

User Manual

Version 1.2.4 December 2023

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GRP-530M GRP-540M Serial

3G / 4G Gateway



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Important Information

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year, beginning from the date of delivery to the original purchaser.

Warning

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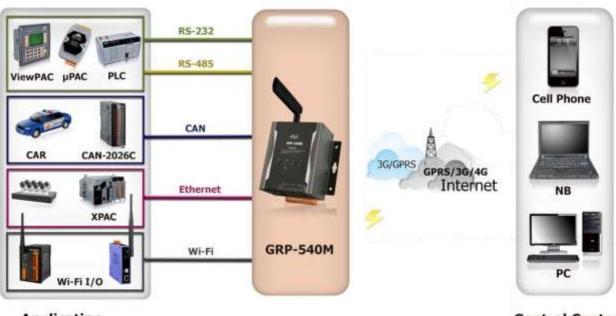
Contact us

If you encounter any problems while operating this device, feel free to contact us via mail at: service@icpdas.com. We guarantee to respond within 2 working days.

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1. Introduction

The GRP-530M / GRP-540M provided by ICP DAS is a 3G/4G gateway for Ethernet or serial port. With GPS function, it can also be a GPS tracking system. It can be used in M2M application fields to transfer the remote I/O, Modbus data or video of the camera via 3G/4G. Within the high performance CPU, the it can handle a large of data and are suit for the hard industrial environment. The GRP-530M / GRP-540M have 3G/4G module, Ethernet interface, CAN Bus, and GPS module.



Application

Control Center

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1.1 Features

- Support WCDMA 850/900/1900/2100 MHz and GSM 850 / 900 / 1800 / 1900 MHz. (GRP-530M)
- Support 4G/3G/2G (GRP-540M Serial)
- Support IEEE802.11b/g/n, 2.4 GHz (Only support GRP-540M-4GX-WF)
- ◆ 10/100 Base-TX compatible Ethernet controller
- COM port: COM1 (3-wire RS232), COM2 (3-wire RS232), COM3 (RS-485)
- Support CAN
- GPS : 32 channels with All-In-View tracking (option)
- Support Micro SD card.
- Provide 3G / 4G Router function.
- Support port mapping (port forward) function.
- Serial Port to 3G / 4G Gateway
- High reliability in harsh environments
- DIN-Rail mountable
- Support Dual SIM (GRP-541M only)

1.2 Applications

- ♦ 3G / 4G Router
- Home/Factory security
- Remote Video Monitor
- Energy Management
- Temperature Monitoring

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Application 1: 3G/4G Router



Application 2: Remote Video Monitor



Application 3: Remote Control (Serial Port to 3G/4G gateway)



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2. Hardware

2.1 Specifications (GRP-530M)

Item	GRP-530M	
System / Software		
3G Gateway	Ethernet and Serial port (RS-232 x1, RS-485 x1) to 3G	
Embedded service	Web Server, 3G Router	
System		
CPU	ARM CPU	
RAM	256 MB	
Flash	256 MB	
EEPROM	16 KB (Data Retention: 40 years; 1,000,000 erase/write cycles)	
Expansion Flash Memory	SD Card (Max. 32GB SDHC)	
RTC (Real Time Clock)	Provide seconds, minutes, hours, day of week/month, month and year	
64-bit Hardware Serial Number	Yes	
Watchdog Timer	Yes	
LED Indicator	4 LEDs (RUN/PWR, 3G, L1, L2)	
Rotary Switch	Yes (0~9)	
GSM System		
Frequency Band	GSM: 850/900/1800/1900 MHz	
GPRS connectivity	GPRS class 12; GPRS station class B	
3G System		
Frequency Band	WCDMA 850/900/1900/2100 MHz	
Data Transmission	WCDMA / HSPA+ Download: Max. 14.4Mbps; Upload: Max 5.76Mbps	
GPS System		
Support Channels	32	
Protocol Support	NMEA 0183	
Comm. Interface		
Ethernet	RJ-45, 10/100/1000 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)	
COM1	RS-232 (RxD, TxD and GND); Non-isolated (Console, Debug)	
COM2	RS-232 (RxD, TxD and GND); Non-isolated	
COM3	RS-485 (D2+, D2-); 3000 VDC isolated	
CAN	CAN Bus (CAN_H, CAN_L)	
Mechanism		
Casing	Matel	
Dimensions(W x L x H)	117 mm x 126 mm x 58 mm (W x L x H)	
Installation	DIN-Rail / Screw	
Power		

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Protection	Power reverse polarity protection
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot
Required Supply Voltage	+10 V _{DC} ~ +48 V _{DC}
Power Consumption	4.8W (200 mA @ 24 V _{DC})
Environment	
Operation Temp.	-25°C to 75°C
Storage Temp.	-30°C to 80°C
Humidity	5~95% non-condensing

2.2 Specifications (GRP-540M Serial)

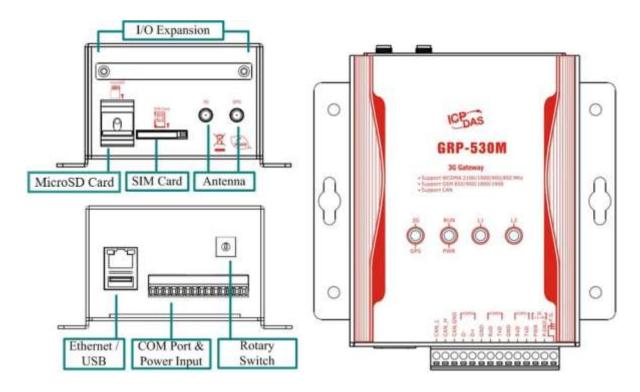
Item	GRP-540M-4GE GRP-541M-4GE	GRP-540M-4GE-WF	GRP-540M-4GC GRP-541M-4GC	GRP-540M-4GC-WF
Software				
Gateway Function	Ethernet and Serial port (RS-232 x1, RS-485 x1) to 3G/4G			
Embedded service	Web Server, Rou	uter function		
System				
CPU	ARM CPU			
EEPROM	16 KB (Data Ret	ention: 40 years; 1,0	00,000 erase/write	cycles)
Expansion Flash Memory	SD Card (Max. 3	2GB SDHC)		
RTC (Real Time Clock)	Provide seconds	, minutes, hours, day	/ of week/month, m	onth and year
64-bit Hardware Serial Number	Yes			
Watchdog Timer	Yes			
LED Indicator	4 LEDs (RUN/P\	VR, 4G, L1, L2)		
Rotary Switch	Yes (0~9)			
GSM System				
Frequency Band	GSM: 850/900/1800/1900 MHz			
GPRS connectivity	GPRS class 12/10; GPRS station class B			
DATA GPRS	Downlink transfer: Max. 85.6 kbps; Uplink transfer: Max 42.8kbps			
3G System				
Frequency Band (MHz)	WCDMA 850/900/2100		WCDMA 900/210 TD-SCDMA 1900 CDMA2000 (BC0	/2100
Data Transmission	DC-HSPA+ Download: Max. 42 Mbps; Upload: Max 5.76Mbps TD-SCDMA Download: Max. 4.2 Mbps; Upload: Max 2.2Mbps CDMA2000 EVDO Download: Max. 14.7 Mbps; Upload: Max 5.4Mbps			
4G System				
Frequency Band	FDD LTE: B1/B3	/B5/B7/B8/B20	FDD LTE: B1/B3/ TDD LTE: B38/B3	-
Data Transmission	Download Max 100Mbps / Upload Max 50Mbps			
GPS System				
Support Channels	32			
Protocol Support	NMEA 0183			
Comm. Interface				

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Ethernet RJ-45, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)				
Wi-Fi	N/A	IEEE802.11b/g/n, 2.4 GHz, channel 1-13 (2.412 GHz - 2.472)	N/A	IEEE802.11b/g/n, 2.4 GHz, channel 1-13 (2.412 GHz - 2.472)
COM1	RS-232 (RxD, TxD	and GND); Non-iso	plated (Console, De	bug)
COM2	RS-232 (RxD, TxD	and GND); Non-iso	plated	
COM3); 3000 VDC isolate	d	
CAN	CAN Bus (CAN_H, CAN_L)			
Mechanism				
Casing	Casing Metal			
Dimensions(W x L x H) 117 mm x 126 mm x 58 mm (W x L x H)				
Installation	DIN-Rail / Screw			
Power				
Protection	Power reverse pol	arity protection		
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot			
Required Supply Voltage	+10 V _{DC} ~ +48 V _{DC}			
Power Consumption	4.8W (200 mA @ 24 V _{DC})			
Environment				
Operation Temp.	-25°C to 75°C			
Storage Temp.	-30°C to 80°C			
Humidity	Humidity 5~95% non-condensing			

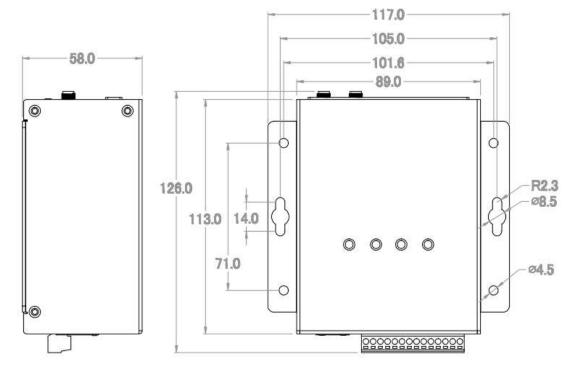
2.3 Appearance and pin assignments



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COM Port & Power Input				
Terminal No.		Pin Assignment		
	14	F.G.		
Power	13	P.GND		
	12	PWR		
	11	TxD1		
COM1	10	RxD1		
	09	GND		
	08	TxD2		
COM2	07	RxD2		
	06	GND		
COM3	05	D+		
COMS	04	D-		
	03	CAN.GND		
CAN	02	CAN_H		
	01	CAN_L		

2.4 Dimensions



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2.5 LED indicators

There are three LED indicators to help users to judge the various conditions of device. The description is as follows :

A.PWR(Green) : Power LED to indicate whether the external power is input or not. The

description is as follows:

The external power is active	The external power is not active
on	off

B.RUN(Red) : RUN LED indicates if the OS is normal or fail.

Normal	Fail
Heart beat (1 sec.)	Always ON or OFF

C.L1(Green/Red) : this Led indicates the status of RTU Client.

Normal	Fail	
500ms ON / 500ms OFF	Always ON or OFF	

D.L2(Green/Red) : reserve.

E.3G (Red) : The LED indicates the status of 3G module.

(the 3G/4G module need about 60 seconds to register network usually)

Registered	3G/GPRS data transmit	Not Register
800ms ON / 200ms OFF	200ms ON, 200ms OFF	200ms ON / 800ms OFF

2.6 Rotary Switch

There are some functions of rotary switch. The description is as follows :

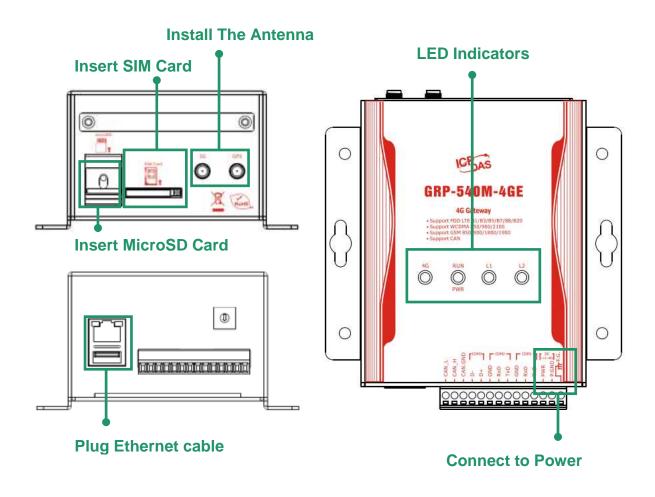
- A. 0: Normal mode, default position:
- B. 9 : Factory default IP. If you set as 9, and then reset the device, its Ethernet IP will be "192.168.255.1". If you forgot your device IP, you can use this function to re-configure your device IP.

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2.7 Installing Device

Before using, please follow these steps to install the device below:

- A. Install the antenna
- **B**. Plug in the normal SIM card (Before apply the SIM card, confirm it is OK by mobile phone.)
- C. Plug the Ethernet cable if you need it.
- D. If you want to use the Micro SD card, please insert it into the slot.
- E. Connect the DC.+VS and DC.GND to the power supply.
- F. It is needed to wait about 20 ~ 30 seconds for OS booting. After finishing the process, the device would be in normal operation mode and the OS LED would blank as heart beat per 1 sec.
- **G**. It is needed to wait about 30 ~ 60 seconds to search the 3G/4G base station and register to the ISP. After finishing the process, the 3G LED would blank per 1 sec.



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3. Web Utility

You must configure the device from web utility before using.

3.1 Login the Utility

Please login before you use the web utility. The default username is "admin", and the default password is "admin"

Default IP = "192.168.255.1"

Default Mask = "255.255.0.0"

After login, the screenshot is showed as below:

Ethernet		
Mode	static	
MAC address	68:c9:0b:7c:37:89	
IP Address	192.168.255.1	
Mask	255.255.0.0	

WLAN information		
Mode	Closed	

	Mobile Network information	
Status	connected	
IP Address	10.97.25.192	
P-t-P	10.64.64	

	Modem information	
IMEI	861075022019632	
PIN Code	+CPIN: READY	
Register Status	Registered	
Signal Quality	68%	

GPS information		
GPS Status	GPS is ready, @(22.6202772833, 120.30106635)> <u>show map</u>	
GPS Data	\$GPRMC,012958.0,A,2237.216637,N,12018.063981,E,0.0,84.8,150917,,A*5A	

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3.2 Information

You can get the basic information of the device here.

3.2.1 Device Information

This page provides basic device information:

Device Information		
Serial Number 36B360810000		
Kernel Version	3.2.14	
Firmware Version GRP-530M_V1.1.2_20161026		

(1) Product Name: the Name of your product

(2) Serial Number: only one number of ICPDAS product

(3)OS Kernel Version: linux kernel version.

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3.2.2 Network Information

This page provides basic network information:

Ethernet		
Mode	static	
MAC address	68:c9:0b:7c:37:89	
IP Address	192.168.255.1	
Mask	255.255.0.0	

WLAN information		
Mode	Closed	18

	Mobile Network information	
Status	connected	
IP Address	10.97.25.192	
P-t-P	10.64.64.64	

ſ	Modem information	1
IMEI	861075022019632	
PIN Code	+CPIN: READY	
Register Status	Registered	
Signal Quality	68%	

GPS information		
GPS Status	GPS is ready, @(22.6202772833, 120.30106635)> <u>show map</u>	
GPS Data	\$GPRMC,012958.0,A,2237.216637,N,12018.063981,E,0.0,84.8,150917,,A*5A	

(1) Ethernet: Ethernet information

- · Mode: static IP
- \cdot MAC address: a unique identifier assigned to network interfaces.
- · IP Address: a computer's address under the Internet Protocol
- \cdot Mask: Mask will be provided from Gateway provider.
- (2) WLAN information (only support GRP-540M-4GX-WF): AP Mode & Station Mode <u>AP Mode:</u>

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- · Mode: AP
- \cdot SSID: the name shows up in Wi-Fi station
- · MAC address: a unique identifier assigned to network interfaces
- \cdot IP Address: the IP address which is set by user
- \cdot Mask: the Mask which is set by user
- Security: the mode of AP's security. Please refer to below: No security: any Wi-Fi stations can access this AP without password
 WPA2-PSK: use WPA2-PSK security mode, Wi-Fi stations use password to access
- \cdot Password: only show out with WPA2-PSK security mode

Station Mode:

- Mode: Station
- \cdot Connected SSID: the AP which is connected by this station
- · MAC address: a unique identifier assigned to network interfaces
- IP Configure: use which method to get IP address. Please refer to below:
 Static: user can set IP address, Mask, and Gateway by himself
 DHCP: get IP address, Mask, and Gateway from AP's DHCP server
- · IP Address: the station's address under the Internet Protocol
- · Mask: Mask will be provided from AP provider
- \cdot Status: the connection status. Please refer to below:
- Connected: this station already connected to remote AP successfully
- Connecting: this station is trying to connect with remote AP
- · Signal Level (dbm): close to 0 dbm is better, but 0 dbm means still try to connect
- (3) Mobile Network information: the information will show out after dial up
 - \cdot Status: "connected" mean the modem dial-up success.
 - · IP Address: the IP is provide by ISP provider.
 - · P-t-P: provide by ISP provider.
 - \cdot IP Address for VPN: the IP is provide by VPN Server.
 - · P-t-P for VPN: provide by VPN Server.
- (4) Modem information:
 - · SIM Select: The SIM which has been used now. (Only show up in GRP-541M)
 - · IMEI: IMEI number of 4G module.

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• PIN Code: the status of PIN Code. Please refer to below:

READY: PIN Code is ready.

SIM PIN: need PIN code of SIM card

SIM PUK: need PUK code of SIM card

- SIM failure: Access SIM Card failure
- · Register Status: Indicating machine connect to mobile network successful or not.
- · Signal Quality: the 3G/4G signal quality.
- (5) GPS Information
 - \cdot GPS Status: the status of GPS. Please refer to below.
 - GPS is ready: Click "Show Map" to show the location of the GRP device.
 - No GPS data: Unable to locate.
 - · GPS Data: \$GPRMC data of the GRP device.

3.2.3 Storage Information

This page provides information about "Micro SD card", "USB Disk":

USB Disk	
Size	3936220 KB
used	2584 KB
Available	3933636 KB
Path (Mount Point)	/media/usbhd-sda1

Micro SD Card	
Size	31154688 KB
used	25344 KB
Available	31129344 KB
Path (Mount Point)	/media/mmcblk0p1

(1) USB Disk / SD card:

- · Size: total size of storage
- \cdot used: the size is used
- · Available: free space in the storage
- \cdot Path: the mount point in file system.

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3.3 Network

The user can configure the Network functions here.

3.3.1 Ethernet

This page provides the basic settings of Ethernet:

Ethernet	
IP Address	192.168.27.31
Mask	255.255.0.0
Gateway	192.168.0.254
Modify	

- (1) IP Address: IP of Ethernet.
- (2) Mask: the Mask of the gateway.
- (3) Gateway: IP of the gateway.

3.3.2 WLAN (only support GRP-540M-4GX-WF)

This page provides the basic settings of Wi-Fi ap mode or station mode:

AP Mode:

AP Mo	ode	Station Mode
IP Address	10.10.0.1	
Mask	255.255.255.0	
Network	10.10.0.0	
SSID	icpdas-ap	
Channel	6	(Channel 1~14)
Security	WPA2-PSK V	
Password	1234567890	(8~64 characters)
Enable Function	Enable	
	Modify	
(1):The Wi-Fi will rebox (2):Remember to check (2):Make sure Wi-Fi dev		

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- (1) IP Address: IP of this Wi-Fi AP.
- (2) Mask: the Mask of this Wi-Fi AP.
- (3) Network: the Network of this Wi-Fi AP.
- (4) SSID: the name of this Wi-Fi AP.
- (5) Channel: the channel of this Wi-Fi AP.
- (6) Security: set no security or WPA2-PSK security mode.
- (7) Password: if use WPA2-PSK, need to set password for 8~64 characters.

Station Mode:

AP Mo	ode	Station Mode
AP's SSID	None	
AP's Password	None	
IP Configure	Static 🔹	
IP Address		
Mask		
Gateway		
Enable Funcion	Enable	
	Мос	lify
(1):Need to wait for com (2):Remember to check		

- (1) AP's SSID: the name of remote Wi-Fi AP.
- (2) AP's Password: the password of remote Wi-Fi AP.
- (3) IP Configure: use Static or DHCP method to get IP address
- (4) IP Address: if use Static mode, set IP of this Wi-Fi station.
- (5) Mask: if use Static mode, set Mask of this Wi-Fi station.
- (6) Gateway: if use Static mode, set Gateway of this Wi-Fi station. (if already have default gateway for 3G/4G, the default gateway for Wi-Fi station will be deleted)

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3.3.3 PIN / APN Configure

This page provides basic settings of 3G/4G network:

GRP-530M/GRP-540M:

PIN / APN Configure	
PIN Code	0000
Phone Number	*99***1# (1)
APN	internet (2)
User Name	(2)
Password	(2)
Modify	
 (1):usually use *99# or *99***1# (2):please ask your SIM Card provider 	

GRP-541M:

	PIN / APN Co	nfigure	
	SIM 1		
PIN Code	0000		
Phone Number	*99***1#	(1)	
APN	internet	(2)	
User Name		(2)	
Password		(2)	
	SIM 2		
PIN Code	0000		
Phone Number	*99***1#	(1)	
APN	internet	(2)	
User Name		(2)	
Password		(2)	
Enable Dual SIM	Enable		
	Modify		
(1):usually use *99# or * (2):please ask your SIM			

(1) PIN Code: PIN Code are 4 character number provided by SIM Card provider

(2) Phone Number: usually fill it as "*99***1#" or "*99#". It depends on SIM Card provider

- (3) APN: Access Point Name, please ask your SIM Card provider.
- (4) User Name: the username for dial-up. Please ask your SIM Card provider.
- (5) Password: the password for dial-up. Please ask your SIM Card provider.
- (6) Enable Dual SIM: Default is using SIM1. If enable this function, the SIM card will be auto changed to another when the network is reconnecting. (Only show up in GRP-541M)

3.3.4 Network Reconnection

This function can keep the device always on mobile network, but it will send the IMCP signals to check mobile network.

The default setting is "Enable" to keep device always online.

Network Reconnection	
Server IP	8.8.8.8
Max. Retry	5
Retry Interval Time	30
Enable Funcion	🖉 Enable
Modify	
 (1):This function will run immediately after you press "Modify" button (2):GSM module will be reset after Max. retry (3):System will reboot after GSM module reset 100 times 	

- (1) Server IP: the target IP or URL that you want to send signal (ping the target IP).
- (2) Max. Retry: if the system retry time is over this number, it will reset 3G/4G modem and dial-up to try again.
- (3) Interval Time: the interval time between this retry and last.
- (4) Enable Function: if you enable this function, it will run immediately.

3.3.5 DNS

The user can set DNS server IP here:

DNS Server	
Primary DNS Server	168.95.1.1
Alternate DNS Server	8.8.8.8
Modify	

- (1) Primary DNS Server: the device will use it to get DNS service first.
- (2) Alternate DNS Server: if "Primary DNS Server" is invalid, the device will use "Alternate DNS Server".

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3.3.6 DDNS Client

DDNS is a method of updating, in real time, a Domain Name System (DNS) to point to a changing IP address on the Internet:

DDNS Configure		
Server	default@no-ip.com	
Domain Name	yourDomain.no-ip.org	
Username	yourUserName	
Password	yourPassword	
Period	0 seconds, 0 to disable function	
Modify		

- (1) Server: the address of DDNS service provider.
- (2) Domain: The domains name you registered.
- (3) Username: the username of DDNS service.
- (4) Password: the password of DDNS service.
- (5) Period: the period time (seconds) to update address, fill in 0 to disable the function.

3.3.7 VPN (only support the firmware after v1.2.1)

User can set VPN with **PPTP protocol** and use DDNS or FTP to get the VPN IP:

VPN Configure		
VPN Server	vpnServerIP	
VPN Username	yourUserName	
VPN Password	yourPassword	
DDNS	Enable V	
DDNS Server	dynupdate.no-ip.com 🔻	
DDNS Domain Name	yourDomain.no-ip.org	
DDNS Username	yourUserName	
DDNS Password	yourPassword	
DDNS Period	60	
FTP	Enable •	
FTP Server	ftpServerIP	
FTP Port	ftpServerPort	
FTP Username	yourUserName	
FTP Password	yourPassword	
FTP File Name	vpn_ip.txt	
FTP Period	60	
FTP Passive Mode	Enable	
VPN Enable	Enable	
	Modify	
(1):The VPN of GRP uses	DDTD protocol	

(1) VPN Server: the address of VPN service provider.

(2) VPN Username: the username of VPN service.

(3) VPN Password: the password of VPN service.

DDNS:

(1) DDNS Server: the address of DDNS service provider.

- (2) DDNS Domain Name: The domains name you registered.
- (3) DDNS Username: the username of DDNS service.

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- (4) DDNS Password: the password of DDNS service.
- (5) DDNS Period: the period time (seconds) to update your address.

FTP:

- (1) FTP Server: the address of FTP service provider.
- (2) FTP Port: the port of FTP service provider.
- (3) FTP Username: the username of FTP service.
- (4) FTP Password: the password of FTP service.
- (5) FTP File Name: the file in the server to save your address.
- (6) FTP Period: the period time (seconds) to update your address.
- (7) FTP Passive Mode: enable the passive mode.

3.3.8 DHCP Server

DHCP Server		
Ethernet Subnet	192.168.255.0	
Ethernet Netmask	255.255.255.0	
Ethernet Router	192.168.255.1	
Ethernet Range	192.168.255.100 ~ 192.168.255.125	
WLAN Subnet	10.10.0.0	
WLAN Netmask	255.255.255.0	
WLAN Router	10.10.0.1	
WLAN Range	10.10.0.100 ~ 10.10.0.125	
Enable	□ Enable	
Modify		

- (1) Ethernet Subnet: The DHCP server subnet of the Ethernet interface.
- (2) Ethernet Netmask: The DHCP server mask of the Ethernet interface.
- (3) Ethernet Router: The router IP of the Ethernet interface.
- (4) Ethernet Range: Dynamic IP range of the Ethernet interface.
- (5) WLAN Subnet: The DHCP server subnet of the Wi-Fi interface.
- (6) WLAN Netmask: The DHCP server mask of the Wi-Fi interface.
- (7) WLAN Router: The router IP of the Wi-Fi interface.
- (8) WLAN Range: Dynamic IP range of the Wi-Fi interface.

3.3.9 Routing & Port Mapping (Port Forward)

ROUTING Rule			
Rule NO.	IP	Mask	Target
0	192.168.27.1	24 💌	ppp0 💌
1			~
2			~
3			~
4			~
5			~
6			~
7			~
8			~
9			~

This page provides routing rule & Port Forward configuration.

• Routing Rule

- (1) IP: IP address.
- (2) Mask: the mask will effect how many IP this rule manages.

"24" = 255 IPs, "28" = 16 IPs, "32" = 1 IPs.

(3) Target: the target interface of the rule.

For example:

The Rule 0: This rule will push the socket packages from the address 192.168.27.1 ~ 192.168.27.255 forward to "ppp0" (3G network).

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Port Mapping Rule					
Rule NO.	Туре	From	Port	Target IP	Target Port
0	TCP 💌	ppp0 💙	10080	192.168.27.140	80
1	~	~			
2	~	~			
3	~	~			
4	~	~			
5	~	~			
6	~	~			
7	~	~			
8	~	~			
9	~	~			
Modify					

Routing Rule

- (1) Type: the protocol type. There are "TCP" and "UDP"
- (2) From: the interface that the socket comes from."ppp0" is 3G interface.
- (3) Port: the port that the socket comes from.
- (4) Target IP: the IP that the socket goes forward.
- (5) Target Port: the Port of the "Target IP".

For example:

The Rule 0: This rule will bind the socket from the "ppp0" and Port="10080" with 192.168.27.140:80.

3.3.10 Diagnostic

This page provides the tools to check the problem of the network.

Ping Test		
Target IP	8.8.8.8	
Result		
ping		

Traceroute		
Target IP	8.8.8.8	
Result		
traceroute		
This function will take time more than 2 minute.		

	Route Information	
Result		
route		

- (1) Ping Test: this tool will ping "Target IP", and show result below.
- (2) Traceroute: this tool will trace routing path to "Target IP", and show the result below.
- (3) Route Information:: this tool will show route setting below.

3.3.11 Reset Network

If user forgets how to set routing, this page provides to reset all of Ethernet, WLAN, DHCP Server, and ROUTING Rule configure.

	Notice!!	
It will reset your Ethernet, V	re you sure to reset network? WLAN, DHCP Server, and ROU? for system rebooting after you pre	
	Reset	
(1):The default Ethernet IP is 19 (2):The default WLAN IP is 10.		

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3.4 System

The user can configure "password", "system parameter", reboot the device and restore factory settings here.

3.4.1 Password

The user can change the password of the web utility here.

Change Password		
New Password		
Confirm		
Modify		
The length of password must be more then 4 characters that limited in a~z, A~Z, 0~9.		

- (1) Password: new password.
- (2) Confirm: confirm the password again.

3.4.2 Reboot

The user can reboot the device here.

Notice!!	
Are you sure to reboot? plese wait a minute for system rebooting after you press reboot button.	
Reboot	

3.4.3 Reboot Timer

The user can use this function to reboot system automatically.

Reboot Timer (Reboot system automatically)			
Reboot Time (everyday)	0 : 0 (hour:minute)		
Enable Funcion	Enable		
Modify			
(1):This function will run immediately after you press "Modify" button			

- (1) Reboot Time (everyday): the time for rebooting system.
- (2) Enable: Enable Reboot Timer function.

3.4.4 Backup & Restore

The user can backup the device settings and restore it here.

Backup & Restore		
Backup Backup		
Restore	瀏覽… Restore	

- (1) Backup: Press "Backup" button to backup settings into your PC.
- (2) Restore: Press "Browse" button to select file, and then press "Restore" button to store your settings.

3.4.5 Update (only support the firmware after v1.2.1)

The user can update the device's firmware by themself. Need to go to the product page and download the update file (updateFile.tarc). Must put the update file into SD card and backup your config before update.

Update		
Are you sure to update? It may reset some configure file.		
	Update	
 (1):Must put "updateFile.tarc" file in SD card. (2):Need to wait several minutes for update. (3):It will reboot after update. 		

3.4.6 Restore Factory

The user can restore the device setting to factory default.

Restore Factory Setting	
The device will reboot after restoring factory settings.	
Restore	

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3.4.7 Time

This page provide information about the time of the device.:

Time Configure			
Device Time (24-hour)	2015 / 11 / 06 10 23 38 Set Time		
NTP Server (Time Server)	tock.stdtime.gov.tw Ex: tock.stdtime.gov.tw		
Timezone	+8 v check timezone		
Enable NTP Funcion			
Modify			

- (1) Set Time: set the time of device the same as your computer.
- (2) NTP Server: device will connect to the NTP Server to synchronize time.
- (3) Timezone: if you do not know your timezone, please click the link "check timezone" to find out.
- (4) Enable NTP Function: if you enable it, the device will update time automatically.

3.5 VxServer

The user can configure VxServer firmware here.

3.5.1 VxServer

The user can configure VxServer firmware here.

Virtual COM Function (VxServer)			
Server IP	192.168.12.2		
Server Port	11000 default=11000		
Heartbeat Time	10 10~65535 seconds		
Device ID	1	1~255, unique ID for device	
Alias	GRP-530 Max. Length = 8		
Time Interval	50 1~5000 ms, default=50		
Data Length	1000	10~1000 bytes, default=1000	
Modbus TCP to RTU (Port1)	Enable, COM2> TCP Port 10001		
Modbus TCP to RTU (Port2)	Enable, COM3> TCP Port 10002		
Default Baudrate (Port1)	115200 🖌 bps		
Default Baudrate (Port2)	115200 🖌 bps		
Default Format (Port1)	8N1 🔽 (Data bit, Parity, Stop bit)		
Default Format (Port2)	🛚 🛚 🖬 N1 🔽 (Data bit, Parity, Stop bit)		
Enable Funcion	Enable		
Firmware Version	v1.0.0		
Modify			
(1)Heartbeat Time: if this value is small, it is sensitive to detect network disconnected (2)Virtual IP: please set it different from other virtual COM device			

- (1) Server IP: Server IP or URL.
- (2) Server Port: the port of the server.
- (3) Heartbeat Time: if setting this value small, it is sensitive to detect network disconnected.
- (4) Device ID: ID of the device. If you set it as "1", you will find that "visual IP" is "127.53.0.1" on the server side.
- (5) Alias: an alias of device. Max. length is 8 characters.

- (6) Time Interval: if the Time Interval between the two serial port data is more than this value, the data will be sliced into two network packet. And if there is no enough time interval, but data length is over 1000 bytes (default value), the data still be sliced into two network packet.
- (7) Data Length: if serial port data length is over this value, the data will be sliced into two packets. Usually you just set this value as 1000 if you don't need this function. (this value is limited by network protocol)
- (8) Modbus TCP to RTU: Modbus/TCP to Modbus/RTU gateway function. Port1 is COM2 of the device (RS-232); Port2 is COM3 of the device (RS-485).
- (9) Default Baudrate: this value is dependent on your Modbus RTU device. Please set this value is the same as your Modbus RTU device.
- (10) Default Format: configuration of "Data bits", "Parity" and "Stop bit".
 - 8, 7 mean 8 or 7bits of Data bits
 - N, O, E mean None, Odd, Even of Parity
 - 1, 2 mean 1 or 2 bits of Stop bit
- (11) Enable Function: Enable the firmware immediately.

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3.6 RTU Client

The user can configure RTU Client function here. The RTU Client function will connect to RTU Center, please refer the website for more information.

3.6.1 RTU Client

The user can configure RTU Client firmware function here. There are three tabs:

(1) Main Info. (2) Modbus Number (3) FTP/Email

Main Info.	Modb	ous Device	FTP / Email
Server Address		192.168.12.2	
Server Port		10000	default=10000
Station ID		1	1~65535
Data Update Period(se	ec.)	3	0~86400 (0=disable)
Heartbeat Period(sec.)	0	1~86400 (a day)
Baud Rate (RS-485 fo Modbus/RTU)	r	9600 🔽 bps	
Data Bit		8 🕶	
Parity		N 🕶	
Stop Bit		1 🛩	
Modbus Timeout (ms)		1000 default=1000	50~99999,
Enable Firmware		Enable	
Firmware Version		v1.0.0	
		Modify	

Main Info. Tab:

- (1) Server Address: Server IP or Domain Name.
- (2) Server Port: the port of the server.
- (3) Station ID: the ID for this device. (do not be the same with other RTU device)
- (4) Data Update Period (sec.): set report time interval. The device will report all data to RTU Center every interval time your setting.
- (5) Heartbeat Period (sec.): set heartbeat time interval. 3G/GPRS connection will be

terminate by ISP, this parameter can detect broken connection early. "Heartbeat Period" must be smaller than "Data Update Period".

- (6) Baud Rate (RS-485 for Modbus/RTU): the baud rate of the RS-485 (COM3).
- (7) Data bit: the data bit of RS-485.
- (8) Parity: the parity bit of RS-485.
- (9) Stop bit: the stop bit of RS-485.
- (10) Modbus Timeout (ms): the Timeout value of Modbus.
- (11) Enable Function: enable the RTU Client function.

■ Modbus Device: the interface for adding Modbus I/O device.

Main Info.	Modbus Number	Email/FTP
Modbus Device Number : 1 1 Name : Custom	Add	Custom Edi ET-7002
		ET-7015 ET-7016 ET-7017 ET-7017-10 ET-7018 ET-7019

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Main Info.	Mo	odbus Device Email/FTP
Modbus Device Num	iber:0	Add ET-7050 🔻
1 Name :		Edit Delete
Device Name	ET-7050	Max Length=20
Device ID	1	1~255
P	192.168.11.25	empty for Modbus/RTU
Port	502	Default=502, 1~65535
DI Number	12	0~32
DO Number	6	0~32
AI Number	0	0~16
AO Number	0	0~16
DI Address	0	0~65535
DO Address	0	0~65535
AI Address	0	0~65535
AO Address	0	0~65535
Modify Cancel		

- Modbus Device Number: display the modbus device number here.
 You can choose a model in the list, and then use the "Add" button to add a new modbus device.
- (2) Device Name: the Name of the modbus device. This Name will be showed in RTU Center.
- (3) Device ID: the modbus ID.
- (4) IP: the IP of modbus/TCP device. Keep it empty for Modbus/RTU device.
- (5) Port: the Port number of modbus/TCP device.
- (6) DI Number: the number of DI channel.
- (7) DO Number: the number of DO channel.
- (8) AI number: the number of AI channel.
- (9) AO number: the number of AO channel.

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- (10) DI Address: the start address for reading DI value.
- (11) DO Address: the start address for reading DO value.
- (12) AI Address: the start address for reading AI value.
- (13) AO Address: the start address for reading AO value.

■ FTP / Email:

This function will send back all I/O data log file automatically. The period time to send is depending on "Max. Time per Log File (hour)" parameter.

Main Info.		Modbus Device	FTP / Email
Data Log Interval (sec.)		5	0~86400 (0=disable)
Max. Time per Log File (m	iin.)	3	3~1440 minutes
FTP Server Address		61.219.167.34	empty> disable FTP
FTP Port		221	default=21
FTP Username		test	
FTP Password		test	
Enable FTP Funcion		🗹 Enable	
Email From		abc@gmail.com Ex: abc@gmail.com	empty> disable Email
Email To		xyz@gmail.com	Ex: xyz@gmail.com
Email To Example for 2 or more con	tact	xyz@gmail.com xx@gmail.com,yy@gmail.co	
	tact		
Example for 2 or more con	tact	xx@gmail.com,yy@gmail.co	om
Example for 2 or more con Email Server	tact	xx@gmail.com,yy@gmail.co	om Ex: smtp.gmail.com
Example for 2 or more con Email Server Email Server Port		xx@gmail.com,yy@gmail.co smtp.gmail.com 25	om Ex: smtp.gmail.com Ex: 25
Example for 2 or more con Email Server Email Server Port Email Username		xx@gmail.com,yy@gmail.co smtp.gmail.com 25 abc	om Ex: smtp.gmail.com Ex: 25 Ex: abc

- Data Log Interval (sec.): the time interval to record I/O data to logger file. Set as "0" to disable all function in this tab.
- (2) Max. Time per Log File (min.): the time interval to change log file and send log file via Email or FTP. it will change logger file before the file be over 3 MB, and move old logger

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file into "LOGFILE" folder, and send out the file at the same time.

If you enable FTP or Email function, it will copy old log file into "FTP_UPLOAD" and "MAIL_UPLOAD" for sending out files.

If send FTP or Email logger file fails, it will send files next time.

- (3) FTP Server Address: FTP Server IP or Domain Name.
- (4) FTP Port: the port of the FTP server.
- (5) FTP Username: username for login
- (6) FTP password: password for login
- (7) Enable FTP Function: enable FTP report function.
- (8) Email From: the email will be sent from this address.
- (9) Email To: the email address that will receive logger file. Using "," to separate each mail address

Example:

for single receiver: xxx@gmail.com

for multi-receiver: xxx@gmail.com,yyy@gmail.com

- (10) Email Server: the server address of the email server.
- (11) Email Server Port: the server port of the email server. Usually it will be 25, 465, or 587.
- (12) Email Username: the username of your email account.
- (13) Email Password: the password of your email account.
- (14) Enable Email Function: Enable email report function.

3.6.2 FTP Test

The user can test all configure for FTP here.

FTP Configure Test		
FTP Server Address	192.168.12.2	empty> disable FTP
FTP Port	21	default=21
FTP Username	test	
FTP Password	test	
Result		
Test		

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- (1) FTP Server Address: FTP Server IP or Domain Name.
- (2) FTP Port: the port of the FTP server.
- (3) FTP Username: username for login
- (4) FTP password: password for login

3.6.3 Email Test

The user can test all configure for Email here.

Email Configure Test		
Email From	abc@gmail.com	Ex: abc@gmail.com
Email To	xyz@gmail.com	Ex: xyz@gmail.com
Email Server	smtp.gmail.com	Ex: smtp.gmail.com
Email Server Port	25	Ex: 25 or 587
Email Username	abc	Ex: abc
Email Password	123abc	Ex: 123abc
Result		
Test		

- (1) Email From: the email will be sent from this address.
- (2) Email To: the email address that will receive logger file. Using "," to separate each mail address

Example:

for single receiver: xxx@gmail.com

for multi-receiver: xxx@gmail.com,yyy@gmail.com

- (3) Email Server: the server address of the email server.
- (4) Email Server Port: the server port of the email server. Usually it will be 25, 465, or 587.
- (5) Email Username: the username of your email account.
- (6) Email Password: the password of your email account.
- (7) "Test" button: Pressing this button, it will send a test mail to the mail address in "Email To" field.

3.6.4 Modbus Test

The user can test all configure for Modbus here. There is the result message for testing ET-7026.

Modbus Configure Test modbus debug start DEBUG [2014-08-15 17:20:57] [1] DI value= (0, 0) Result DEBUG [2014-08-15 17:20:57] [1] DO value= (0, 1) DEBUG [2014-08-15 17:20:57] [1] AI value= (65535, 65535, 65535, 65535, 65535, 65535) DEBUG [2014-08-15 17:20:57] [1] AO value= (0, 273) Test MODBUS Exception Codes: 01: ILLEGAL FUNCTION 02: ILLEGAL DATA ADDRESS 03: ILLEGAL DATA VALUE 04: SLAVE DEVICE FAILURE 05: ACKNOWLEDGE 06: SLAVE DEVICE BUSY 08: MEMORY PARITY ERROR 0A: GATEWAY PATH UNAVAILABLE 0B: GATEWAY TARGET DEVICE FAILED TO RESPOND

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3.7 RTU CAN Client

The user can configure RTU Client with CANBus function here. The function will connect to <u>RTU</u> <u>Center</u>, please refer the website for more information.

3.7.1 Basic Configure

The user can configure basic parameter of RTU Client firmware function here.

Main Info.			
Server Address	172.18.12.2		
Server Port	10000	default=10000	
Station ID	1	1~65535	
Data Update Period(sec.)	1	0~86400 (0=disable)	
Heartbeat Period(sec.)	0	1~86400 (a day)	
Enable Firmware	🗹 Enable	✓ Enable	
Firmware Version			
Modify			

- (1) Server Address: Server IP or Domain Name.
- (2) Server Port: the port of the server.
- (3) Station ID: the ID for this device. (do not be the same with other RTU device)
- (4) Data Update Period (sec.): set report time interval. The device will report all data to RTU Center every interval time your setting.
- (5) Heartbeat Period (sec.): set heartbeat time interval. 3G/GPRS connection will be terminate by ISP, this parameter can detect broken connection early. "Heartbeat Period" must be smaller than "Data Update Period".
- (6) Enable Function: enable the RTU Client function.

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3.7.2 CAN Configure

The user can configure CAN bus parameter here. The can data will be mapping to AI field of the RTU function.

	CAN Configure		
CAN B	aud Rate	1000K please reboot after	er changing baudrate
Group:		1 •	
ai- index	CAN mode(0/1:11/29bits)	CAN ID	CAN data index
0	0	1	0
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
		Modify	

- (1) CAN Baud Rate: configure baud rate here.
- (2) Group: there are 10 group in RTU function, the user can configure CAN data (a byte) fill to the ai point that you choose.
- (3) ai-index: a group have 16 ai point, from 0 to 15.
- (4) CAN mode: 0 is 11-bit, and 1 is 29-bit.
- (5) CAN ID: the ID of the CAN message that you want to catch.
- (6) CAN data index: Max CAN message length is 8 (range is 0~7), the user can choose an index data fill into AI field of RTU.

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3.7.3 FTP/ Email

This function will send back all I/O data log file automatically. The period time to send is depending on "Max. Time per Log File (min.)" parameter.

Main Info.		Modbus Device	FTP / Email
Data Log Interval (sec.)		5	0~86400 (0=disable)
Max. Time per Log File (min.)		3	3~1440 minutes
FTP Server Address		61.219.167.34	empty> disable FTP
FTP Port		221	default=21
FTP Username		test	
FTP Password		test	
Enable FTP Funcion		🖉 Enable	
Email From		abc@gmail.com Ex: abc@gmail.com	empty> disable Email
Email From Email To		Ex: abc@gmail.com	empty> disable Email Ex: xyz@gmail.com
	itact	Ex: abc@gmail.com	Ex: xyz@gmail.com
Email To	itact	Ex: abc@gmail.com xyz@gmail.com xx@gmail.com,yy@gmail.com	Ex: xyz@gmail.com
Email To Example for 2 or more con	itact	Ex: abc@gmail.com xyz@gmail.com xx@gmail.com,yy@gmail.com smtp.gmail.com	Ex: xyz@gmail.com n
Email To Example for 2 or more con Email Server	itact	Ex: abc@gmail.com xyz@gmail.com xx@gmail.com,yy@gmail.com smtp.gmail.com 25	Ex: xyz@gmail.com n Ex: smtp.gmail.com
Email To Example for 2 or more con Email Server Email Server Port	itact	Ex: abc@gmail.com xyz@gmail.com xx@gmail.com,yy@gmail.com smtp.gmail.com 25 abc	Ex: xyz@gmail.com n Ex: smtp.gmail.com Ex: 25
Email To Example for 2 or more con Email Server Email Server Port Email Username	itact	Ex: abc@gmail.com xyz@gmail.com xx@gmail.com,yy@gmail.com smtp.gmail.com 25 abc	Ex: xyz@gmail.com n Ex: smtp.gmail.com Ex: 25 Ex: abc

- Data Log Interval (sec.): the time interval to record I/O data to logger file. Set as "0" to disable all function in this tab.
- (2) Max. Time per Log File (min.): the time interval to change log file and send log file via Email or FTP. it will change logger file before the file be over 3 MB, and move old logger file into "LOGFILE" folder, and send out the file at the same time. If you enable FTP or Email function, it will copy old log file into "FTP_UPLOAD" and "MAIL_UPLOAD" for sending out files. If send FTP or Email logger file fails, it will send files next time.
- (3) FTP Server Address: FTP Server IP or Domain Name.

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- (4) FTP Port: the port of the FTP server.
- (5) FTP Username: username for login
- (6) FTP password: password for login
- (7) Enable FTP Function: enable FTP report function.
- (8) Email From: the email will be sent from this address.
- (9) Email To: the email address that will receive logger file. Using "," to separate each mail address

Example:

for single receiver: xxx@gmail.com

for multi-receiver: xxx@gmail.com,yyy@gmail.com

- (10) Email Server: the server address of the email server.
- (11) Email Server Port: the server port of the email server. Usually it will be 25, 465, or 587.
- (12) Email Username: the username of your email account.
- (13) Email Password: the password of your email account.
- (14) Enable Email Function: Enable email report function.

4. Example

4.1 3G/4G Router Application

This example shows the steps to share 3G/4G network to 3 XPac8000.



(1) Please configure the Ethernet of XPac8000 as:

IP=192.168.0.10 ~ 12

Mask="255.255.0.0"

gateway = "192.168.27.31".

(2) Set the Ethernet IP.

Ethernet		
IP Address	192.168.27.31	
Mask	255.255.0.0	
Gateway		
Modify		

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(3) Set Pin code of your SIM card.

Set "User Name" and "Password" if your SIM card need it.

Press "Modify" to save

PIN / APN Configure		
PIN Code	0000	
Phone Number	*99***1#	(1)
APN	internet	(2)
User Name		(2)
Password		(2)
Modify		
(1):usually use *99# or *99***1# (2):please ask your SIM Card provider		

(4) Enable "Network Reconnection" function to keep your mobile network always online (usually, ISP will disconnect your connection once every 1~3 days).

Generally, you can set the Server IP as your server's IP or google's DNS server IP (8.8.8.8). If you use MDVPN, please set the Server IP as your Server IP that doesn't deny ICMP service (Ping).

Press "Modify" after you finish all settings.

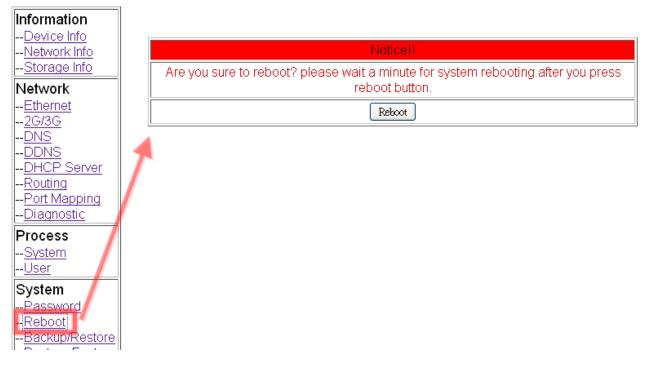
Network Reconnection		
Server IP	8.8.8.8	
Max. Retry	5	
Retry Interval Time	30	
Enable Funcion	✓ Enable	
Modify		
 (1):This function will run immediately after you press "Modify" button (2):GSM module will be reset after Max. retry (3):System will reboot after GSM module reset 100 times 		

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(5) Set routing rule to share 3G/4G network. This setting will share 3G network to IP address from 192.168.0.1~192.168.0.255. Press "Modify"

	ROUTING Rule		
Rule NO.	IP	Mask	Target
0	192.168.0.1	24 💌	ppp0 🔽
1		~	~
2		~	~
3		~	~
4		~	~
5		~	~
6		~	~
7		~	~
8		~	~
9			~

(6) Please reboot the device to enable settings.



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4.2 Web Server and IP Camera Application

This example shows the steps to share 3G/4G network to ET-7044 and IP camera.



- (1) Please Set the Ethernet of ET-7044 and IP camera as: IP=192.168.0.20 ~ 22 Mask="255.255.0.0" gateway = "192.168.27.31"
- (2) Set the IP as below:
 IP="192.168.27.31"
 Mask="255.255.0.0"

Ethernet					
IP Address	192.168.27.31				
Mask	255.255.0.0				
Gateway					
	Modify				

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(3) Set Pin code of your SIM card.

Set "User Name" and "Password" if your SIM card needs it. Press "Modify"

PIN / APN Configure				
PIN Code	0000			
Phone Number	*99***1#	(1)		
APN	internet ((2)		
User Name		(2)		
Password		(2)		
	Modify			
(1):usually use *99# or *99*** (2):please ask your SIM Card pr				

(4) Enable "Network Reconnection" function to keep your mobile network always online (usually, ISP will disconnect your connection once every 1~3 days).

Generally, you can set the Server IP as your server's IP or Google's DNS server IP (8.8.8.8). If you use MDVPN, please set the Server IP as your Server IP that doesn't deny ICMP service (Ping).

Press "Modify" after you finish all settings.

Network Reconnection					
Server IP	8.8.8.8				
Max. Retry	5				
Retry Interval Time	30				
Enable Funcion	✓ Enable				
	Modify				
(1):This function will run imme (2):GSM module will be reset a (3):System will reboot after GS					

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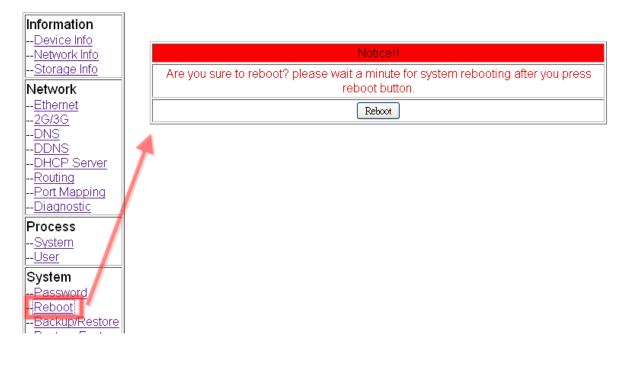
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(5) Set "Port Mapping Rule" to let user access the device behind GRP device via the internet. This setting will bind the port of 3G interface to "Target IP:Target Port".

Port 12080 of 3G interface	192.168.0.20:80
Port 12180 of 3G interface	192.168.0.21:80
Port 12280 of 3G interface	192.168.0.22:80

Information							
<u>Network Info</u>				P	ort Mapping Rul	e	
<u>Storage Info</u>		Rule NO.	Туре	From	Port	Target IP	Target Port
Network Ethernet		0	TCP 💌	ppp0 💌	12080	192.168.0.20	80
<u>2G/3G</u>		1	TCP 💌	ppp0 💌	12180	192.168.0.21	80
<u>DNS</u> DDNS	Ζ	2	TCP 💌	ppp0 💌	12280	192.168.0.22	80
DHCP Server	(· ·	3	~	~			
<u>Routing</u> Port Mapping		4	~	~			
Diagnostic		5	~	~			
Process <u>System</u>		6	~	~			
<u>User</u>		7	~	~			
System		8	~	~			
<u>Password</u> Reboot		9	~	~			
Backup/Restore Restore Factory					Modify		

(6) Please reboot the device to enable settings. (you can reboot from the web or the power source)



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(7) Please type the IP address or domain name of GRP device in 3G/4G network. You will look as below. (It maybe like "mygrp5k.no-ip.org:12080".)



(8) If you want to see the IP Camera image from web browser, please type the IP address or domain name of GRP device in 3G/4G network.
 (It may be like "mygrp5k.no-ip.org:12180".)

4.3 Remote I/O Control / Temperature Monitor

This example shows remote control application via "serial port to 3G/4G gateway function".



- (1) Please connect your device (DL-100 or PLC) to serial port of GRP device:
- (2) If you never use VxServer, please refer the link as below: <u>http://m2m.icpdas.com/VxServer.html</u> you need download VxServer software and VxComm software, and install it on your control center.
- (3) Set Pin code of your SIM card, and Enable "Auto-Dialing" function. Set "User Name" and "Password" if your SIM card needs it. Press "Modify"

PIN / APN Configure					
PIN Code	0000				
Phone Number	*99***1# (1)				
APN	internet (2)				
User Name	(2)				
Password	(2)				
	Modify				
(1):usually use *99# or *99***1 (2):please ask your SIM Card pr					

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(4) Enable "Network Reconnection" function to keep your mobile network always online (usually, ISP will disconnect your connection once every 1~3 days).

Generally, you can set the Server IP as your server's IP or Google's DNS server IP (8.8.8.8). If you use MDVPN, please set the Server IP as your Server IP that doesn't deny ICMP service (Ping).

Press "Modify" after you finish all settings.

Network Reconnection				
Server IP	8.8.8.8			
Max. Retry	5			
Retry Interval Time	30			
Enable Funcion	🗹 Enable			
	Modify			
(1):This function will run imme (2):GSM module will be reset a (3):System will reboot after GSI	-			

(5) Configure VxServer Function.

Set "Server IP" and "Server Port", the default port number is "11000".

Let other settings be default value.

Click "Enable Function" to enable VxServer function.

Press "Modify", and device will try to connect to server.

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Virtual COM Function (VxServer)						
Server IP	192.168.12.2					
Server Port	11000	default=11000				
Heartbeat Time	10	10~65535 seconds				
Device ID	1	1~255, unique ID for device				
Alias	GRP-530	Max. Length = 8				
Time Interval	50	1~5000 ms, default=50				
Data Length	1000 10~1000 bytes, default=100					
Modbus TCP to RTU (Port1)	Enable, COM2> TCP Port 10001					
Modbus TCP to RTU (Port2)	Enable, COM3> TCP Port 10002					
Default Baudrate (Port1)	115200 🖌 bps					
Default Baudrate (Port2)	115200 💌 bps					
Default Format (Port1)	🛛 🛛 🛛 (Data bit, Pari	ty, Stop bit)				
Default Format (Port2)	🛛 🛛 🛛 (Data bit, Pari	ty, Stop bit)				
Enable Funcion	Enable					
Firmware Version	v1.0.0					
	Modify					
(1)Heartbeat Time: if this valu (2)Virtual IP: please set it diffe		e to detect network disconnected COM device				

(6) Please reset your device and un-plug your Ethernet from GRP device, it will dial-up in60 seconds, and then it will connect to your control center.

	Virtual IP	Module	Alias	Com Number	Heartbeat	Remote Client IP	Remote Client Port	S
0	127 53.0 1	GRP-520_GRP-530	GRP-530	2	10		51776	

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- (7) After GRP device connect to VxServer, please follow steps below:
 - (a) Press "Search Servers" button, you will get a device list.
 - (b) Click right button of the mouse on "GRP-520_GRP-530"
 - (c) Click "Add Server".
 - (d) Choose the virtual com port number
 - (e) change setting tab to "Server Options", and then set as screenshot. (you software polling time-out must more than 3 sec.
 - (f) click "OK"

ile Server Port Tools	, Oct.30, 2013]					
	P	Configure Server			Configure	e Port
VxCommunity Where remote series or new become part of your PC	GRP-520 (GRP-520 (GRP-520 (127.0.0.3) 127.0.0.4)	^	Port Port I/O Port 1	Virtual COM Reserved COM30	Baudrate N/A Dynamic
Add Server(s)	GRP-520 (GRP-520 (GRP-520 (127.0.0.6)		Port 2	СОМ31	Dynamic
X Remove Server	GRP-520 (127.0.0.8)	E			
🚫 (a) Web		127.0.0.10)				
Search Servers		127.0.0.11) 127.53.0.3)				
Configuration (UDP)	Name (b)	Alias	IP Addres	is (Sub-net Mask	Gateway
Exit	GRP-520_(Ping Server			255.255.255.25	5 127.53.0.1
	ILITERA	-			255.255.0.0	192.168.0.2
	GRP-520	Diagnostic			255:255:0:0 255.255.0.0	192.168.0.1
	FCM-MTCF	Configure Server (U			255.255.0.0	192.168.0.254
	CMCUL03		(c)		255.255.0.0	192.168.0.254
	CMCU-03-1	Add Server(s)		.49 :	255.255.0.0	192.168.0.254
	ACS-11-MF	ACS-11-MF	192.168 .		255.255.0.0	192.168.110.25
	ACS-11-MF	ACS-11-MF	192.168.	110.5	255.255.0.0	192.168.110.25
	4	"				۴

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Adding Servers			×					
IP Range Server (Options Port Options		1					
Server Information	on							
Server Name :	GRP-520_GRP-530	Get name automatically	y					
IP Range Start :	127.53.0.1	🗵 Skip duplicated IP						
IP Range End : 127.53.0.1								
🗆 0 (Net) 🗹 2	Includes the following special IP : 0 (Net) 254 (Gateway) 255 (Broadcast)							
Virtual COM and	I/O Port Mappings							
COM Port :	COM32 -							
🗆 Fixed baudra	te, use current settings	of servers.						
☐ Maps virtual	COM ports to "Port I/O"	on servers.						
		ОК	Cancel					

<u></u>	adding Servers				
	IP Range Server Options Port Options				
	The following items are all PC side settings, not device settings.				
	Keep Alive Time (Seconds) : 1				
	Connection Broken (Seconds) : 3				
	Connect Timeout (Seconds) : 1				
	Command Port (TCP): 10000				
	Virtual I/O Port (TCP): 99999				

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(8) You will see virtual com port: COM32, COM33, but it can't be opened.
 Click "tool"/"Restart Driver" to restart VxComm driver.
 Open com port to connect your device.

(In this case, COM32 is RS-232, COM33 is RS-485 of GRP device.)

e Server Port Tools					
2 3			o (. .	
1	ure Server		Configure Port		
driver & utility	- GRP-520 (127.0	0.0.3)	▲ Port	Virtual COM	Baudrate
	- GRP-520 (127.0	D.O.4)	Port I/	0 Reserved	N/A
Where remote serial devices become part of your PC	GRP-520 (127.0	D.O.5)	Port 1	COM32	Dynamic
	GRP-520 (127.0	D.O.6)	Port 2	COM33	Dynamic
🚿 🛛 🕺 🚽 🕺 🕺 🚽 🕺	GRP-520 (127.0	0.0.7			<i>,</i>
	GRP-520 (127.0				
🗶 Remove Server	GRP-520 (127.0		-		
	GRP-520 (127.0		=		
💽 Web		- GRP-520 (127.0.0.11)			
- GRP-520 (127.53		53.0.3			
Search Servers	ch Servers GRP-520_GRP-53		.1)		
Configuration (UDP)		· · · ·			
	Name	Alias	IP Address	Sub-net Mask	Gateway
Exit	GRP-520_GRP-530	GRP-530	127.53.0.1	255.255.255.255	
	tET-P2R2	EtherIO	192.168.11.1	255.255.0.0	192.168.0.2
	GRP-520	N/A	192:168:54:92	255:255:0:0	100 100 0 5
	IR-712-MTCP	N/A	192.168.15.224	255.255.0.0	192.168.0.1
	FCM-MTCP	iDCS-8830	192.168.50.37	255.255.0.0	192.168.0.254
	CMCU-03-Test	SMART_IO	192.168.0.16	255.255.0.0	192.168.0.254
	CMCU-03-Test ACS-11-MF	SMART_IO ACS-11-MF	192.168.0.49 192.168.110.1	255.255.0.0 255.255.0.0	192.168.0.254 192.168.110.2
		ACS-11-MF	192.168.110.1	255.255.0.0	192.168.110.2
				200.200.0.0	192.100.110.2
	ACS-11-MF	ACO-LI-WL	152.100.110.5		

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4.4 Modbus/TCP to Modbus/RTU over 3G, and Card

Reader Monitor

This example shows Modbus/TCP to Modbus/RTU over 3G/4G function".

After steps below, please set "IP:Port" of Modbus/TCP program as "127.53.0.1:10001" on your control center (Port 10001 is RS-232; Port 10002 is RS-485)



 Please connect your device (M-7017 or PLC) to RS-485 of GRP device. Baudrate of Modbus device is 9600 bps, data format is 8N1 (Data bits, Parity, Stop bits).

Baudrate of Card Reader is 115200 bps

- (2) If you never use VxServer, please refer the link as below: http://m2m.icpdas.com/VxServer.html
 you need download VxServer software, and install it on your control center.
- (3) Set Pin code of your SIM card, and Enable "Auto-Dialing" function. Set "User Name" and "Password" if your SIM card needs it. Press "Modify"

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PIN / APN Configure				
PIN Code	0000			
Phone Number	*99***1#	(1)		
APN	internet	(2)		
User Name		(2)		
Password		(2)		
Modify				
(1):usually use *99# or *99*** (2):please ask your SIM Card pr				

(4) Enable "Network Reconnection" function to keep your mobile network always online (usually, ISP will disconnect your connection once every 1~3 days).

Generally, you can set the Server IP as your server's IP or Google's DNS server IP (8.8.8.8). If you use MDVPN, please set the Server IP as your Server IP that doesn't deny ICMP service (Ping).

Press "Modify" after you finish all settings.

Network Reconnection				
Server IP	8.8.8.8			
Max. Retry	5			
Retry Interval Time	30			
Enable Funcion	🕑 Enable			
Modify				
 (1):This function will run immediately after you press "Modify" button (2):GSM module will be reset after Max. retry (3):System will reboot after GSM module reset 100 times 				

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(5) Configure VxServer Function.

Set "Server IP" and "Server Port", the default port number is "11000". For Card Reader:

Please just set Port1 (RS-232) as default value.

For Modbus RTU device: (Port2, RS-485)

Please configure as below

Click "Enable Function" to enable VxServer function.

Press "Modify", and GRP device will try to connect to server.

Virtual COM Function (VxServer)				
Server IP	192.168.12.2			
Server Port	11000 default=11000			
Heartbeat Time	10 10~65535 seconds			
Device ID	1 1~255, unique ID for device			
Alias	GRP-530 Max. Length = 8			
Time Interval	50 1~5000 ms, default=50			
Data Length	1000 10~1000 bytes, default=1000			
Modbus TCP to RTU (Port1)	Enable, COM2> TCP Port 10001			
Modbus TCP to RTU (Port2)	Enable, COM3> TCP Port 10002			
Default Baudrate (Port1)	115200 🗸 bps			
Default Baudrate (Port2)	9600 💌 bps			
Default Format (Port1)	🛛 🛛 🛛 8N1 🔽 (Data bit, Pari	ty, Stop bit)		
Default Format (Port2)	🛛 🛛 🛛 (Data bit, Pari	ty, Stop bit)		
Enable Funcion	Enable			
Firmware Version	v1.0.0			
	Modify			
	(1)Heartbeat Time: if this value is small, it is sensitive to detect network disconnected (2)Virtual IP: please set it different from other virtual COM device			

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(6) Please reset your device and un-plug your Ethernet from GRP device, it will dial-up in60 seconds, and then it will connect to your control center.

	Virtual IP	Module	Alias	Com Number	Heartbeat	Remote Client IP	Remote Client Port	S
0	127.53.0.1	GRP-520_GRP-530	GRP-530	2	10	192.168.27.31	51776	

 (7) After the GRP device is connected to VxServer, user can connect to "127.53.0.1:10001" and "127.53.0.1:10002" (port 10001 is RS-232; port 10002 is RS485) to send/receive Modbus RTU commands using Modbus TCP program.

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4.5 RTU Client for Remote Control Application with RTU API.

This example shows how to use RTU API to collect and control remote Modbus/RTU and Modbus/TCP I/O with RTU Client / Server.

There are ET-7017, M-7045, and a PLC in this system.



- (1) Please connect your device (ET-7k or M-7k modules) to Ethernet or RS-485 of GRP device:
- (2) If you never use RTU Center, please refer the link as below: http://m2m.icpdas.com/m2m_rtu.html

If you need OPC solution, please refer the link as below: <u>http://m2m.icpdas.com/NAPOPC_M2M.html</u>

- If you need RTU library to develop your own software, please refer the link as below: http://m2m.icpdas.com/m2m_rtu_api.html
- (3) Set Pin code of your SIM card, and Enable "Auto-Dialing" function.
 Set "User Name" and "Password" if your SIM card needs it.
 Press "Modify"

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PIN / APN Configure				
PIN Code	0000			
Phone Number	*99***1# (1)			
APN	internet (2)			
User Name	(2)			
Password	(2)			
Modify				
(1):usually use *99# or *99*** (2):please ask your SIM Card pr				

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(4) Enable "Network Reconnection" function to keep your mobile network always online (usually, ISP will disconnect your connection once every 1~3 days).

Generally, you can set the Server IP as your server's IP or Google's DNS server IP (8.8.8.8). If you use MDVPN, please set the Server IP as your Server IP that doesn't deny ICMP service (Ping).

Press "Modify" after you finish all settings.

Network Reconnection				
Server IP	8.8.8.8			
Max. Retry	5			
Retry Interval Time	30			
Enable Funcion	🖉 Enable			
Modify				
 (1):This function will run immediately after you press "Modify" button (2):GSM module will be reset after Max. retry (3):System will reboot after GSM module reset 100 times 				

(5) Add ET-7050 in "Modbus Device" tab.

choose ET-7050 in the list, and then press "Add" button.

Main Info. Modbus	Device	Email/FTP
Modbus Device Number : 0		ET-7050 T
		ET-7044 ET-7050 ET-7051

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(6) The web will bring out all I/O number information as below. Please modify "Device Name", "Device ID", "IP" and "Port" for your ET-7050.
(Device Name: an alias name of your device, you can modify as you need.)
Press "Modify" to add a device.

Main Info. Moo		odbus Device Email/FTP		
Modbus Device Numi	ber:0	Add ET-7050 🔻		
1 Name :		Edit Delete		
Device Name	ET-7050	Max Length=20		
Device ID	1	1~255		
IP	192.168.11.25	empty for Modbus/RTU		
Port	502	Default=502, 1~65535		
DI Number	12	0~32		
DO Number	6	0~32		
AI Number	0	0~16		
AO Number	0	0~16		
DI Address	0	0~65535		
DO Address	0	0~65535		
AI Address	0	0~65535		
AO Address	0	0~65535		
	Mo	dify Cancel		

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(7) Add M-7022 in "Modbus Device" tab.

choose M-7022 in the list, and then press "Add" button. We will see the screenshot as below.

The web will bring out all I/O number information. Please modify "Device Name" and "Device ID" for your M-7022. (Don't modify "IP" and "Port" settings). Press "Modify" to add a device.

(8) Add PLC in "Modbus Device" tab. (communication with RS-485) choose "Custom" in the list, and then press "Add" button. We will see the screenshot as below.

Here we set the "Device Name", "Device ID", "DI Number", "AI Number" for the PLC. Press "Modify" to add a device.

Main Info.		Modbus D)evice	Email/FTP
Modbus Device N	Modbus Device Number : 2			Custom 🔻
1 Name : ET-7050			E	dit Delete
2 Name : N	2 Name : M-7022			dit Delete
3 Name :	3 Name :			dit Delete
Device Name	myP	LC M	ax Length=20	
Device ID	1	1-	-255	
P		empty for Modbus/RTU		TU
Port	502	D	Default=502, 1~65535	
DI Number	4	0-	-32	
DO Number	0	0-	-32	
AI Number	4	0-	-16	
AO Number	0	0-	-16	
DI Address	0	0-	-65535	
DO Address	0	0-	-65535	
AI Address	0	0-	-65535	
AO Address	0	0-	-65535	
		Modify	Cancel	

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(9) Three devices we set as below:

]	Main Info. Modbus D	evice Email/FTP		
Modbus	Device Number : 3	Add Custom T		
1	Name : ET-7050	Edit Delete		
2	Name : M-7022	Edit Delete		
3	Name : myPLC	Edit Delete		

(10) Please choose "Modbus Test" function, and press "Test" button to test our settings.If the result is successful, the screenshot will be as below, and please follow next step.

<u>Time</u>	*	success
<u>System Service</u>		
VxServer		
<u>VxServer</u>		Modbus Configure Test
RTU Client		invalid object in data, converting to string
<u>RTU Client</u>		invalid object in data, converting to string
<u>FTP Test</u>		modbus debug start DEBUG [2014-08-18 15:55:56] [1] DI value= (0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)
<u>Email Test</u>		Result DEBUG [2014-08-18 15:55:56] [1] DO value= (0, 0, 0, 0, 0, 0)
<u>Modbus Test</u>		DEBUG [2014-08-18 15:55:56] [2] AO value= (291, 256)
V1.1.2 B07		DEBUG [2014-08-18 15:55:56] [3] DI value= (1, 1, 0, 0)
2014/07/28		DEBUG [2014-08-18 15:55:56] [3] AI value= (0, 0, 0, 0)
2014/07/20		
		Test

If result is fail, the screenshot will be as below. Please check your settings or the wire connection.

	fails
	Modbus Configure Test
	invalid object in data, converting to string invalid object in data, converting to string modbus debug start
Result	ERROR [2014-08-18 16:10:55] MB[1] poll_modbus(): timed out DEBUG [2014-08-18 16:10:55] [2] AO value= (291, 256) DEBUG [2014-08-18 16:10:55] [3] DI value= (1, 1, 0, 0) DEBUG [2014-08-18 16:10:55] [3] AI value= (0, 0, 0, 0) [2014-08-18 16:10:54] modbus error [ET-7050,1] Exception: timed out
	Test

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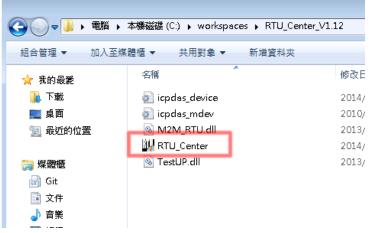
(11) Configure "Main Info." Tab.

- Set "Server Address" and "Server Port" of your server that running RTU Center.
- Set Station ID, and don't be the same with another RTU device.
- Set "Data Update Period" and "Heartbeat Period". (0 disable)
- Configure the parameters of RS-485 for Modbus/RTU.

Main Info.	Modb	ous Device	FTP / Email			
Server Address						
Server Port		10000	default=10000			
Station ID		1	1~65535			
Data Update Period(s	ec.)	3	0~86400 (0=disable)			
Heartbeat Period(sec.)	0	1~86400 (a day)			
Baud Rate (RS-485 fo Modbus/RTU)	r	9600 🔽 bps				
Data Bit		8 💌				
Parity		N 🕶				
Stop Bit						
Modbus Timeout (ms)		1000 50~99999, default=1000				
Enable Firmware		☑ Enable				
Firmware Version		v1.0.0				
		Modify				

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(12) Download RTU Center from: http://m2m.icpdas.com/m2m_rtu.html and then extract "RTU Center".



Or you can install NAPOPC.M2M DA Server, it contains RTU Center.

Please download install file from:

http://m2m.icpdas.com/NAPOPC_M2M.html

(13) Execute RTU Center, and add a RTU device in RTU Center.

- Click "New Device" icon.
- Input the alias name of your device
- Choose module type as "GRP-520" (no this item in new version RTU Center)
- Set Station ID as "1", and then press "OK" button.

M2M RTU Cen Eile Settings	Help	武	1			C	
	Device Pr		~		Parameter		S
	Device Modu	The second	RP520 9 Unicode,	Max. size: 2	20)	• •	к
	111	dule GRF	²⁻⁵²⁰	• (1 ~ 6553	5)	Car	ncel

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(14) GRP device will connect to RTU Center later, and screenshot as below.

<u>F</u> ile <u>S</u> ettings <u>H</u> elp						
	🖄 🌒 🄇					
⊡-⊖myGRP520		Parameter	Status			
Local IO ET-7050		Device Name	myGRP520			
M-7022		Module	GRP-520			
myPLC		Station ID	1			
,. ==		Describe				
		Connected Priority	GPRS Master, Ethernet Slave			
		Connected Method	Ethernet			
		Date&Time	2014/08/20 15:37:34			
		Remote Client IP	192.168.27.50			
		Remote Client PORT	44665			
		Send once time (unit: sec)	5			
		Heartbeat time (unit: sec)	0			
		Modbus module number	3			
Date / Time	Message					
2014/08/20 15:34:23.297	Station [1] established the connection!!(Ethernet) (IP: 192.168.27.50, PORT: 44665)					

(15) You can double click on "ET-7050" to bring out "Output control panel", and press "DO1" to control remote DO.

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		🌏 🥌 💆			
myGRP520 Local IO	Write Output - ET-7050	Paraméter	Status		
ET-7050	Write Digital Output (Red Led: Of	Consyled OFF)			
M-7022	bou bot	003 003	004 005	006	
myPLC	DOU	002	004	00.6	Exit
	e00 009	DONE!	0012	DO 14 00 15	
				for an and the state of the	
	Wittle Analog Output Read back Output value	Read back Output value	Read back Output value	Read back Output value	
	Head back Cuput yaue	Head back Output value	Head back Output value	Head Back Outputvalue	
	AO II (Heb)	AD 1 8Hm)	W3-3 (Hex)	A0.36He0	
	and a transfer of the state of the state	and the second second second second second	the second second second second second	10 Exercise and a second second second second	
	Read back Output value	Read back Output value	Read back Output value	Read back Output value	
	AQ 4 (Heit)	A0.5.01ex	WO 6 (Heed)	AO 7 (Hel)	
	Read back . Output value	Read back Output value	Read back Output value	Read back Output value	
	and the second				
	AC 8 (Hell)	AD 9 8460	AO TR (Heio	A0.11.04m0	
	Read back. Output value	Read back_Output value	Read back Output value	Read back: Output value	
Time		Hose were Sound to de	Sound Find		
8/20 15 34	AD 12 04e0	AD 13 (Hes)	4-01 114 (04em)	A0 15 Ofen	
8/20 15:34	<u>a anstreau</u>	(ACC/AMARKO)	DUARA MAN	317//77/201	
8/20 15:34	Set Counter				
6/20 15:34 6/20 15:34	Counter 0: 0 0 0 0 0	0 0 0 0 0 Set Zero	Counter 1: 0 0 0 0 0	0 0 0 0 0 Set Zero	
8/20 15 34	China	HOLDING BORN			
6/20 15:34	Counter 2: 0 0 0 0 0	0 0 0 0 0 Set Zero	Counter 3. 0 0 0 0 0	0 0 0 0 0 Set Zero	
8/20 15 34					
6/20 15:34		0 0 0 0 0 Set Zeru	Terra Contra Con	0 0 0 0 0 Set Zero	

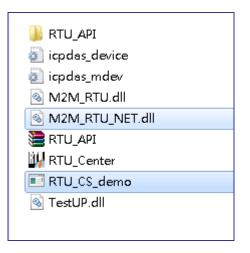
(16) Download RTU API from RTU Center web page, and extract it. There are RTU API library and some demo for C#, VB.Net, VC6 as below.

	[2013/11/05]	
鷆 demo 鷆 Lib 📄 readme	\Lib \Demo \RTU_CS_Net_demo \RTU_VB_Net_demo \RTU_VC6_demo	< ∀er1.3.1 < 2013/11/01

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(17) Copy pre-building demo into folder of RTU Center. (demo must be in the same folder with RTU Center, because they use the same share memory in M2M_RTU.dll) Here we copy two file "RTU_CS_demo.exe" and "M2M_RTU_NET.dll" from C# demo.

▶ V1.12\RTU_API\demo\RTU_CS_Net_demo\RTU_CS_demo\bin\Debug							
Ž	名稱	修改日期					
	🗊 icpdas_device	2009/11/13 下午					
	🗿 icpdas_mdev	2010/7/21 下午 0					
的位置	M2M_RTU.dll	2013/11/5 下午 0					
	M2M_RTU_NET.dll	2013/10/29 下午					
	📧 RTU_CS_demo	2013/11/11 下午					
	🐏 RTU_CS_demo	2013/11/11 下午					
	📧 RTU_CS_demo.vshost	2005/9/23 上午 0					



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- (18) Execute "RTU_CS_Demo.exe".
 - Press "Get Information" to get all stations information.
 - Set "Station ID" as 1 (because we set Station ID as 1 in GRP device)
 - Press "(2)ReadData" button to read Local IO data. Because GRP device don't have local IO, we get the error code here
 - Set "Modbus ID" as 1 and "Modbus Name" as "ET-7050", and press "(3)ReadData" to get all IO data.
 - Press "Write Dos (add 1)" button to control DO.

🖳 RTU API demo (C#) 2013/11/01	
(1) Initial / get basic Information (1) Get Information (1) Get Information Initial Success API Version: V131 2013/11/05 Read RTU Soft WDT Run RTU Close RTU Count x0 enGPS = 0 Modbus(1) Name = ET-7050 sID = 1 DI x12 DO x6 AI x0 AO x0 Count x0 enGPS = 0 Modbus(2) Name = M-7022 sID = 2 DI x0 AO x2 Count x0 enGPS = 0 Modbus(3) Name = myPLC sID = 1 DI x4 DO x0 AI x4 AO x0 Count x0 enGPS = 0 Modbus(3) Name = myPLC sID = 1 DI x4 DO x0 Count x0 enGPS = 0	(2) Local IO (2) ReadData (3) Write DO ch0 (invert) (0 or 1) Station ID=1 (2) 2014/8/21 15:10:54 Station ID:1, mbSlave ID:255, Modbus Name=Local IO DI ch0 =0, Error=6 DO ch0 =0, Error=6 AI och0 =0, Error=6 AI och0 =0, Error=6 AI och0 =0, Error=6 (3) Remote IO (Modbus device) (3) Remote IO (Modbus device) (3) Remote IO (Modbus device) (3) Remote IO (Modbus device) (4) 2014/8/21 15:11:14 Station ID:1, mbSlave ID:1, Modbus Name=ET-7050 DI ch0 =0 DI ch0 =0 DI ch0 =0, Error=6 AI och0 =0 AI o

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4.6 RTU Client for Remote Control Application with OPC DA Server.

- (1) Please refer last section for setting of "RTU Client", "RTU Center".
- (2) After install "NAPOPC.M2M DA Server", please click the icon to launch NAPOPC.M2M DA Server from right-bottom toolbar of desktop.



(3) Click "Search" to add all tags of GRP device automatically.

💯 ICPDAS NAPOPC.M2	M DA Server - 未命名		
<u>File Add Edit V</u> iew	Options <u>H</u> elp		
New Open Save	Save as Device	Group Tag	Produce Search Monit
	Search Modules	F	
	Search Modules	Clea	ur Modules

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(4) You will get a tag list as below.

💯 IC	PDAS NAP	OPC.M2N	/ DA Serve	r - 未命名								
<u>F</u> ile	<u>A</u> dd <u>E</u> d	it <u>V</u> iew	Options	<u>H</u> elp								
	B			2			•	G		<u>Se</u>	3<	F
New	/ Oper	n Save	Save as	<u> Device</u>	Group	Таа	Produce	Search	Monitor	Debua	Cut	Cor
⊡ … <mark> </mark>				Name		Device 7	Гуре	Location	Cha	annel Type		Chanr
į.	🛅 ET-70	50		🕀 Ch00)	ET-70	50	1		Bit Input		0
	🔁 DI			🔶 🗠 Ch01		ET-70	50	1		Bit Input		1
	- 🔁 DC)		Ch02	2	ET-70	50	1		Bit Input		2
	📑 🖆 DI	5		🐣 Ch03	}	ET-70	50	1		Bit Input		3
	D0			🐣 Ch04	Ļ	ET-70	50	1		Bit Input		4
	🐮 M-70			🕀 Ch05	5	ET-70	50	1		Bit Input		5
				😓 Ch06	5	ET-70	50	1		Bit Input		6
	myPL			🔶 Ch07	,	ET-70	50	1		Bit Input		7
				👋 Ch08		ET-70	50	1		Bit Input		8
	Als	,		😓 Ch09		ET-70	50	1		Bit Input		9
	🔁 DI			🖧 Ch1(ET-70	50	1		, Bit Input		10
	li 🖬 🔁 DIs	5		A								

(5) You can double click on device node to modify device name.

New	Open	Save	Save as	Device	Group	Таа	Produ	ice 🤅	Search	Moni
		1) Doub	le Clieck			Name		Dev	ice Type	
÷ h	ET-7050									
	🛯 M-7022									
	🛯 myPLC									
	Unknown	Device								
	evice Prope	erties								8
	Device Name	GRP-5					-		OK	
	💿 M2M Ma	odules	(2	2) Input N	ew Nam	e			Cancel	
	🗆 Module Se	etting —								
	Module	G-4500	•							
	Location	1	• (1~6	5535)						

(6) Now you can use OPC Client to read I/O data from NAPOPC.M2M DA Server.

Or you can client "Monitor" to monitor all I/O data.

響 ICPDAS NAPOPC.M2M DA Server - 未命名.tdb						
<u>F</u> ile <u>A</u> dd <u>E</u> dit <u>V</u> iew Options <u>H</u> el	р					
) 🖻 🗎 👼 -	ی 🥙		6	📜 🛠 😹		X
	Device Group	Taa Produce	Search M	onitar Debua Cut	<u>Copy Paste</u>	Delete F
⊟ <mark>1</mark> GRP-520_1	Name	Device Type	Location	Channel Type	Channel	Value
🖨 📲 ET-7050	400 Ch00	ET-7050	1	Bit Output	0	OFF
🔁 DI	🕁 Ch01	ET-7050	1	Bit Output	1	ON
🖆 DO	400 Ch02	ET-7050	1	Bit Output	2	OFF
- E DIs	🕁 Ch03	ET-7050	1	Bit Output	3	ON
	6 Ch04	ET-7050	1	Bit Output	4	OFF
	🕁 Ch05	ET-7050	1	Bit Output	5	OFF

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4.7 RTU Client for Remote Control Application with InduSoft.

This example shows how to using SCADA "InduSoft" to control/monitor remote I/O with GRP device.



- (1) About RTU Client, RTU Center and OPC Server, please refer last section.
- (2) Right-click OPC DA 2.05 folder and insert a new worksheet.



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(3) Choice OPC Server from Server Identifier, and Select NAPOPC.M2M Item from combo box.

	ST OPCCL00	1.0PC ×					
Description: Server Identifier: Read Update Rate (ms): NAPOPC.M2M Remote Server Name: Studio.Scada.HDA.OPC Studio.Scada.OPC.2 Read before with Browse Read after writh ✓ Accept Tag National Server Server Stage			iting	ltere colume			
					nteni column		
	Tag Name	ltem	Scan		(Project Texts)	Add	
	Tag Name	0		vanie in the		Add	
*		0	Scan		(Project Texts)	0	
*		0	Scan	Ŷ	(Project Texts)	0	
		0	Scan Q (All) Always	~	(Project Texts)	0	
*		0	Scan (All) Always Always	> > >	(Project Texts)	0	

- (4) Configure Tag Name and Item Column
 - Fill in your tag.
 - Double-click Item column and select the point from pop-up window.

SIN OPCCLO	001.OPC ×	
Description:	Server Identifier: NAPOPC.M2M	Disable:
Read Update	Rate (ms): Percent Deadband:	Status:
Remote Serve		efore writin fter writin Tag Nam
Tag Nan Q Filter 1 DO[0] 2 DO[1] 3 DI[0] 4 DI[1] 5 DI[2] 6 DI[3] 7 DI[4] 8 DI[5] 9 Al		Alwa Alwa Alwa Alwa Alwa Alwa Alwa Alwa

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4.8 Email or FTP report I/O logger file.

This example shows how to using GRP device to report I/O logger file periodically.



(1) About Modbus configure, please refer section 4.5.

- (2) Configure Email / FTP function in "Email/FTP" Tab. You must set "Data Log Interval" field more than 0, or log report function will be disabled. (include FTP and Email)
 - Configure "Data Log Interval" to record IO data into csv file. (0 → disable) filename format: GRP-530_StationID_YYYYMMDD_hhmmss.csv ex: GRP-530_13_20140806_172347.csv
 - Configure "Max. Time per Log File" to indicate how long to change / send back log file. If the file size is close 3MB, GRP device will create a new log file to recode I/O data and move old log file into "/RTU/LOGFILE/" in SD card.
 - If you need FTP report function, please set all FTP parameters and set "Enable FTP Function" as "Enable". GRP device will send log file to FTP Sever when new log file is available.
 - If you need Email report function, please set all Email parameters and set "Enable FTP Function" as "Enable". If you need 2 or more contact, please use comma "," to separate each contact.

Main Info.	Main Info.		FTP / Email		
Data Log Interval (sec.)		5	0~86400 (0=disable)		
Max. Time per Log File (m	uin.)	3	3~1440 minutes		
FTP Server Address		徽省公共长期等于国委	empty> disable FTP		
FTP Port		221	default=21		
FTP Username		test			
FTP Password		test			
Enable FTP Funcion		🖉 Enable			
Email From		abc@gmail.com Ex: abc@gmail.com	empty> disable Email		
Email To		xyz@gmail.com	Ex: xyz@gmail.com		
Example for 2 or more contact		xx@gmail.com,yy@gmail.com			
Email Server		smtp.gmail.com	Ex: smtp.gmail.com		
Email Server Port		25	Ex: 25		
Email Username		abc	Ex: abc		
Email Password		123abc	Ex: 123abc		
Enable Email Funcion		Enable			
Modify					

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(3) Finally, please don't forget enable firmware in "Main Info." Tab. If you don't need the firmware send data to RTU Center, you can set "Data Update Period" as 0.

Main Info.	Ma	dbus Device		FTP / Email	
Server Address		26.394.14 2]	
Server Port		10000		default=10000	
Station ID		1		1~65535	
Data Update Period(sec.)		0		0~86400 (0=disable)	
Heartbeat Period(sec.)		0] 1~86400 (a day)	
Baud Rate (RS-485 for M	odbus/RTU)	9600 v bg)S		
Data Bit		8 •			
Parity		N V			
Stop Bit		1 •			
Modbus Timeout (ms)		1000		50~99999, default=1000	
Enable Firmware		🗹 Enable			
Alive		True			
		Modify			

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Appendix A. Revision History

This chapter provides revision history information to this document. The table below shows the revision history.

Version	Date	Description of changes
1.0.0	2015-11-05	The First Release Revision
1.1.1	2016-10-26	New feature: GPS Function
1.1.3	2016-11-21	Add 4G version (GRP-540M-4GE)
1.1.4	2017-01-11	Add DDNS Function
		New feature: RTU-CAN Function
1.1.5	2017-06-29	Add UDP Search Fucntion
		Add Default IP mode when booting
1.1.6	2017-09-12	Add Reset Network Function
		New feature: WLAN Function
1.2.0	2018-03-20	Typesetting revision
1.2.1	2019-02-22	Add information of GRP-541M
1.2.2	2021-11-01	Add DHCP Server and GPS Information.
		Update DDNS table picture.
1.2.3	2022-01-10	Removed VxComm description for Modbus/TCP to
		Modbus/RTU example.
1.2.4	2023-12-20	Remove the SMS function from the application
		architecture.

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