallo'sallo'sallo!	
	Beesive Setting receive to file	Client 192.168.0.249:1155	di sconnect send		Receive Setting receive to file versp automatically show receive time show in hex cave data clear Send Setting file data source clean after send send in hex circular send send ga(ms) 1000	Data Send kallotkallotkallot	send
II Nessage Debug	load file clear	Send: 180 Recv: 162	Reset Count	II Message Debug	load file clear	Send: 162 Reov: 180	Reset Count

Figure 57 Configuration of Integrated Debugging Management Tool Parameters

5.2 ModbusRTU operation case

A KGW3204A and a computer are used, and the serial interface type of the device is RS-232. KGW3204A is a TCP Server. The USB end of the computer uses a USB-to-RS-232 serial communication line, and the DB9 port of the USB-to-RS-232 serial communication line is connected to the serial port S1 of the terminal of this equipment.

Note: In this operation case, Modbus RTU communication protocol and RS-232 serial connection mode are used at the serial port, and TCP Server and TCP Client network communication mode are used at the network port. If the serial port is an RS-485 cable, or the network mode adopts other modes, the configuration item can be changed to the corresponding mode, and the operation method is similar.

5.3.1 TCP Server mode

A. Configuring the Web console

Start KGW3204A, enter the IP address of the serial server in the browser, and enter the user name and password to log in to the Web page.

Click "Serial Server"-"Serial Interface Settings" in the navigation bar, select serial port 1, TCP Server for network mode, Modbus RTU for transmission mode, and fill in the local port with more than 1024, and the maximum number of connections is 4. Set the serial port baud rate, data bits, parity bits, stop bits and other configuration applications, and click "Apply" to save.

	Path: Home >> Serial Servers	>> Serial Inter	face									
	Serial Interface											
	Ser	rialPort1			SerialPort2			SerialPort3			SerialPort4	
		1										
al Interface	Baud Rate		Date Bits	Used		Parity		Stop Bits Used	Ser	ial Frame bytes(0~1460) *	Character In	terval(100~500ms) *
us Info	9600	*	В	~	None		• 1		• 0		500	
ta Acquisition	Network Mode	[Tcp/Server	~								
rotocol Config OverView	Transmit Mode	1	Modbus RTU	~								
PS Upgrade PS Authorization	Bind IP address	1	Default	~								
stem	Local Tcp Port *	7	001									
	Max Client Num *	4	Le contra de la co									
	Keepalive Time(s)*	1	0									
	Polling Interval(10~100	0ms) * 1	00									
	RTU Timeout(100~9000)ms) * 1	000									

Figure 58 Configuring a Web Page

B. Configure PC-side parameters

The PC end uses USB to RS-232 serial communication line, and the serial end of the serial communication line is connected to the terminal of KGW3204A, which connects the PC with the device S1.

Open the software "Modbus Slave", create a new Mbslave window, click the menu bar Connection-Connection Setup, select Serial Port as the communication port, and configure the parameters related to the serial port to be the same as those of the device serial port S1, and click OK after configuration.

Then click the menu bar Setup-Slave Definition to configure the device Address (Slave ID), Function code (function), starting address (address) and Quantity.

Connection Setup X Connection Serial Port USB Serial Port (COM3) USB Serial Port (COM3) G600 Baud ORTU OASCII B Data bits Flow Control None Parity DSR CTS RTS Toggle	Alias 00000 0 1 1 Slave Definition 2 Slave ID: 3 Function: 4 Address: 5 Quantity: 10 6 View 7 8 © 10
1 Stop Bit Image: First disable delay TCP/IP Server IP Address 127.0.0.1 20000 Any Address IPv4 Ignore Unit ID IPv6	9 Hide Alias Columns PLC Addresses (Base 1) Error Simulation Skip response Insert CRC/LRC error (Not when using TCP/IP) (0 [ms] Response Delay Return exception 06, Busy

Figure 59 Configure Modbus Slave Tool Parameters

Open the software "Modbus Poll", create a new Mbpoll window, click the menu bar Connection-Connection Setup, select Modbus TCP/IP as the communication port, fill in the device IP of KGW3204A and the port number set in step a for the remote address, and the Response Timeout setting value of the upper computer needs to be greater than the timeout set in the WEB page, and click OK.

Then click the menu bar Setup-Read/Write Definition to configure the device Address (Slave ID), Function code (function), starting address (address) and Quantity (quantity). Modbus Poll configuration parameters need to be consistent with Modbus Slave configuration parameters.



Figure 60 Configuring Modbus Poll Tool Parameters

After the above operations are completed, enter the numerical value in the data sending area of Modbus Slave tool to send, and you can see that the corresponding data can be received in the data receiving area of Modbus Poll tool, and the two-way communication of data is successful, as shown in the figure below.

	slave1] on Setup Display View Windo	ow Help 💶 🖉 💭	File Edit Conned	ction Setup Functions Di	isplay <u>V</u> iew <u>W</u> indow <u>H</u> elp _
					8
D = 1: F = 03			😂 🖬 🎒 🗙 1	🗂 呉 直 几 05 06 1!	5 16 17 22 23 TC 🖭 🤋 🕅
- 10		Tx =	55: Err = 22: ID =	= 1: F = 03: SR = 1000ms	
Alias	00000		2		
0	1		Alias	00000	
1	0	0		1	
2	0	1		0	
3	0	2		0	
4	0	3		0	
5	0	4		0	
6	0	5		0	
7	0	6		0	
8	0	7		0	
9	123	8		0	
		9		123	

Figure 61 Successful Communication between Modbus slave and Modbus Poll Tool

5.3.2 TCP Client mode

A. Configure PC-side parameters

The PC end uses USB to RS-232 serial communication line, and the serial end of the serial communication line is connected to the terminal of KGW3204A, which connects the PC with the device S1.

Open the software "Modbus Slave", create a new Mbslave window, click the menu bar Connection-Connection Setup, select Modbus TCP/IP as the communication port, IP Adress as the IP of the network port connected with KGW3204Al, and click OK after the configuration.

Then click the menu bar Setup-Slave Definition to configure the device Address (Slave ID), Function code (function), starting address (address) and Quantity.

Mbslave1 ID = 1: F = 03 Connection Secial Settings Connection OK Modeus TCP/IP Cancel Secial Settings COM4 B Data bits Flow Control DSR CTS RTS Stop Bit TCP/IP Server 9 IS: 1580, 250 9001	Mbslave1 Image: Control of the state of the
Arry Address IPv4 Ignore Unit ID IPv6 For Help, press F1. [192.168.0.250]; 21000	Not when using TCP/IP)

Figure 62 Configure Modbus Slave Tool Parameters

Open the software "Modbus Poll", create a new Mbpoll window, click the menu bar Connection-Connection Setup, and select Serial Port as the communication port. The parameters related to the serial port are configured to be the same as those of the device serial port S1. The Response Timeout setting value of the upper computer needs to be greater than the timeout set by the WEB page, and click OK.

Then click the menu bar Setup-Read/Write Definition to configure the device Address (Slave ID), Function code (function), starting address (address) and Quantity (quantity). Modbus Poll configuration parameters need to be consistent with Modbus Slave configuration parameters.

함 Modbus Poll - Mbpoll1 - [□ × 🕅 Modbus Poll - Mbpoll1 - □ ×
File Edit Connection Setup Functions Display View Window Help	File Edit Connection Setup Functions Display View Window Help
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Whispoilt Image: Connection Setup No connection OK 9 Serial Setings 1 Prodice Pc2203GT USB Serial COM Pot (COM1*) 9 Serial Setings 1 Prodice Pc2203GT USB Serial COM Pot (COM1*) 9 B Data bits 2 3 8 Delay Between Pols 1 Stop Bit 4 Advanced 10 [mail 7 Remote Modbus Server 1921680 111 Server Polt 20000 [mail 1921680 111 IPv6	Weipolit Image: State of the state of
For Help, press F1. Port 11: 9600-8-N-1	For Help, press F1. Port 11: 9600-8-N-1

Figure 63 Configuring Modbus Poll Tool Parameters

B. Configuring the Web console

Start KGW3204A, enter the IP address of the serial server in the browser, and enter the user

name and password to log in to the Web page.

Click "serial server"-"serial interface settings" in the navigation bar, select serial port 1, TCP Client for network mode and Modbus RTU for transmission mode, add a link, and the Slave Id, target IP and target port settings in the link are consistent with those in Modbus Slave tool settings, set serial port baud rate, data bits, check bits and stop bits, and click "Apply" to save.

ork	Path: Home >> Serial Se Serial Interface	rvers >> Serial In	terface							
plication er		SerialPort1			SerialPort2		SerialPort3		SerialPort4	
rial Servers rial Interface	Baud Rat	e	Date E	its Used	Parity		Stop Bits Used	Serial Frame bytes(0~1460)*	Character Interval(100~500ms) *	
atus Info	9600	~	8	~	None	v 1	✓ 0		500	
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/stem	Keepalive Tim		10							
AMMANNI .	Reconnect Tir		60							
	RTU Timeout(100-		1000							
	Slave Id *			Target Ip *			Target Port *	Local Tcp Po	ort	
	1			192.168.0.250			9001		· · ·	

Figure 64 Configuring a Web Page

After the above operations are completed, enter the numerical value in the data sending area of Modbus Slave tool to send, and you can see that the corresponding data can be received in the data receiving area of Modbus Poll tool, and the two-way communication of data is successful, as shown in the figure below.

	bll1 Setup Functions Display Vi 프 直 05 06 15 16	iew Window Help	Eile	Modbus Slave - M Edit <u>C</u> onnectior	ı <u>S</u> etup <u>D</u> isplay	<u>V</u> iew <u>W</u> indow <u>H</u> elp		×
Mbpoll1				Mbslave1				
Tx = 598: Err = 0: ID =	= 1: F = 03: SR = 1000ms		ID	= 1: F = 03				
Alias	00000			Alias	00000			
0	0		0		0			
1	0		1		0			
2	0		2		0			
3	0		3		0			
4	0		4		0			
5	0		5		0			
6	0		6		0			
7	0		7		0			
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-		J:						
For Help, press F1.	Port 11: 9600-8-N-1		For H	lelp, press F1.	[1	92.168.0.250]: 9001		

Figure 65 Communication between Modbus slave and Modbus Poll tool is successful.

5.3 Modbus Protocol Engineering Operation Case

A.KyPMT configuration protocol project

The configuration protocol project needs to be carried out in the integrated software KyPMT. Taking the Modbus protocol project as an example, the Modbus RTU acquisition service and Modbus RTU forwarding service are configured, and the specific operations are as follows:

- 1. New construction
 - a. New engineering and engineering space;
 - b. Click the project name, right-click to create a new project, and select the running platform NUC980 KPS3000.

F				
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<u>P</u> roject <u>S</u> ystem	<u>Management</u> <u>W</u> indows	Se <u>t</u> ting <u>D</u> evices <u>H</u> elp		
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🖃 🕨 Demo Wo	orkspace			
→ 1.0.0 → 2.0.0	b EDPS Project		×	
	Options			
	Workspace (*.ews) Project (*.epj)	Project Name	1	
	001	Modbus01 Version 2.0.0 -		
		Location		
		D:/Project/demo/Modbus01		
		Create new workspace		
		○ Add to current workspace		
			-	
	1			
		OK Cancel		
ProjectView	PluginView	1		
	,,			/

Figure 66 Creating a Project

- 2. New acquisition service
 - a. In the blank area of acquisition service, right-click to create a new one;
 - b. The new Modbus running port of the port group is a serial port, which needs to be consistent with the setting of the lower computer;
 - c. Set the frame type in the protocol parameters, and select RTU here;
 - d. Click on the device bus, right-click New, and set the device address, which needs to be consistent with the address of the lower computer;
 - e. New analog input;
 - f. Create a new status input.

Integrated Configuration Environmen	-		1								- 0
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orkspace 🗗	×E	Basic IO Va	ue								
System		Bay Name	Device Name	Point Name	Description	Function Code	Address	Start Byte	Priority	Data Length	Value Type
Client	1			AIO		3-Holding Re	0	0	Class 2	2	Unsigned Inte
Modbus01[modbusclient]	2			Al1		3-Holding Re	1	0	Class 2	2	Unsigned Inte
E 🔶 Port Group	3			AI2		3-Holding Re	2	0	Class 2	2	Unsigned Inte
- D CH.1[COM1]	4			AI3		3-Holding Re	3	0	Class 2	2	Unsigned Inte
— ♦ Protocol Parameter ► ♦ Device Bus	5			AI4		3-Holding Re	4	0	Class 2	2	Unsigned Inte
Device bus	6			A15		3-Holding Re	5	0	Class 2	2	Unsigned Inte
Analog Input	7			A16		3-Holding Re	6	0	Class 2	2	Unsigned Inte
🦳 〕 Digital Input — 〕 Counter	8			AI7		3-Holding Re	7	0	Class 2	2	Unsigned Inte
Analog Output	9			AI8		3-Holding Re	8	0	Class 2	2	Unsigned Inte
Digital Output	1	0		A19		3-Holding Re	9	0	Class 2	2	Unsigned Inte
Event											
5 Setting											
Server											
	-11										
Task	-11-										
EC61850 Client											
EC61850 Server											
IEC61850											
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Figure 67 Modbus Acquisition Service

3. New forwarding service

The setting steps of forwarding service are the same as those of collecting service.

5 Integrated Configuration Environment - [Mo	dbus01]										- 0	×
Project System Management Windows Set		p										
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III System	Bay Name	Device Name	Point Name	Description	Function Code	Address	Start Byte	Data Length	Value Type	Offset	Divisor	
Elient 1			AIO		3-Holding Re	0	0	2	Unsigned Inte	0	1	
III Server 2			Al1		3-Holding Re	1	0	2	Unsigned Inte	0	1	
B ModbusForward[modbusserver]			AI2		3-Holding Re	2	0	2	Unsigned Inte	0	1	
ModbusForward[modbusserver]			AI3		3-Holding Re	3	0	2	Unsigned Inte	0	1	
- D CH.1[COM2] 5			AI4		3-Holding Re	4	0	2	Unsigned Inte	0	1	
- Protocol Parameter			A15		3-Holding Re	5	0	2	Unsigned Inte	0	1	
⇒ Device Bus Final Stress of the second			AIG		3-Holding Re	6	0	2	Unsigned Inte	0	1	
Forward Analog Input Forward Digital Input			A17		3-Holding Re	7	0	2	Unsigned Inte	0	1	
- 📔 Forward Digital Input 🧧 9			AI8		3-Holding Re	8	0	2	Unsigned Inte	0	1	
- D Forward Counter	0		AI9		3-Holding Re	9	0	2	Unsigned Inte	0	1	
Forward Digital Output Task												
IEC61850 Client												
IEC61850 Server												
IEC61850												
ProjectView 🛛 🛃 PluginView												_

Figure 68 Modbus Forwarding Service

4. Download project

Click, download the project, and enter the user name edps and password yckyedps.

Note: For the specific configuration methods of Modbus, DNP, IEC101, IEC103, IEC104, DL/T654-1997, DL/T654-2007, Siemens S7, OPCUA and IEC61850, please refer to the protocol configuration manual under the help menu of KyPMT tools.

Note: Before this device is connected to a PC and communicates, please ensure that the firewall and security protection software on the PC are closed, otherwise the communication

connection may be abnormal.

B.Web page enables engineering

Enter the device IP in the browser, enter the device Web page, click the data acquisition-protocol project list, select the project named Modbus project, and click Enable to activate and run the protocol project;

+Application	Current Proj		Protocol Project List	Protocol D	river List
	Protoco	ol Project			
+User +Serial Servers			e device and status		
-Data Acquisition	Enable	Project Nam	ne	Action	
• Protocol Config OverView		101TO101	Start	Download	Delete
EDPS Upgrade EDPS Authorization		101TO103	Start	Download	Delete
+System		Modbus01	Start	Download	Delete
		modbus	Start	Download	Delete

Figure 69 Enabling Project

C. Software simulates the lower computer and the upper computer.

The PC end uses USB to RS-485 serial communication line, and the serial end of the serial communication line is connected with the terminal of the new generation gateway, which connects the PC with the serial port 1 of gateway equipment, that is, S1.

Open the software "Modbus Slave", create a new Mbslave window, click the menu bar Connection-Connection Setup, and select Serial Port as the communication port. The configuration parameters of serial port should be consistent with those of Modbus acquisition service, and click OK after configuration.

Then click the menu bar Setup-Slave Definition to configure the device Address (Slave ID), Function code (function), starting address (address) and Quantity. The configuration parameters of Modbus Slave need to be consistent with those of Modbus acquisition service.

Serial Port UK	File Edit Co Connection	Brown Carlo	×				Setup Display View Window	Help	
Mode Mode O0000 Inductor Cancel O0000 1 8500 Baud Image: Structure S	ID = 1: F = 0 No connectio	t ings			Mbslave1	Slave Defi	inition	1	
5 TCP/IP Server 0 4 I Hide Alias Columns PLC Addresses (Base 1) 0 6 IP Address Port 0 5 Error Simulation 0 7 I 27.0.0.1 5000 0 6 Skip response Insert CRC/LRC error 0 8 I proce Line II D IPP6 0 7 0 [ms] Response Delay Return exception 06, Busy 0	0 9600 Ba 1 8 Data b 2 None Pa 3 1 Store Fa	id ∨ Mode ● RTU ○ ASCII ts ∨ Flow Control ity ∨ □ DSR □ CTS □ 1 (mst BTS disc	S - 272	1 1 0 0	0 1 2 3	Address: Quantity: View Rows () 10	0 10 20 50 100 Fit to Qu	iantity	1 1 0
	5 TCP/IP S 6 IP.Addres 7 127.0.0. 8 ☑ Any A	s Idress () IPv4		0	7	Error Sirr	nulation response Insert CRC/	LRC error Ising TCP/IP)	0

Figure 70 Configure Modbus Slave Tool Parameters

The PC end uses USB to RS-485 serial communication line, and the serial end of the serial communication line is connected with the terminal of the gateway, which connects the PC with the serial port 2 of the gateway equipment, that is, S2.

Open the software "Modbus Poll", create a new Mbpoll window, click the menu bar Connection-Connection Setup, and select Serial Port as the communication port. The configuration parameters of serial port should be consistent with those of Modbus forwarding service, and click OK after configuration.

Then click the menu bar Setup-Read/Write Definition to configure the device Address (Slave ID), Function code (function), starting address (address) and Quantity (quantity). Modbus Poll configuration parameters need to be consistent with those of Modbus forwarding service.

	Connection	1	0 🖻 🖬 🕘	Read/Write Definition	× ? N?
Mbslave1 = 1: F = 0 connection	Lonnection OK Serial Port Cancel Serial Settings Cancel USB Serial Port (COM3) 9500 Baud	00000 1 1 0	Mbpoll1 Tx = 2566: Err 0 1 2	Slave ID: E OK Function: 03 Read Holding Registers (4x) ∨ Cancel Address: 0 Protocol address. E.g. 40011 → 10 Quantity: 10	× • • • • • • • • • • • • • • • • • • •
	1 Stop Bit V [ms] RTS disable delay	0	3	Read/Write Disabled Disable on error New	0
	TCP/IP Server IP.Address Port 127.0.0.1 ✓ 5000	0	6	Rows ● 10 ○ 20 ○ 50 ○ 100 ○ Fit to Quantity	0
	Any Address IPv4	0	8	Hide Alias Columns PLC Addresses (Base 1)	0

Figure 71 Configuring Modbus Poll Tool Parameters

After the above operations are completed, enter the numerical value in the data sending area of Modbus Slave tool to send, and you can see that the corresponding data can be received in the data receiving area of Modbus Poll tool, and the two-way communication of data is successful, as shown

in the following figure.

		ew Window Help				etup Functions D			
						토효 几 05 0	6 15 16 1	7 22 23 TC	R & K
Mbslave1		Mbslave2		Mbpol	11		🔛 Mbpo	oli2	
= 1: F = 03		ID = 1: F = 02		Tx = 899:	Err = 0: ID = 2	2: F = 03: SR = 10	Tx = 858	: Err = 0: ID = :	2: F = 02: SR =
Alias	00000	Alias	00000		Alias	00000		Alias	00000
)	123	0	. 1	0		123	0		1
	0	1	1	1		0	1		1
2	0	2	0	2		0	2		0
5	0	3	0	3		0	3		0
ł	0	4	0	4		0	4		0
5	0	5	0	5		0	5		0
5	0	6	0	6		0	6		0
7	0	7	0	7		0	7		0
8	0	8	0	8		0	8		0
2	0	9	0	9		0	9		0

Figure 72 Communication between Modbus slave and Modbus Poll tool is successful.

D.KyPMT observation information point

After the project is activated on the Web page, click the link on the KyPMT tool, enter the user name admin, and click OK to view the information such as the value, quality and update time of the information points in the collection service and forwarding service.

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orkspace		⊕ × Bas	ic IO Val	ue								
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Modbur	s01[modbusclient]	2			Al1		0	Online	2023-02-24	12:35:09.923		
- > Port		3			AI2		0	Online	2023-02-24	12:35:09.924		
- D c	CH.1[COM1]	4			AIS		0	Online	2023-02-24	12:35:09.924		
⇒ Proto	ocol Parameter	5			A14		0	Online	2023-02-24	12:35:09.924		
	ice Bus ModbusGather[Kyla	ndi 6			A15		0	Online	2023-02-24	12:35:09.924		
	Analog Input	7		2	AI6		0	Online	2023-02-24	12:35:09.925		
	Digital Input	8			AI7		0	Online	2023-02-24	12:35:09.925		
	Counter Analog Output	9			AI8		0	Online	2023-02-24	12:35:09.925		
	Digital Output	10			A19		0	Online	2023-02-24	12:35:09.925		
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I Server I Task I IEC61850 Cl I IEC61850 Se I IEC61850 ProjectView ent Type Event Event	ient erver v PluginView Date	Time	Name	Value	Application ·	<modbus01> st</modbus01>	tart successfully.		Descript	ion		
ii) Server ii) Task ii) IEC61850 Cli ii) IEC61850 Se ii) IEC61850 ProjectView vent	Setting	Time	Name	Value	Application · Application ·	<modbus01> st</modbus01>		sfully.	Descrip	ion		

Figure 73 KyPMT Acquisition Service

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System			Bay Name	Device Name	Point Name	Description	Value	Quality	Date	Time			
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Server		2			Al1		0	Online	2023-02-24	12:35:09.923			
ModbusForwar	17 11	3			AI2		0	Online	2023-02-24	12:35:09.924			
Port Group		rverj 4			AI3		0	Online	2023-02-24	12:35:09.924			
- D CH.1[CO		5			AI4		0	Online	2023-02-24	12:35:09.924			
 Protocol Parel Device Bus 		6			A15		0	Online	2023-02-24	12:35:09.924			
Device Bus		7			A16		0	Online	2023-02-24	12:35:09.925			
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	ward Digital Ir	put 9			AI8		0	Online	2023-02-24	12:35:09.925			
	ward Counter	10			AI9		0	Online	2023-02-24	12:35:09.925			
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Task E Task E IEC61850 Client EIEC61850 Server EIEC61850 ProjectView ent Type Event 202	PluginView Date	Time	Name	Value		S Service> start <modbus01> st</modbus01>	successfully.		Descrip	ion			
	PluginView Date 223-02-24	Time 12:34:48.528	Name	Value	Application ·		successfully.	sfully.	Descrip	ion			

Figure 74 KyPMT Forwarding Service

6 Mechanical Dimensions and Packaging

6.1 Mechanical Structure

	KPS/KGW3x0xA	KPS/KGW3224A series	KGW3204A 4G
Products	series		series
Shell	SECC electrolytic galvanized steel sheet	SECC electrolytic galvanized steel sheet and 6063 aluminum	SECC electrolytic galvanized steel sheet and AL5052
Protect grade	IP40	IP30 and above	IP30 and above
Installation mode	DIN rail or wall-mounted	Use four screws to fix the device to the vertical rails on both sides of the cabinet, and ensure that the grounding terminal of the device is in good contact with the cabinet grounding wire. The installation method is shown in the following figure:	DIN rail or wall-mounted

Table 38 Mechanical Structure Parameters	
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6.2 Dimensional Drawing

6.2.1 KPS/KGW310XA&320XA

Overall dimensions: KPS/KGW3101A: 123x90x30 mm

KPS/KGW3102A: 123x90x30 mm

KPS/KGW3204A: 150x92x30 mm

KPS/KGW3208A: 177x100x44 mm





Unit: mm Figure 75 Dimensions of KPS/KGW 3101a/3102a





Figure 76 KPS/KGW3204A Dimension Drawing







Figure 77 KPS/KGW3208A Dimension Drawing

6.2.2 KPS3224A/KGW3224A

Overall dimensions: 482.6x200x44 mm



Figure 78 KPS3224A/KGW3224A Dimension Drawing

6.2.3 KGW3204A-2T4D-232/485-4G-L17

Overall dimensions: 160x103x31 mm



Unit: mm Figure 79 KGW3204A-2T4D-232/485-4G-117 Dimension Drawing

6.3 Packing List

Product packaging includes the following accessories:

- > 1 device (4G gateway device includes 4G antenna)
- Packing list
- > Certificate

Note: The user manual can be obtained by QR code. If any of the above items are lost or damaged, please contact a sales representative.

6.4 Quality Assurance

Warranty period: 5 years