



User's Manual

RS232/RS422/RS485 Industrial Secure IoT Modbus Gateway

- ▶ IMG-3100T / IMG-3105AT
- IMG-3200T / IMG-3400T



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FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: This device must be earthed.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Energy Saving Note of the Device

This power required device does not support Standby mode operation. For energy saving, please remove the power cable to disconnect the device from the power circuit. In view of saving the energy and reducing the unnecessary power consumption, it is strongly suggested to remove the power connection for the device if this device is not intended to be active.

WEEE Warning



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

PLANET IMG-3X00T Series User's Manual

Model: IMG-3100T / IMG-3105AT/ IMG-3200T / IMG-3400T

Revision: 1.0 (August, 2026)

Part No: EM-IMG-3x00T_v1.0

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1 INTRODUCTION

Thank you for purchasing PLANET IMG-3100T/IMG-3105AT/ IMG-3200T and IMG-3400T Modbus Gateway. "Modbus Gateway" is used as an alternative name in this User's Manual.

IMG-3100T	IP30 Industrial 1-Port RS232/RS422/RS485 Modbus Gateway
IMG-3105AT	IP30 Industrial 1-Port RS232/RS422/RS485 Modbus Gateway with 1-Port 100FX SFP
IMG-3200T	IP30 Industrial 2-Port RS232/RS422/RS485 Modbus Gateway
IMG-3400T	IP30 Industrial 4-Port RS232/RS422/RS485 Modbus Gateway

"Modbus Gateway" mentioned in this Guide refers to the above models.

1.1 Packet Contents

Open the box of the Modbus Gateway and carefully unpack it. The box should contain the following items:

Model Name Packaged Item	IMG-3100T	IMG-3105AT	IMG-3200T	IMG-3400T
The Modbus Gateway	■	■	■	■
QR Code Sheet	■	■	■	■
CloudNMS Quick Guide	■	■	■	■
Wall-mounting Kit	■	■	■	■
RJ45 Dust Caps	1	-	2	2
SFP Dust Caps	-	1	-	-

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

1.2 Product Description

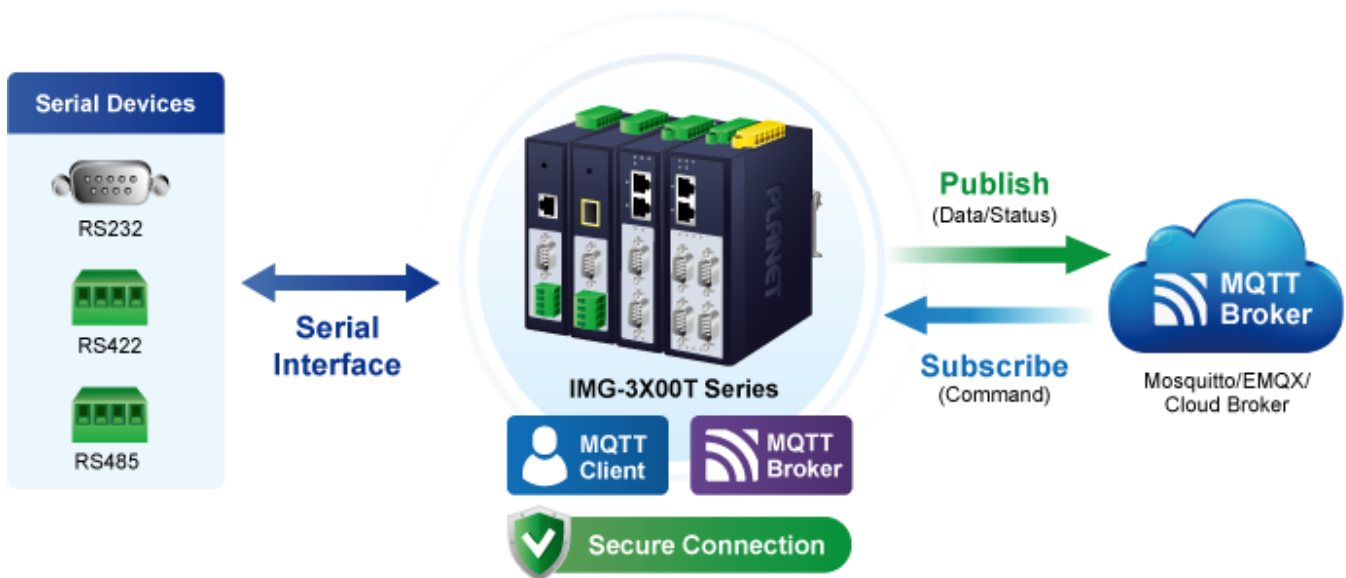
Industrial Modbus Gateway for Modern IIoT Connectivity

The **IMG-3X00T Series** is designed to bridge **Modbus TCP**, **Modbus RTU**, and **Modbus ASCII** networks for modern industrial automation and IIoT applications. It enables seamless communication between Ethernet-based control systems and legacy serial devices, allowing existing PLCs, RTUs, HMIs, power meters, sensors and industrial controllers to be integrated into IP networks without replacing field equipment. By preserving existing Modbus infrastructures while extending network connectivity, the IMG-3X00T Series provides an efficient migration path for factories, transportation systems, utilities and building automation toward digitalized industrial environments.

MQTT Edge Gateway for Data Aggregation and Distribution

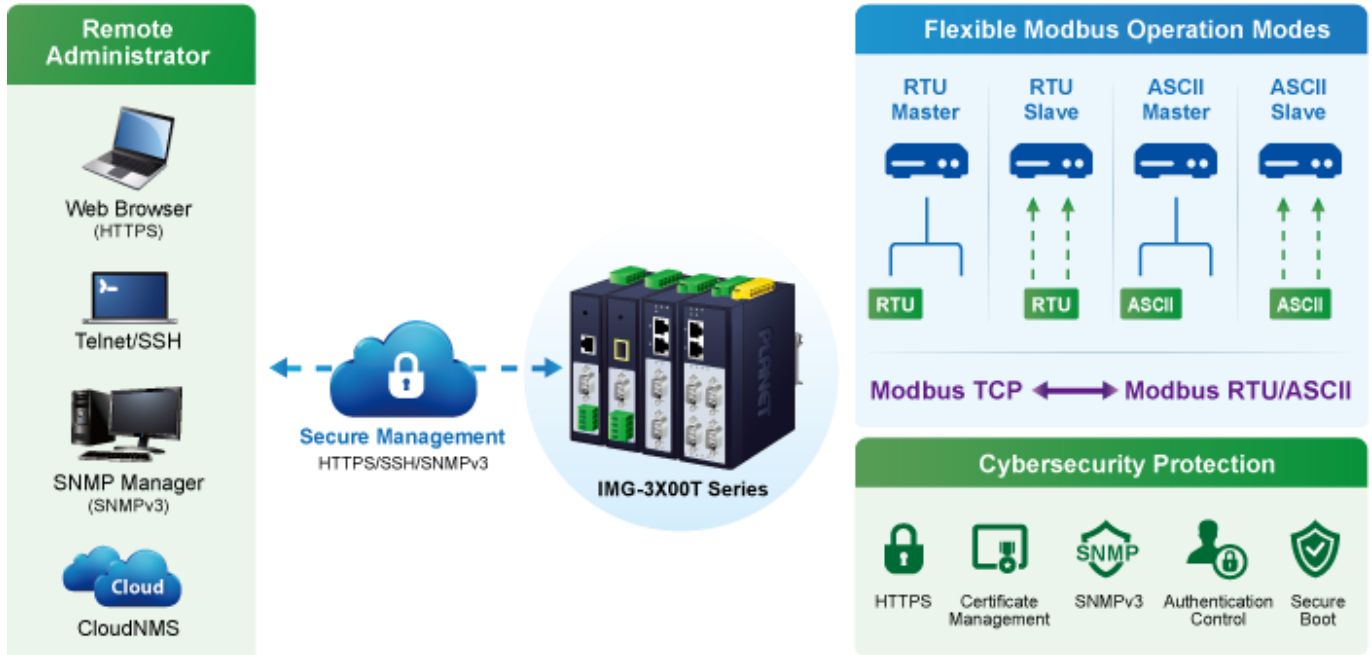
The **IMG-3X00T Series** expands traditional Modbus gateway functionality by integrating both **MQTT Client** and **built-in MQTT Broker** capabilities. It collects data from **Modbus RTU/ASCII** devices and securely publishes MQTT messages to **SCADA systems, MES platforms, edge servers, or cloud services**. The embedded MQTT Broker also enables local message exchange without requiring an external broker, simplifying Industrial IoT deployment.

In addition to MQTT communication, the **IMG-3X00T Series** bridges **Modbus TCP/IP** and **Modbus RTU/ASCII** networks, allowing legacy serial devices to be easily integrated into Ethernet-based automation systems. It supports **up to 32 TCP slave connections in Master mode** and **32 TCP master connections in Slave mode**, providing a flexible and reliable solution for industrial hybrid networks.



Flexible Modbus Operation Modes

The **IMG-3X00T Series** supports four Modbus communication modes, including **RTU Master**, **RTU Slave**, **ASCII Master**, and **ASCII Slave**. These operation modes provide flexible deployment for various industrial control architectures and simplify communication between Modbus TCP networks and serial Modbus devices. Whether operating as a master or slave, the gateway enables reliable protocol conversion, centralized monitoring and seamless integration of legacy Modbus equipment into modern Ethernet infrastructures.



Secure Remote Management and Cybersecurity

The **IMG-3X00T Series** provides comprehensive remote management through web-based interfaces, SNMP and CloudNMS monitoring, allowing administrators to remotely configure, monitor and maintain devices with ease. To strengthen cybersecurity, the gateway supports **Secure Boot**, **SNMP v1/v2c/v3**, **MQTT over TLS**, firmware upgrade, configuration backup and restore, user authentication, and secure management mechanisms. Event Log, Syslog, SNMP Trap and Relay Alarm functions further simplify maintenance while improving system availability and operational reliability.

Stable Performance under Harsh Industrial Environments

Designed for demanding industrial applications, the **IMG-3X00T Series** features a rugged **IP30-rated metal enclosure**, wide operating temperature range from **-40 to 75°C**, redundant **9~48V DC / 24V AC** power inputs with automatic failover, surge protection and ESD immunity. Supporting both DIN-rail and wall-mount installation, the gateway ensures stable and continuous Modbus communication in factories, transportation systems, power substations and other mission-critical industrial environments.



Dual Power Input for High Availability Network Systems

The IMG-3X00T Series features a redundant dual power input design supporting 9V to 48V DC operation for enhanced system reliability. When the primary power source fails, the built-in hardware failover mechanism automatically switches to the backup supply, ensuring uninterrupted communications and continuous operation. This high-availability design is especially suitable for remote sites, process control systems and mission-critical industrial applications where maintaining network uptime is essential.



Digital Input and Digital Output for External Alarm (IMG-3400T only)

With digital input and digital output on its front panel, an external alarm can help users via the digital input to detect and log external device status (such as door intrusion detector), and then immediately send an event alarm to the administrator. The digital output can be used to alarm the administrator if the IMG-3400T serial port shows DCD, changed DSR or power failure.

PLANET CloudNMS – Cloud-Based Universal Network Management

PLANET's **CloudNMS** platform and mobile app empower IT staff to remotely manage all network devices and Powered Devices (PDs) in real time. Designed for enterprises and industries, CloudNMS minimizes the need for on-site troubleshooting by providing centralized monitoring, fault detection, and instant alerts.

With **CloudNMS**, businesses can manage diverse network deployments more **efficiently, securely, and intelligently**—all from a single cloud-based platform.



1.3 How to Use This Manual

This User's Manual is structured as follows:

Section 2, INSTALLATION

It explains the functions of the IMG-3X00T Series and how to physically install the IMG-3X00T Series.

Section 3, MODBUS GATEWAY MANAGEMENT

The chapter explains how to manage the IMG-3X00T Series in different ways.

Section 4, WEB CONFIGURATION

It describes how to configure by web interface.

Section 5, SOFTWARE VCOM UTILITY

It describes how to use software MB VCOM in the Virtual COM mode.

1.4 Product Features

➤ Physical Port

IMG-3100T

- 1 10/100BASE-TX Fast Ethernet RJ45 port
- One DB9 interface that support RS-232
- One terminal block interface that supports 2-wire RS-485 and 4-wire RS-422/RS-485 standards

IMG-3105AT

- 1 100BASE-FX SFP slot
- One DB9 interface that support RS-232
- One terminal block interface that supports 2-wire RS-485 and 4-wire RS-422/RS-485 standards

IMG-3200T

- 2 10/100BASE-TX Ethernet RJ45 ports
- Two software-selectable DB9 serial interfaces supporting RS-232, RS-422 and RS-485

IMG-3400T

- 2 10/100BASE-TX Ethernet RJ45 ports
- Four software-selectable DB9 serial interfaces supporting RS-232, RS-422 and RS-485

➤ Digital Input and Digital Output (IMG-3400T only)

- 2 digital input (DI)
- 2 digital output (DO)
- Integrate sensors into auto alarm system
- Transfer alarms to IP networks via SNMP Trap

➤ Serial Interface & Operation Modes

High-Speed Transmission

- Supports asynchronous serial data rates up to 921600bps

Versatile Serial Operation Modes

- Supports RTU Master mode
- Supports RTU Slave mode
- Supports ASCII Master mode
- Supports ASCII Slave mode

Industrial Protocol Conversion

- Supports protocol conversion between Modbus TCP and Modbus RTU/ASCII

Multi-Host Connectivity

- Supports up to 32 TCP slave connections in Master mode
- Supports up to 32 TCP master connections in Slave mode

Industrial IoT Integration (MQTT)

- Supports MQTT Client and built-in MQTT Broker functions
- Supports Transparent Publish, Topic Distribution and Transparent Subscribe mechanisms
- Supports Internal and External MQTT Broker connections
- Supports QoS 0/1/2, TLS encryption and Username/Password authentication

➤ **Management & Security**

Network Management

- Supports IPv4 and IPv6 dual stack management
- Supports ARP, ICMP, TCP/IP, UDP, HTTP/HTTPS server, DHCP client and SNMP v1/v2c/v3
- Supports LLDP protocol
- Supports IP NTP (Network Time Protocol) and DNS management

Secure Management

- Supports HTTPS encrypted management
- Supports Certificate Management
- Supports SNMP v3
- Supports RADIUS/TACACS+ user authentication
- Supports Secure Boot technology for system integrity protection

Configuration & Maintenance

- Supports firmware upgrade
- Supports configuration backup and restore
- Supports HTTP/HTTPS Web management
- Supports PLANET Smart Discovery Utility
- Supports PLANET NMS System and CloudNMS

Intelligent Event Notification:

- Comprehensive alarm mechanism via Event Log, Syslog, SNMP Trap, and Relay Alarm output

➤ **Industrial Case & Installation**

Rugged Industrial Design

- IP30 rugged metal enclosure
- DIN-rail and wall-mount installation
- Operating temperature from -40 to 75°C
- Free fall, shock and vibration resistance for industrial environments

Redundant Power Design

- Dual redundant power input supporting 9~48V DC and 24V AC
- Reverse polarity protection
- Supports hardware automatic failover mechanism for uninterrupted operation

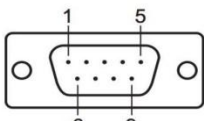
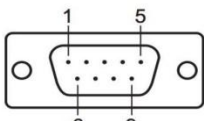
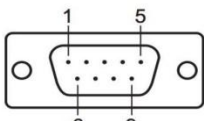
Electrical Protection

- Supports 6000V DC Ethernet ESD protection
- Supports 2KV surge protection

Diagnostics & Hardware Control

- Extensive LED indicators for network and serial status diagnosis
- Reset button for system reboot and factory default restoration
- Buzzer reset button for muting the alarm buzzer (IMG-3200T & IMG-3400T only)

1.5 Product Specifications

Product	IMG-3100T	IMG-3105AT	IMG-3200T	IMG-3400T																																																		
Serial Interface																																																						
Serial Ports	1 x DB9 male for RS-232 1 x 4-Pin Terminal block for RS-422 / RS-485		2 x DB9 male for RS-232/RS-422/RS-485	4 x DB9 male for RS-232/RS-422/RS-485																																																		
Serial Standards	RS-232 / 4-wire RS-422 or RS-485 / 2-wire RS-485																																																					
Baud Rate (Data Rate)	50bps to 921Kbps																																																					
Data Bits	5, 6, 7, 8																																																					
Parity Type	Odd, Even, None, Space, Mark																																																					
Stop Bit	1, 1.5, 2																																																					
Flow Control	RTS/CTS and DTR/DSR (RS-232 only) XON/XOFF																																																					
Signals	RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND RS-422: Tx+, Tx-, Rx+, Rx-, GND 4-wire RS-485: Tx+, Tx-, Rx+, Rx-, GND 2-wire RS-485: Data A (+), Data B (-), GND																																																					
Pin Assignment	<table><tr><td> Male DB9  </td><td>Pin</td><td>RS232</td><td>RS422 RS485-4W</td><td>RS485-2W</td></tr><tr><td></td><td>1</td><td>DCD</td><td>TxD+</td><td>--</td></tr><tr><td></td><td>2</td><td>RxD</td><td>TxD-</td><td>--</td></tr><tr><td></td><td>3</td><td>TxD</td><td>RxD-</td><td>Data-</td></tr><tr><td></td><td>4</td><td>DTR</td><td>RxD+</td><td>Data+</td></tr><tr><td></td><td>5</td><td>GND</td><td>GND</td><td>GND</td></tr><tr><td></td><td>6</td><td>DSR</td><td>--</td><td>--</td></tr><tr><td></td><td>7</td><td>RTS</td><td>--</td><td>--</td></tr><tr><td></td><td>8</td><td>CTS</td><td>--</td><td>--</td></tr><tr><td></td><td>9</td><td>--</td><td>--</td><td>--</td></tr></table>				Male DB9 	Pin	RS232	RS422 RS485-4W	RS485-2W		1	DCD	TxD+	--		2	RxD	TxD-	--		3	TxD	RxD-	Data-		4	DTR	RxD+	Data+		5	GND	GND	GND		6	DSR	--	--		7	RTS	--	--		8	CTS	--	--		9	--	--	--
Male DB9 	Pin	RS232	RS422 RS485-4W	RS485-2W																																																		
	1	DCD	TxD+	--																																																		
	2	RxD	TxD-	--																																																		
	3	TxD	RxD-	Data-																																																		
	4	DTR	RxD+	Data+																																																		
	5	GND	GND	GND																																																		
	6	DSR	--	--																																																		
	7	RTS	--	--																																																		
	8	CTS	--	--																																																		
	9	--	--	--																																																		
Serial Line Protection	-	-	2KV isolation protection 1KV (level 2) surge protection 15KV ESD protection																																																			
Operation Mode	Modbus RTU Master Modbus RTU Slave Modbus ASCII Master Modbus ASCII Slave																																																					
TCP Connections	Master mode: Up to 32 TCP Slave connections Slave mode: Up to 32 TCP Master connections																																																					
Ethernet Interface																																																						
Ethernet Ports	1 x RJ45	1 x SFP	2 x RJ45																																																			
Standard	10/100BASE-TX	100BASE-FX	10/100BASE-TX																																																			
Distance	100m	2 km to 120 km (depending on SFP module)	100m																																																			
Hardware Specifications																																																						
Installation	DIN-rail kit and wall-mount ear																																																					
Enclosure	IP 30 metal																																																					
Dimensions (W x D x H)	32 x 87.8 x 135 mm			50 x 87 x 135 mm																																																		
Weight	392g		477g	625g																																																		
LED Indicators	System:		System:	System:																																																		

	PWR1 (Green) PWR2 (Green) Alarm (Red) Port Interfaces : LNK/ACT (Green) RX (Amber) TX (Green)		PWR1 (Green) PWR2 (Green) Alarm (Red) SYS (Green) Port Interfaces : LNK/ACT (Green) RX (Amber) TX (Green)	PWR1 (Green) PWR2 (Green) Alarm (Red) SYS (Green) I/O (Red) Port Interfaces : LNK/ACT (Green) RX (Amber) TX (Green)
Power Requirements	9~48V DC, redundant power with reverse polarity protection 24V AC			
Power Consumption	Max. 2.4 watts/8.19BTU (Power on without any connection)	Max. 2.88 watts/9.83BTU (Power on without any connection)	Max. 3.24 watts/11.05BTU (Power on without any connection)	Max. 4.48 watts/15.28BTU (Power on without any connection)
	Max. 2.52 watts/8.6BTU (Full loading)	Max. 2.88 watts/9.83BTU (Full loading)	Max. 4.32 watts/14.74BTU (Full loading)	Max. 4.51 watts/15.39BTU (Full loading)
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2 Removable 6-pin terminal block for DI/DO interface (IMG-3400T only) Pin 1/2 for DI 1 & 2, Pin 3/4 for DO 1 & 2, Pin 5/6 for GND			
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V DC			
DI, DO	-	-	-	2 digital input (DI) Level 0: -24V~2.1V (±0.1V) Level 1: 2.1V~24V (±0.1V) Input load to 24V DC, 10mA max. 2 digital output (DO): Open collector to 24V DC, 100mA max.
ESD Protection	6KV			
Surge Protection	2KV			
Reset Button	< 5 sec: System reboot > 5 sec: Factory default			
Buzzer Reset	-	-	Push Button for Buzzer Muting	
Management				
Management Interfaces	HTTP Web management HTTPS Web management Windows-based VCOM Utility management SNMPv1, v2c and v3 PLANET Smart Discovery Utility PLANET on-promise NMS System and cloud-based CloudNMS			
IP Protocol	IPv4 / IPv6			
Time Management	NTP Client			
Name Service	DNS Client			
Network Protocol	LLDP			
System Maintenance	Firmware Upgrade Configuration Backup / Restore			
Diagnostic	Event Log			

	Syslog
Event Notification	SNMP Trap Relay Alarm
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 2737 Entity MIB (Version 2) RFC 2863 Interface Group MIB RFC 3635 Ethernet-like MIB
Security	
Hardware Security	Hardware-based Secure Boot Arm® TrustZone® Technology Hardware True Random Number Generator (TRNG) Hardware-accelerated AES, SHA, ECC and RSA Cryptographic Operations Hardware Key Store and OTP Protection for Secure Boot Keys
System Security	HTTPS Secure Web Management HTTP-to-HTTPS Redirection Certificate Management IP-based Management Access Control TLS 1.2 / TLS 1.3 SNMP v3 Authentication and Encryption
MQTT	
MQTT Operation Modes	MQTT Client Built-in MQTT Broker
MQTT Messaging	Retained Messages Last Will and Testament (LWT)
Publish Methods	Transparent Serial Data Publishing Data Mapping-based Publishing
Subscribe Methods	Transparent MQTT-to-Serial Data Forwarding
Quality of Service	MQTT QoS Level 0,1 and 2
Authentication	Username and Password
Transport Security	MQTT over TLS 1.2
Broker Connectivity	Built-in or External MQTT Broker
Standards Conformances	
Regulatory Compliance	FCC Part 15 Class A, CE Certification Class A
Stability Testing	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)
Standards	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX RFC 768 UDP RFC 793 TCP RFC 791 IP RFC 792 ICMP RFC 5905 NTPv4 RFC 1591 DNS (client only) RFC 1908 SNMPv2c

	RFC 2616 HTTP/1.1 RFC 2131 DHCP Client RFC 2732 Format for Literal IPv6 Addresses in URL's RFC 3315 DHCPv6 Client RFC 3513 IPv6 Addressing Architecture RFC 3596 DNSv6 RFC 4443 ICMPv6 EIA/TIA RS-232/422/485
Regulatory Approval	RoHS
Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)

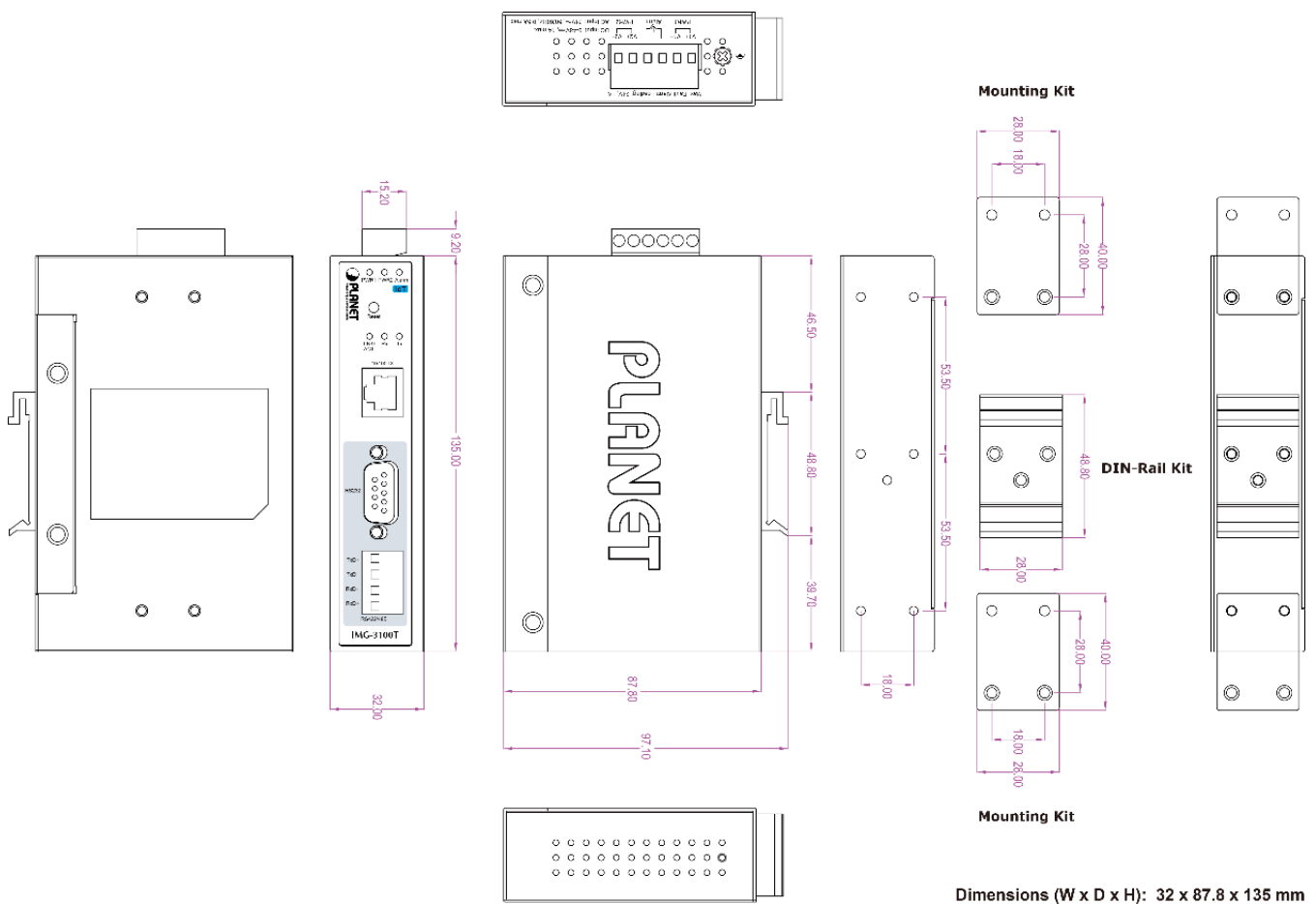
2 INSTALLATION

This section describes the hardware features and installation of the Modbus Gateway' components on the desktop or rack. For easier management and control of the Modbus Gateway, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the LED indicators. Before connecting any network device to the Modbus Gateway, please read this chapter completely.

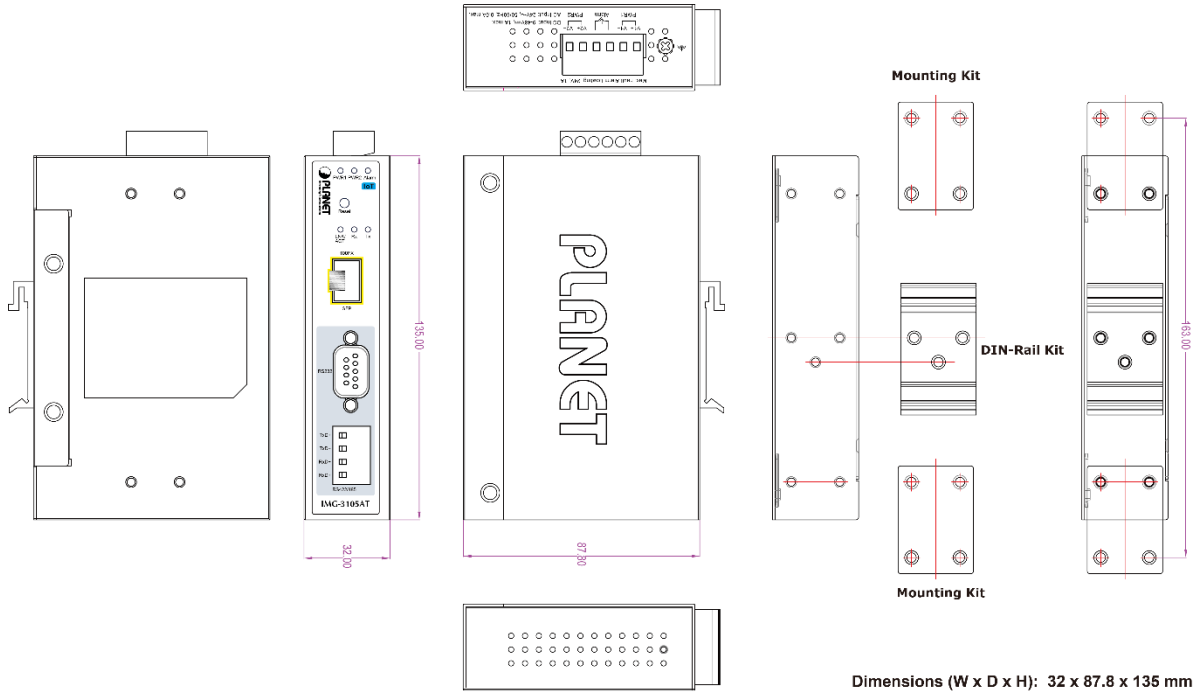
2.1 Hardware Description

2.1.1 Physical Dimensions

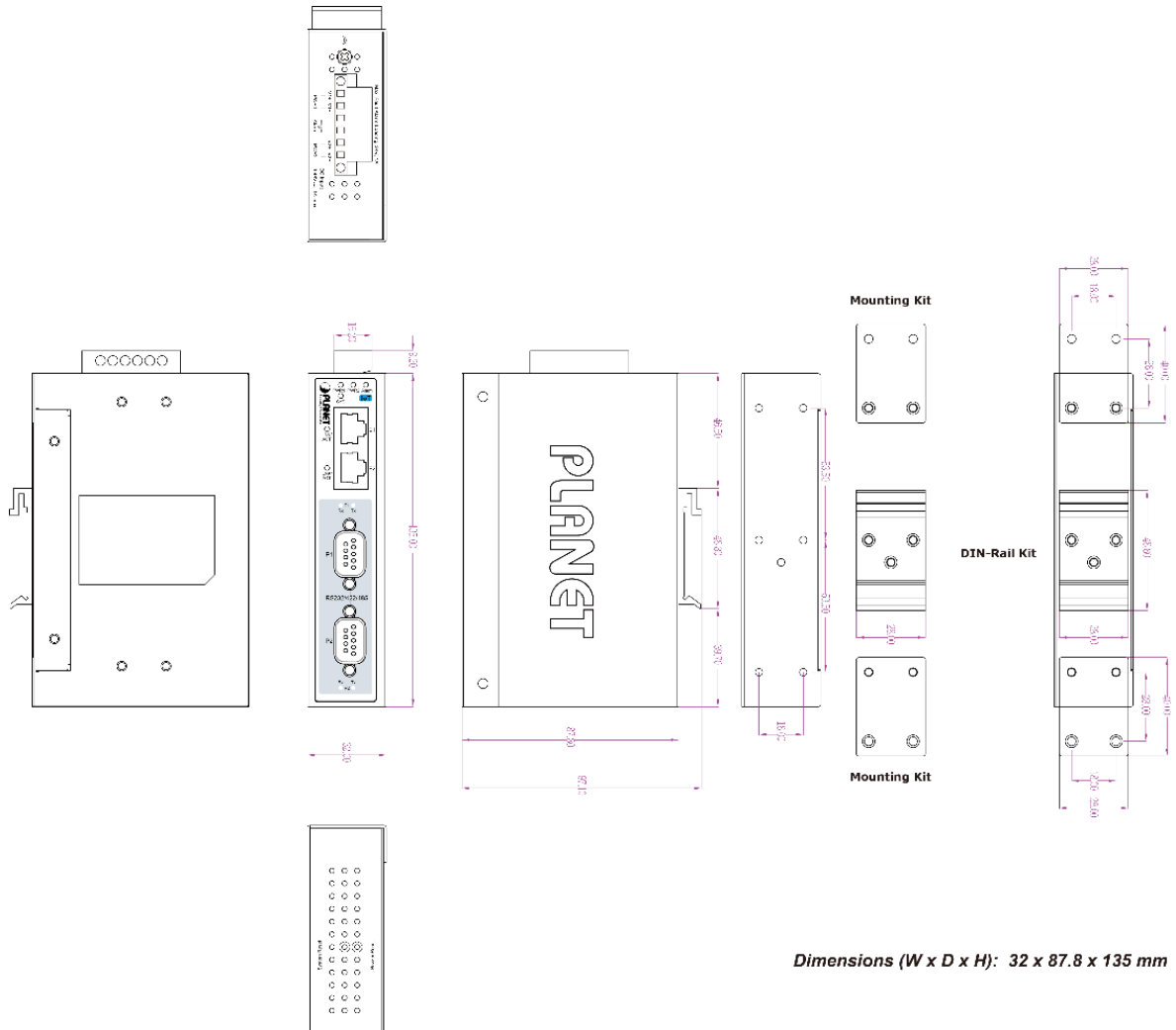
- IMG-3100T: 32 x 87.8 x 135 mm (W x D x H)



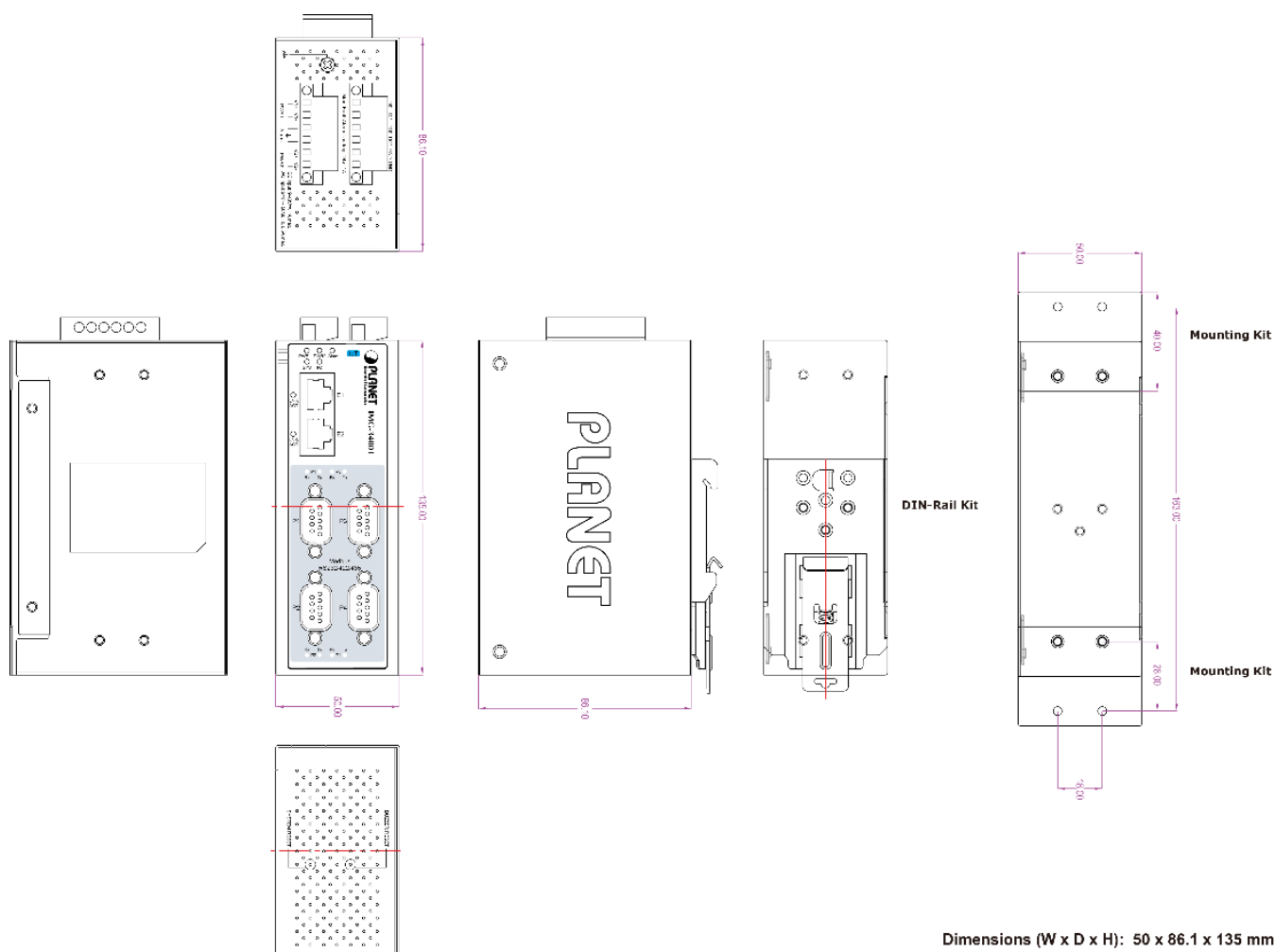
■ IMG-3105AT: 32 x 87.8 x 135 mm (W x D x H)



■ IMG-3200T: 32 x 87.8 x 135 mm (W x D x H)



- IMG-3400T: 50 x 87 x 135 mm (W x D x H)



2.1.2 Front Panels

The front panels of the Modbus Gateways are shown in Figure 2-1-1.

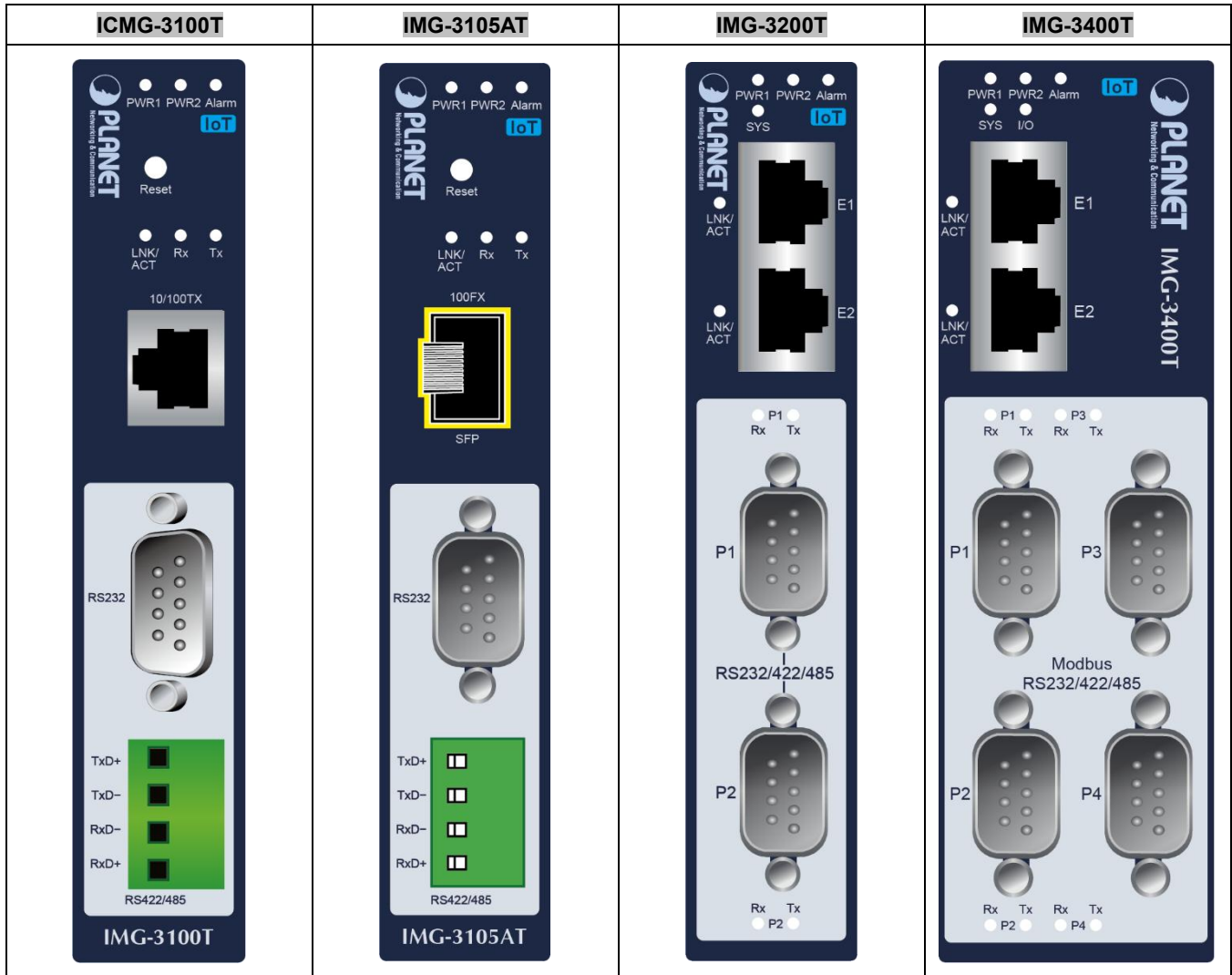


Figure 2-1-1: Front Panels of Modbus Gateways

■ Fast TP/SFP/SC interface

10/100BASE-TX copper, RJ45 twisted-pair: Up to 100 meters.

100BASE-FX SFP interface, Up to 2km~120km, may vary on SFP modules.

■ Serial Interface

Supports RS-232, RS-422, RS-485 2-wire and RS485 4-wire.

2.2 Front Panels

The Reset Buttons of the Modbus Gateways are shown in Figure 2-1-2.

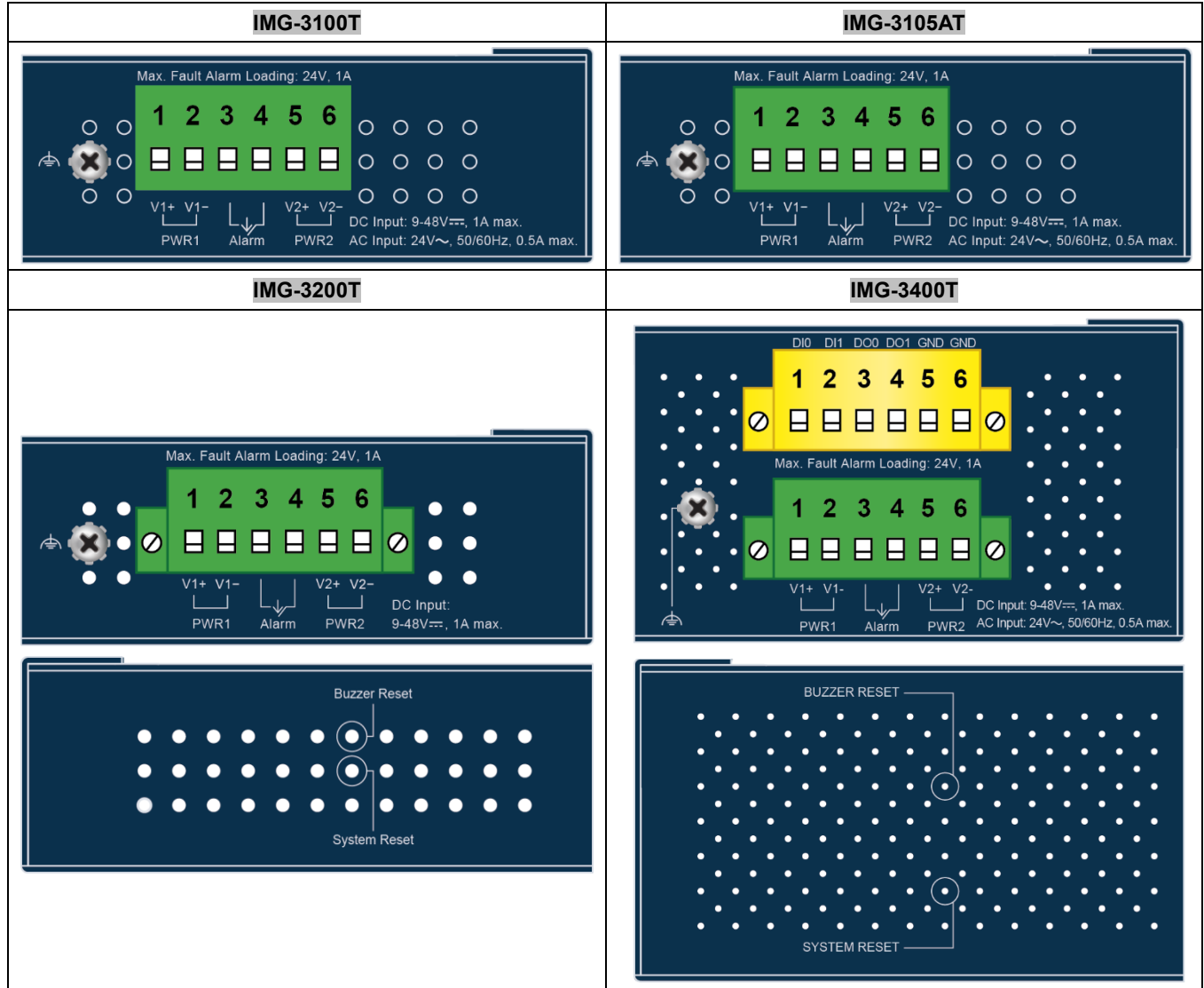


Figure 2-1-2: Reset Button of Modbus Gateways

■ Reset button

On the bottom panel, the reset button is designed for rebooting the system and stopping the buzzer. The following is the summary table of the reset button functions:

Reset Button	Reset Button Pressed and Released	Function
System Reset	< 5 sec: System reboot	Reboot the Modbus Gateway
	> 5 sec: Factory default	Reset the Modbus Gateway to Factory Default configuration. The Modbus Gateway will then reboot and load the default settings as shown below: - Default Username: admin - Default Password: cs + the last 6 characters of the MAC ID in lowercase - Default IP address: 192.168.0.100 - Subnet mask: 255.255.255.0 - Default Gateway: 192.168.0.254
Buzzer Reset	>1 sec	Stop the buzzer

2.2.1 LED Indications

The front panel LEDs indicate the instant status of power and system status, port links and data activity; they help monitor and troubleshoot when needed.

IMG-3100T

• System

LED	Color	Function	
PWR1	Green	Lights	Lights to indicate that the Switch has power.
PWR2	Green	Lights	Lights to indicate that the Switch has power.
Alarm	RED	Lights	Lights to indicate that the system defined alarm events
10/100 LNK/ACT	Green	Lights	To indicate the port is running in 10/100Mbps speed and successfully established.
		Blink	To indicate that the device is actively sending or receiving data over that port.
Rx	Amber	Blink	To indicate that the device is actively receiving serial data.
Tx	Green	Blink	To indicate that the device is transmitting serial data.

IMG-3105AT

- System

LED	Color	Function	
PWR1	Green	Lights	Lights to indicate that the Switch has power.
PWR2	Green	Lights	Lights to indicate that the Switch has power.
Alarm	RED	Lights	Lights to indicate that the system defined alarm events
100 LNK/ACT	Green	Lights	To indicate the port is running in 100Mbps speed and successfully established.
		Blink	To indicate that the device is actively sending or receiving data over that port.
Rx	Amber	Blink	To indicate that the device is actively receiving serial data.
Tx	Green	Blink	To indicate that the device is transmitting serial data.

IMG-3200T

- System

LED	Color	Function	
PWR1	Green	Lights	Lights to indicate that the Switch has power.
PWR2	Green	Lights	Lights to indicate that the Switch has power.
Alarm	RED	Lights	Lights to indicate that the system defined alarm events
SYS	Green	Lights	To indicate that the system has started successfully and is operating normally.
10/100 LNK/ACT	Green	Lights	To indicate the port is running in 10/100Mbps speed and successfully established.
		Blink	To indicate that the device is actively sending or receiving data over that port.
Rx	Amber	Blink	To indicate that the device is actively receiving serial data.
Tx	Green	Blink	To indicate that the device is transmitting serial data.

IMG-3400T

- System

LED	Color	Function	
PWR1	Green	Lights	Lights to indicate that the Switch has power.
PWR2	Green	Lights	Lights to indicate that the Switch has power.
Alarm	RED	Lights	Lights to indicate that the system defined alarm events
SYS	Green	Lights	To indicate that the system has started successfully and is operating normally.
I/O	RED	Lights	Lights to indicate that Switch input power or port has failed or DI has event.
10/100 LNK/ACT	Green	Lights	To indicate the port is running in 10/100Mbps speed and successfully established.
		Blink	To indicate that the device is actively sending or receiving data over that port.
Rx	Amber	Blink	To indicate that the device is actively receiving serial data.
Tx	Green	Blink	To indicate that the device is transmitting serial data.

Wiring the Power Inputs

The upper panel of the Modbus Gateways indicates a DC inlet power socket and consists of one terminal block connector within 6 contacts. Please follow the steps below to insert the power wire.

1. Insert positive/negative DC power wires into **Contacts 1 and 2 for Power 1**, or **Contacts 5 and 6 for Power 2**. Figure 2-1-3 to 2-1-5 show PWR1 and PWR2 of the Modbus Gateways

■ **IMG-3100T/IMG-3105AT: 9~48V DC or 24V AC**

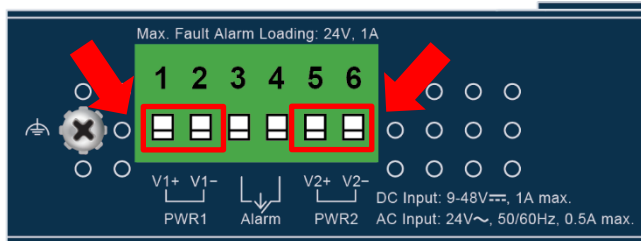


Figure 2-1-3 IMG-3100T/IMG-3105AT Upper Panel

■ **IMG-3200T: 9~48V DC or 24V AC**

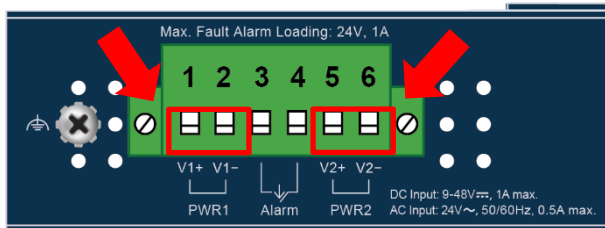


Figure 2-1-4 IMG-3200T Upper Panel

■ **IMG-3400T: 9~48V DC or 24V AC**

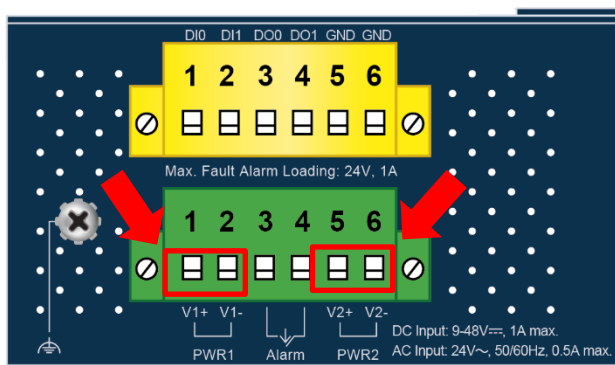


Figure 2-1-5 IMG-3400T Upper Panel

2. Tighten the wire-clamp screws for preventing the wires from loosening.



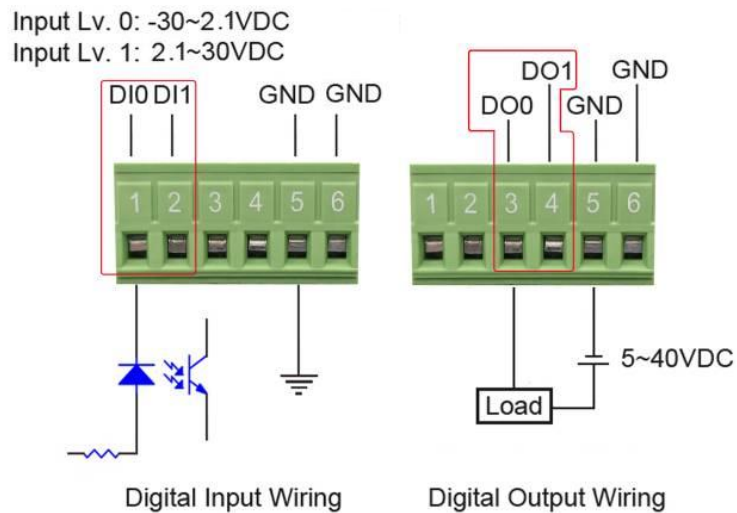
1	2	3	4	5	6
V1+	V1-			V2+	V2-
Power 1		Fault		Power 2	

Figure 2-1-6 PWR1 & PWR2 pina of terminal block.

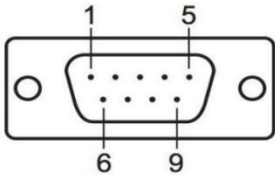


The wire gauge for the terminal block should be in the range from 12 to 24 AWG.

3. DI/DO Connector of IMG-2400T:



2.2.2 Serial Port Pin Define

<i>Male DB9</i>	<i>Pin</i>	<i>RS232</i>	<i>RS422 RS485-4W</i>	<i>RS485-2W</i>
	1	DCD	TxD+	--
	2	RxD	TxD-	--
	3	TxD	RxD-	Data-
	4	DTR	RxD+	Data+
	5	GND	GND	GND
	6	DSR	--	--
	7	RTS	--	--
	8	CTS	--	--
	9	--	--	--

2.2.3 4-pin Terminal Block PIN Assignment

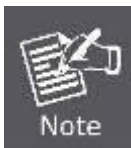
<i>Terminal Block</i>	<i>Pin</i>	<i>RS-422 RS-485-4W</i>	<i>RS-485-2W</i>
☐ 1 ☐ 2 ☐ 3 ☐ 4	1	TxD+(A)	--
	2	TxD-(B)	--
	3	RxD-(B)	Data-(B)
	4	RxD+(A)	Data+(A)

2.3 Installing the Modbus Gateway

This section describes how to install your Modbus Gateway and make connections to the Modbus Gateway. Please read the following section and perform the procedure in the order being presented. To install your Modbus Gateway on a desktop or rack, simply complete the following steps.

2.3.1 Installation Steps

1. **Unpack the Modbus Gateway**
2. **Check if the DIN-rail bracket is screwed on the Modbus Gateway or not.** If the DIN-rail bracket is not screwed on the **Modbus Gateway**, please refer to **DIN-rail Mounting** section for DIN-rail installation. If users want to wall-mount the **Modbus Gateway**, please refer to the **Wall Mount Plate Mounting** section for wall-mount plate installation.
3. **To hang the Modbus Gateway on the DIN-rail track or wall.**
4. **Power on the Modbus Gateway.** Please refer to the **Wiring the Power Inputs** section for knowing the information about how to wire the power. The power LED on the **Modbus Gateway** will light up. Please refer to the **LED Indicators** section for indication of LED lights.
5. **Prepare Network cables for Ethernet connection.**
 - Use standard network (UTP) cables with RJ45
 - Use Multi-mode or Single-mode fiber patch cord with LC connector and 100BASE-FX SFP transceiver (IMG-3105AT only).
6. **Insert one side of RJ45 cable (category 5) or Fiber cable into the Modbus Gateway Ethernet port** (RJ45/SFP port) while the other side to the network device's Ethernet port (RJ45/SFP port), e.g., Switch PC or Server. The "LNK/ACT" LED on the **Modbus Gateway** will light up when the cable is connected with the network device. Please refer to the **LED Indicators** section for LED light indication.



Make sure that the connected network devices support MDI/MDI-X. If it does not support, use the crossover Category 5 cable.

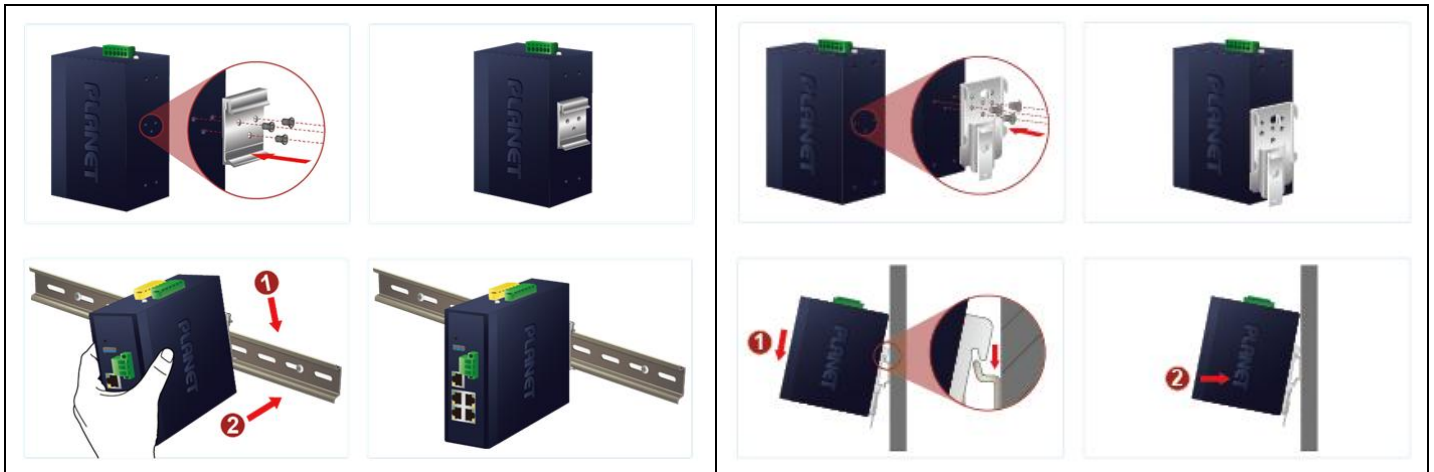
7. **When all connections are set and all LED lights show normal, the installation is completed.**

2.3.2 DIN-rail Mounting

This section describes how to install the **Modbus Gateway**. There are two methods to install the **Modbus Gateway** -- DIN-rail mounting and wall-mount plate mounting. Please read the following section and perform the procedure in the order being presented.



Follow all the DIN-rail installation steps as shown in the example.



*For IMG-3100T, IMG-3150AT, IMG-3200T

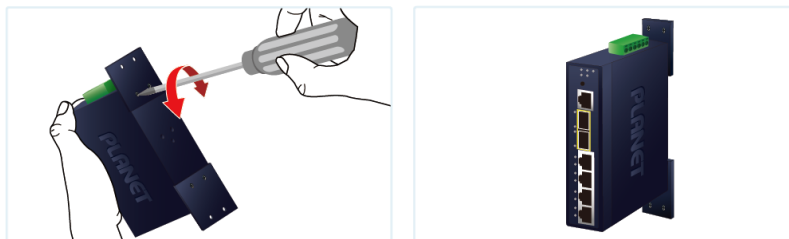
*For IMG-3400T

Place the bracket on the back of the device and with the given 3 screws, tighten them. Slide the device with the bracket mounted through the DIN-rail to finish the installation.

To install the **Modbus Gateway** on the wall, please follow the instructions below.



Follow all the DIN-rail installation steps as shown in the example.



Place mounting plates on the back of the device, and tighten them with the given screws. Then put the device with the plates mounted on the wall, and screw them of finish the installation.

3 MODBUS GATEWAY MANAGEMENT

This chapter covers the following topics as to how to manage the Modbus Gateway:

- Requirements
- Web Management
- Remote Management
- PLANET Smart Discovery Utility

3.1 Requirements

- The Modbus Gateway provides local and remote login interface for management purposes. The following equipment is necessary for further management:
- Workstations running Windows 7/8/10/11, macOS 10.12 or later, Linux Kernel 2.6.18 or later, or other modern operating systems are compatible with TCP/IP Protocols.
- Workstations are installed with Ethernet NIC (Network Interface Card)
- Ethernet Port Connection
 - **Network cables :**
 - Use standard network (UTP) cables with RJ45 connectors.
 - Use Multi-mode or Single-mode fiber patch cord with LC connector and 100BASE-FX SFP transceiver (IMG-3105AT only).
 - The above PC is installed with Web browser.



It is recommended to use Google Chrome, Microsoft Edge or Firefox to access The Modbus Gateway. If the Web interface of The Modbus Gateway is not accessible, please turn off the anti-virus software or firewall and then try it again.

3.2 Web Management

The Modbus Gateway offers management features that allow users to manage the Modbus Gateway from anywhere on the network through a standard browser such as Microsoft Internet Explorer. After you set up your IP address for the switch, you can access the Modbus Gateway's Web interface applications directly in your Web browser by entering the IP address of the Modbus Gateway.

For example, the default IP address of the Modbus Gateway is **192.168.0.100**, then the manager PC should be set to **192.168.0.x** (where x is a number between 1 and 254, except 100), and the default subnet mask is 255.255.255.0.

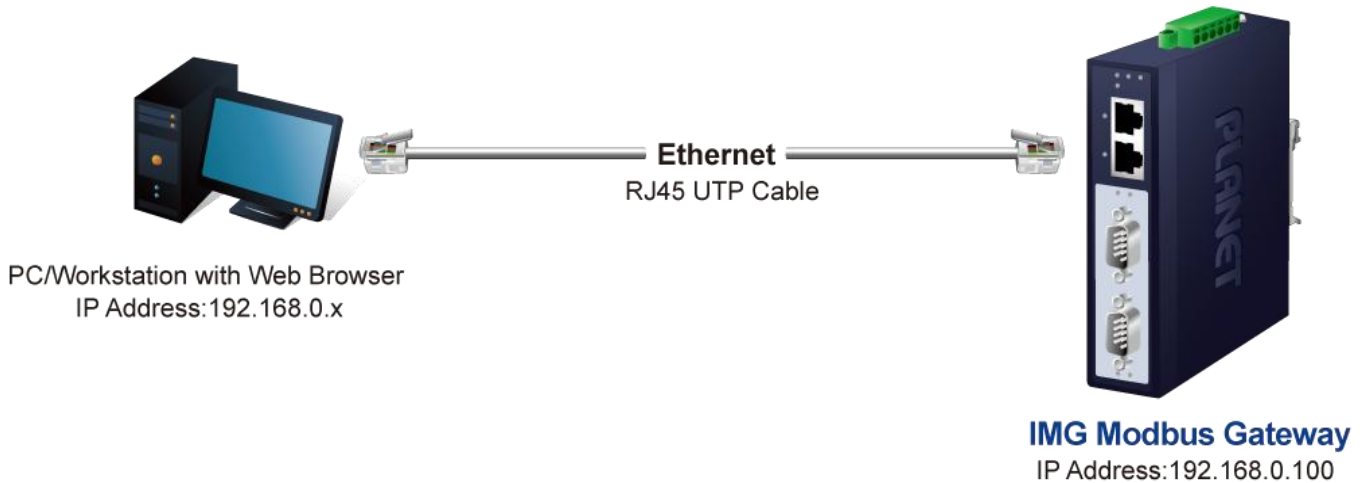


Figure 3-2-1: Web Management

You can then use your Web browser to list and manage the Modbus Gateway configuration parameters from one central location, just as if you were directly connected to the Modbus Gateway's console port. Web Management requires either **Microsoft Internet Explorer 7.0** or later, **Safari** or **Mozilla Firefox 1.5** or later.

3.2.1 Logging in to the Modbus Gateway

1. When the following dialog box appears, please enter the default user name "**admin**" and and password. Refer to **Section 3-2-1** to determine your initial login password.

Default IP Address: **192.168.0.100**

Default User Name: **admin**

Default Password: **cs + the last 6 characters of the MAC ID in lowercase**

2. Find the MAC ID on your device label. The default password is "cg" followed by the last six lowercase characters of the

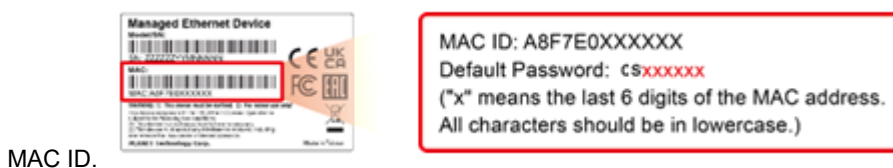


Figure 3-2-2: Modbus Gateway MAC ID Label

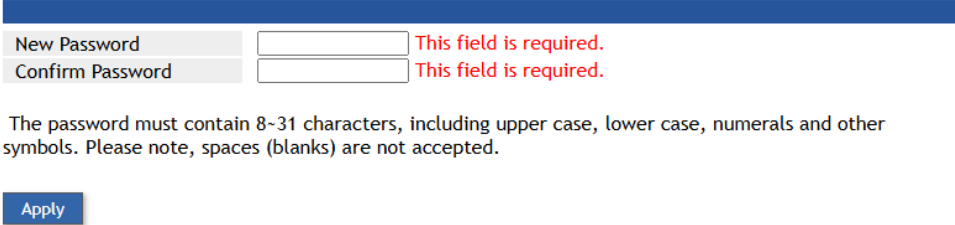


The login screen features the PLANET logo at the top. Below it, there are two input fields: one labeled 'User' and one labeled 'Password'. A 'Login' button is positioned below the password field.

Figure 3-2-3: Login Screen

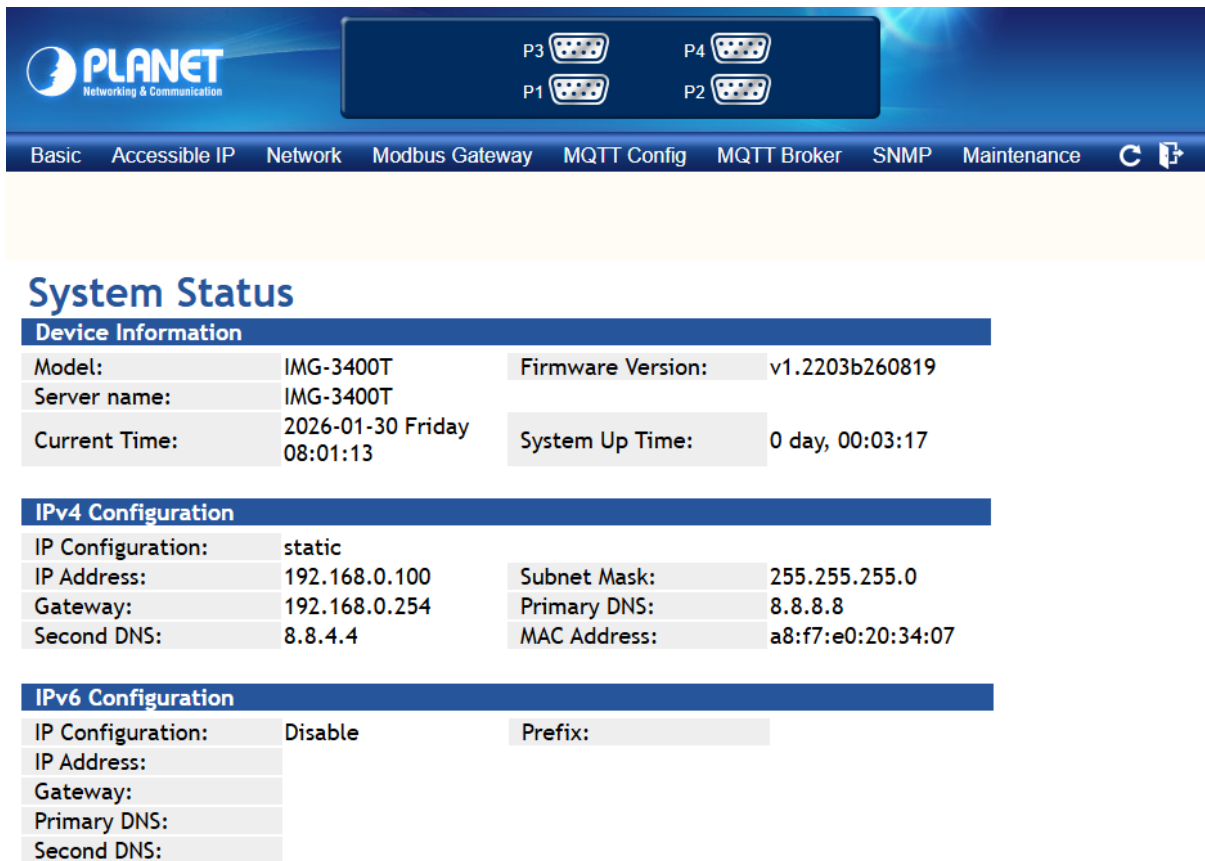
- After logging in, you will be prompted to change the initial password to a permanent one.

Change Password



The 'Change Password' form includes two input fields: 'New Password' and 'Confirm Password'. Both fields have a red error message: 'This field is required.' Below the fields, a text box explains: 'The password must contain 8-31 characters, including upper case, lower case, numerals and other symbols. Please note, spaces (blanks) are not accepted.' An 'Apply' button is at the bottom.

Figure 3-2-4: Create a New Password



The main screen displays the PLANET logo and a navigation bar with the following tabs: Basic, Accessible IP, Network, Modbus Gateway, MQTT Config, MQTT Broker, SNMP, and Maintenance. A status bar shows four ports: P1, P2, P3, and P4.

System Status

Device Information			
Model:	IMG-3400T	Firmware Version:	v1.2203b260819
Server name:	IMG-3400T		
Current Time:	2026-01-30 Friday 08:01:13	System Up Time:	0 day, 00:03:17

IPv4 Configuration			
IP Configuration:	static	Subnet Mask:	255.255.255.0
IP Address:	192.168.0.100	Primary DNS:	8.8.8.8
Gateway:	192.168.0.254	MAC Address:	a8:f7:e0:20:34:07
Second DNS:	8.8.4.4		

IPv6 Configuration	
IP Configuration:	Disable
IP Address:	
Gateway:	
Primary DNS:	
Second DNS:	

Figure 3-2-5: Web Main Screen of Serial Device Sever

3.3 PLANET Smart Discovery Utility

For easily listing the Modbus Gateway in your Ethernet environment, the Planet Smart Discovery Utility is an ideal solution. The following installation instructions are to guide you to running the Planet Smart Discovery Utility.

1. Download the Planet Smart Discovery Utility from the administrator PC.
2. Run this utility as the following screen appears.

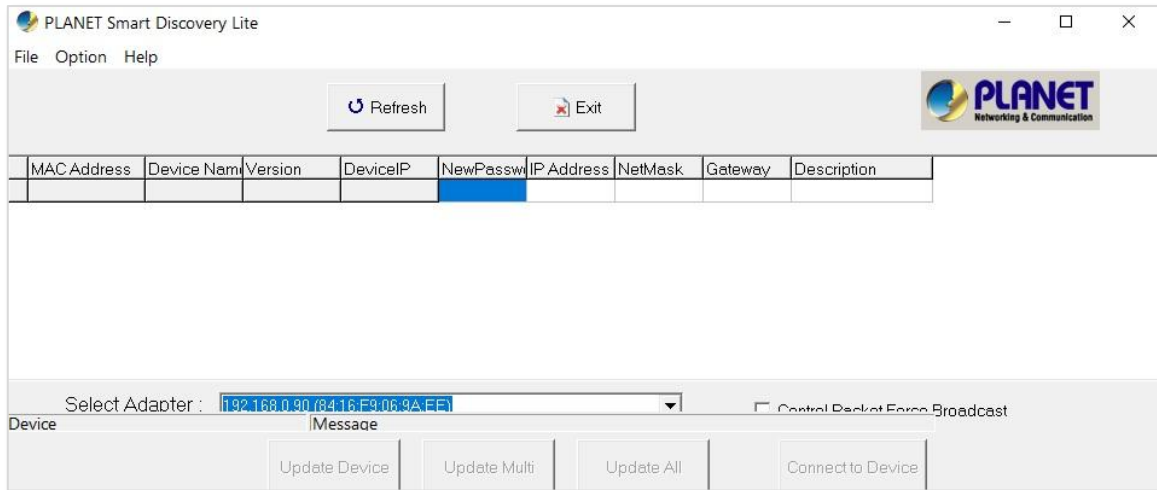


Figure 3-3-1: Planet Smart Discovery Utility Screen



If there are two LAN cards or above in the same administrator PC, choose a different LAN card by using the “**Select Adapter**” tool.

3. Press the “**Refresh**” button for the currently connected devices in the discovery list as shown in Figure 3-3-2.:

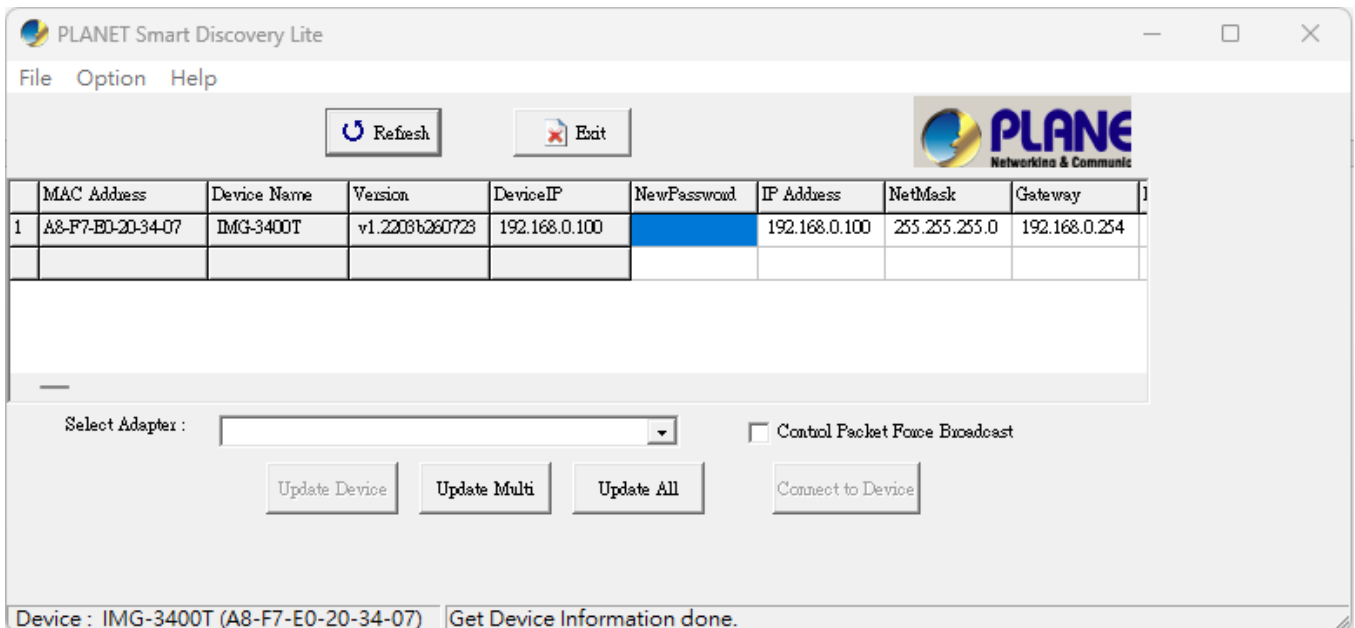


Figure 3-3-2: Planet Smart Discovery Utility Screen

1. This utility shows all the necessary information from the devices, such as MAC address, device name, firmware version, and device IP subnet address. It can also assign new password, IP subnet address and description to the devices.
2. After setup is completed, press the “**Update Device**”, “**Update Multi**” or “**Update All**” button to take effect. The functions of the 3 buttons above are shown below:
 - **Update Device:** Use current setting on one single device.
 - **Update Multi:** Use current setting on multi-devices.
 - **Update All:** Use current setting on whole devices in the list.

The same functions mentioned above also can be found in “**Option**” tools bar.

3. To click the “**Control Packet Force Broadcast**” function, it allows you to assign a new setting value to the Web Smart Switch under a different IP subnet address.
4. Press the “**Connect to Device**” button and the Web login screen appears as shown in [Figure 3-3-2](#).
5. Press the “**Exit**” button to shut down the Planet Smart Discovery Utility.

4 WEB CONFIGURATION

4.1 Introduction

The device can be configured with your Web browser. Before configuring, please make sure your PC is under the same IP segment with the device.

4.2 Logging in to the Modbus Gateway

This section introduces the configuration and functions of the Web-based management from Modbus Gateway.

About Web-based Management

The Modbus Gateway offers management features that allow users to manage the Modbus Gateway from anywhere on the network through a standard browser such as Microsoft Internet Explorer.



It is recommended to use Google Chrome, Microsoft Edge or Firefox to access The Modbus Gateway. If the Web interface of The Modbus Gateway is not accessible, please turn off the anti-virus software or firewall and then try it again.

1. When the following dialog box appears, please enter the default user name "**admin**" and and password. Refer to **Section 4-2-1** to determine your initial login password.

Default IP Address: **192.168.0.100**

Default User Name: **admin**

Default Password: **cs + the last 6 characters of the MAC ID in lowercase**

2. Find the MAC ID on your device label. The default password is "cg" followed by the last six lowercase characters of the

MAC ID.

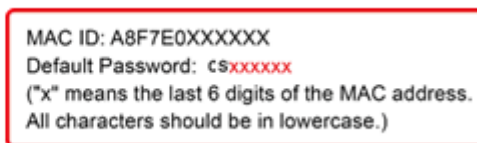


Figure 4-2-1: Modbus Gateway MAC ID Label

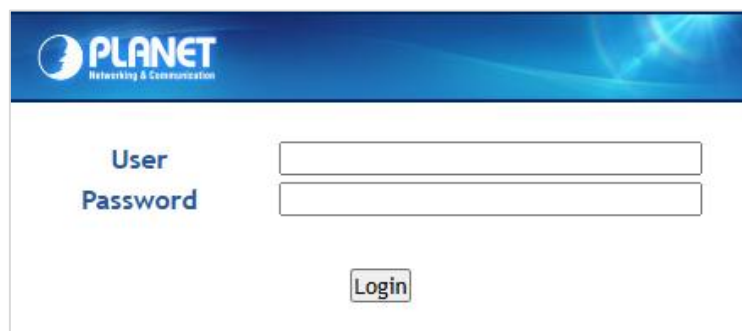


Figure 4-2-2: Login Screen

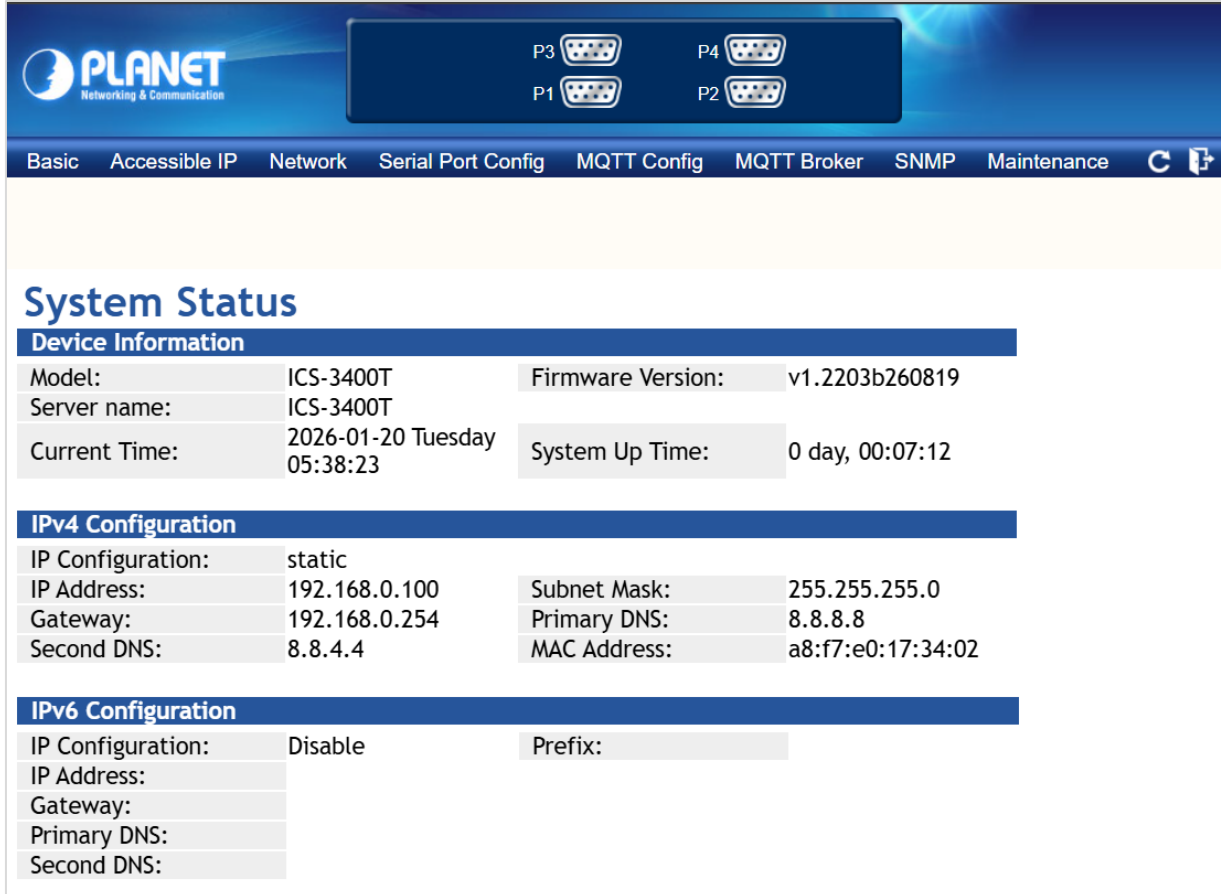
- After logging in, you will be prompted to change the initial password to a permanent one.

Change Password

New Password		This field is required.
Confirm Password		This field is required.

The password must contain 8-31 characters, including upper case, lower case, numerals and other symbols. Please note, spaces (blanks) are not accepted.

Figure 4-2-3: Create a New Password



The screenshot shows the PLANET Modbus Gateway web interface. At the top, there's a header with the PLANET logo and a navigation menu: Basic, Accessible IP, Network, Serial Port Config, MQTT Config, MQTT Broker, SNMP, Maintenance. Below the header, there's a 'System Status' section with three sub-sections: Device Information, IPv4 Configuration, and IPv6 Configuration.

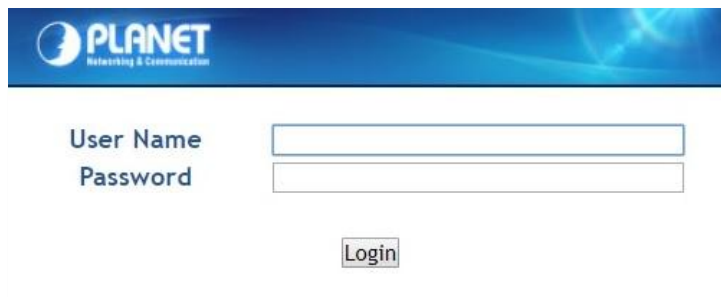
Device Information			
Model:	ICS-3400T	Firmware Version:	v1.2203b260819
Server name:	ICS-3400T		
Current Time:	2026-01-20 Tuesday 05:38:23	System Up Time:	0 day, 00:07:12

IPv4 Configuration			
IP Configuration:	static		
IP Address:	192.168.0.100	Subnet Mask:	255.255.255.0
Gateway:	192.168.0.254	Primary DNS:	8.8.8.8
Second DNS:	8.8.4.4	MAC Address:	a8:f7:e0:17:34:02

IPv6 Configuration			
IP Configuration:	Disable	Prefix:	
IP Address:			
Gateway:			
Primary DNS:			
Second DNS:			

Figure 4-2-4: Web Main Screen of Modbus Gateway

- When the following login screen appears, please enter the default username **"admin"** with password **"admin"** (or the username/password you have changed via console) to log in the main screen of **Modbus Gateway**. The login screen in Figure 4-2-5 appears.



The screenshot shows the login screen of the PLANET Modbus Gateway. It features the PLANET logo at the top. Below the logo, there are two input fields: 'User Name' and 'Password'. A 'Login' button is located below the password field.

Figure 4-2-5: Login Screen

The Modbus Gateway Menu on the top of the Web page lets you access all the commands and statistics The Modbus Gateway provides. The Modbus Gateway Menu always contains one or more buttons, such as “**Basic**”, “**Accessible IP**”, “**Modbus Gateway**”, “**MQTT Config**” “**MQTT Broker**” “**SNMP**” and “**Maintenance**”.

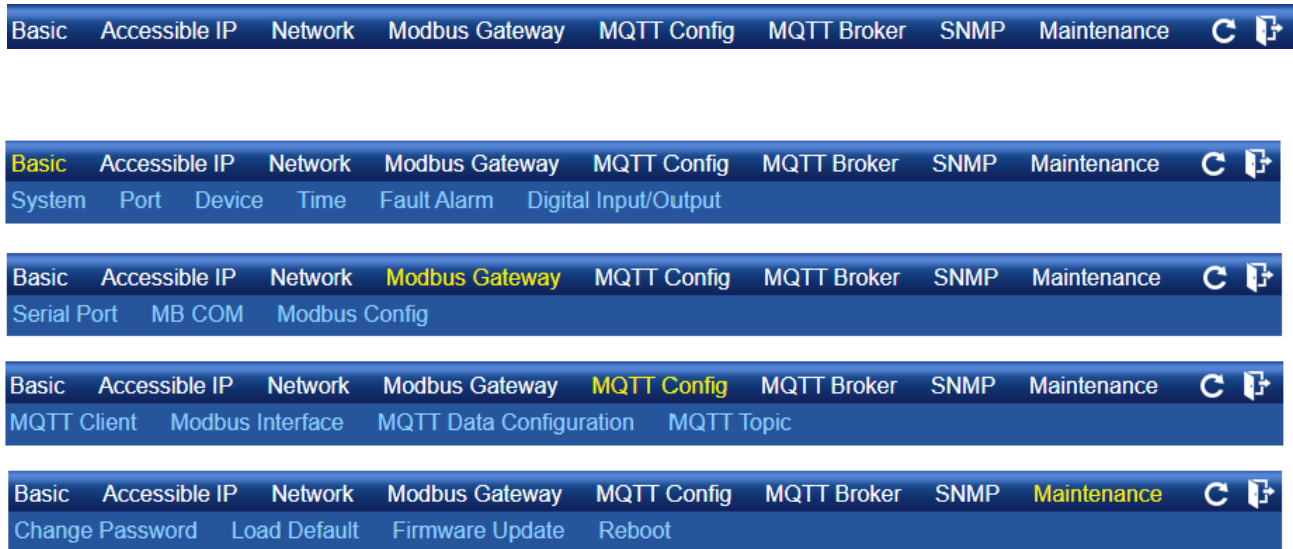
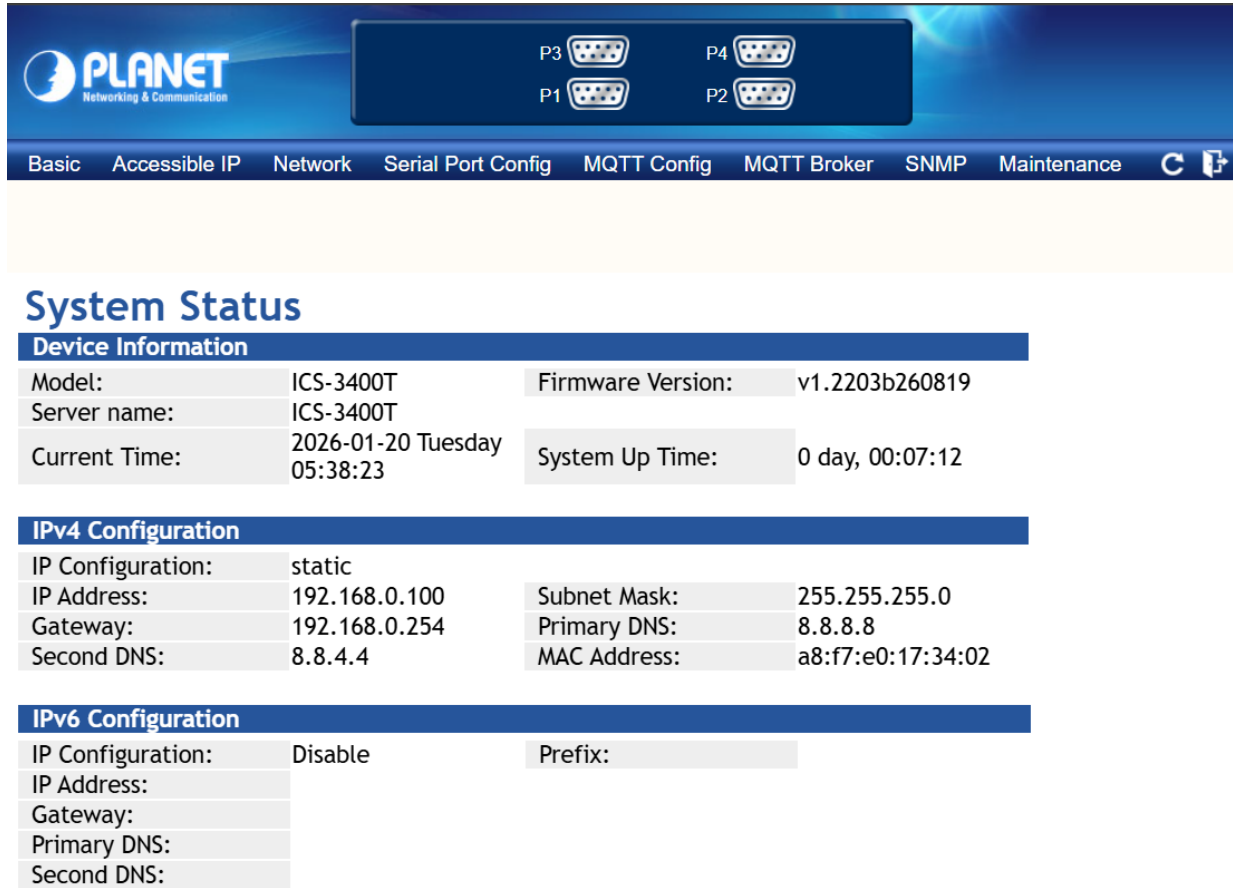


Figure 4-2-6: Modbus Gateway Menu

Now, you can use the Web management interface to continue the Switch management. Please refer to the user's manual for more.

4.3 Main Web Page

The Modbus Gateway provides a Web-based browser interface for configuring and managing it. This interface allows you to access the Modbus Gateway using the Web browser of your choice. The main web page is shown in [Figure 4-3-1](#)



System Status

Device Information

Model:	ICS-3400T	Firmware Version:	v1.2203b260819
Server name:	ICS-3400T		
Current Time:	2026-01-20 Tuesday 05:38:23	System Up Time:	0 day, 00:07:12

IPv4 Configuration

IP Configuration:	static		
IP Address:	192.168.0.100	Subnet Mask:	255.255.255.0
Gateway:	192.168.0.254	Primary DNS:	8.8.8.8
Second DNS:	8.8.4.4	MAC Address:	a8:f7:e0:17:34:02

IPv6 Configuration

IP Configuration:	Disable	Prefix:	
IP Address:			
Gateway:			
Primary DNS:			
Second DNS:			

Figure 4-3-1: Web Main Page

Main Menu

Via the Web Management, the administrator can set up the Modbus Gateway by selecting the functions that are listed in the Main Function. The screen in [Figure 4-3-2](#) appears.



Figure 4-3-2: Modbus Gateway Main Functions Menu

Object	Description
• Basic	The essential device information of Modbus Gateway.
• Accessible IP	To configure IP address lists to prevent unauthorized access.
• Network	To configure IP address information of Modbus Gateway.
• Modbus Gateway	Configures the Modbus gateway operation mode and related Ethernet and serial communication settings.
• MQTT Config	Configures MQTT client connections and data transmission settings.

• MQTT Broker	Configures the built-in MQTT Broker settings.
• SNMP	To configure SNMP information of Modbus Gateway.
• Maintenance	The management of Modbus Gateway.
• 	Refresh the page
• 	Log out the Modbus Gateway.

4.4 Basic

Use the System menu items to display and configure basic administrative details of the Modbus Gateway. Under the Basic, the following topics are provided to configure and view the system information. This section has the following items:

System Port Device Time Fault Alarm Digital Input/Output

4.4.1 System

The System page provides basic information for the current device. System page helps an administrator to identify software version, system uptime and IP address information. The screen in [Figure 4-4-1](#) appears.

System Status

Device Information			
Model:	IMG-3400T	Firmware Version:	v1.2203b260819
Server name:	IMG-3400T		
Current Time:	2026-01-30 Friday 10:42:24	System Up Time:	0 day, 02:44:29
IPv4 Configuration			
IP Configuration:	static		
IP Address:	192.168.0.100	Subnet Mask:	255.255.255.0
Gateway:	192.168.0.254	Primary DNS:	8.8.8.8
Second DNS:	8.8.4.4	MAC Address:	a8:f7:e0:20:34:07
IPv6 Configuration			
IP Configuration:	Disable	Prefix:	
IP Address:			
Gateway:			
Primary DNS:			
Second DNS:			

Figure 4-4-1: System Status Page Screenshot

The page includes the following fields:

Device Information

Object	Description
• Model	Specifies the device model name.
• Firmware Version	The firmware version of Modbus Gateway.
• Server Name	The system name configured in Basic/Device Name.
• Current Time	The current (GMT) system time and date.
• System Up Time	The period of time the device has been operational.

IPv4 Configuration

Object	Description
• IP Configuration	The status of IPv4 configuration.
• IP Address	The current IPv4 address of the device.
• Subnet Mask	The current IPv4 subnet mask of the device.
• Gateway	The current IPv4 gateway of the device.
• Primary DNS	The current first DNS server of the device.
• Second DNS	The current second DNS server of the device.
• MAC Address	Specifies the device MAC address.

IPv6 Configuration

Object	Description
• IP Configuration	The status of IPv6 configuration.
• IP Address	The current IPv6 address of the device.
• Prefix	The IPv6 network mask, in number of bits (prefix length).
• Gateway	The current gateway for the IPv6 interface.
• Primary DNS	The current first DNS server of the device.
• Second DNS	The current second DNS server of the device.

4.4.2 Port

This Port page displays the status of each port, including operation mode and serial settings. The screen in [Figure 4-4-2](#) appears.

Port Status

Index	Operation Mode	Baud Rate	Stop Bits	Data Bits	Parity	Interface	Flow Control
1	MQTT	115200	1	8	None	RS-232	None
2	RTU_Slave	115200	1	8	None	RS-232	None
3	RTU_Slave	115200	1	8	None	RS-232	None
4	RTU_Slave	115200	1	8	None	RS-232	None

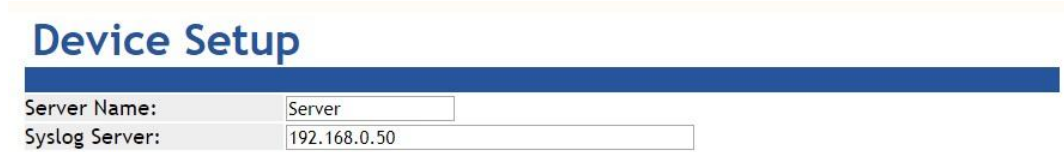
Figure 4-4-2: Port Status Page Screenshot

The following column shows the Port statuses:

Object	Description
• Index.	The serial number (No.) indicates port number. It can be directly linked to the corresponding page settings.
• Operation Mode	The current operation mode of Modbus Gateway.
• Baud Rate	The rate of data transmission to and from the attached serial device.
• Stop Bits	The stop bit follows the data and parity bits in serial communication. It indicates the end of transmission. The default is 1 .
• Data Bits	Indicates the number of the bits in a transmitted data package. The default is 8 .
• Parity	Checks for the parity type. The default value is none .
• Interface	The industrial device server supports three interfaces. The default value is RS-232 . ■ RS-232 ■ RS-422 ■ RS-485 2-Wire ■ RS-485 4-Wire
• Flow Control	The method is used to suspend and resume data transmission to ensure that data is not lost. The default value is none .

4.4.3 Device

This page provides configuration of device name and syslog server. The screen in [Figure 4-4-3](#) appears.



The screenshot shows the 'Device Setup' page. It has a title bar 'Device Setup' in blue. Below it, there are two input fields: 'Server Name' with the value 'Server' and 'Syslog Server' with the value '192.168.0.50'.

Figure 4-4-3: Device Setup Page Screenshot

The page includes the following fields:

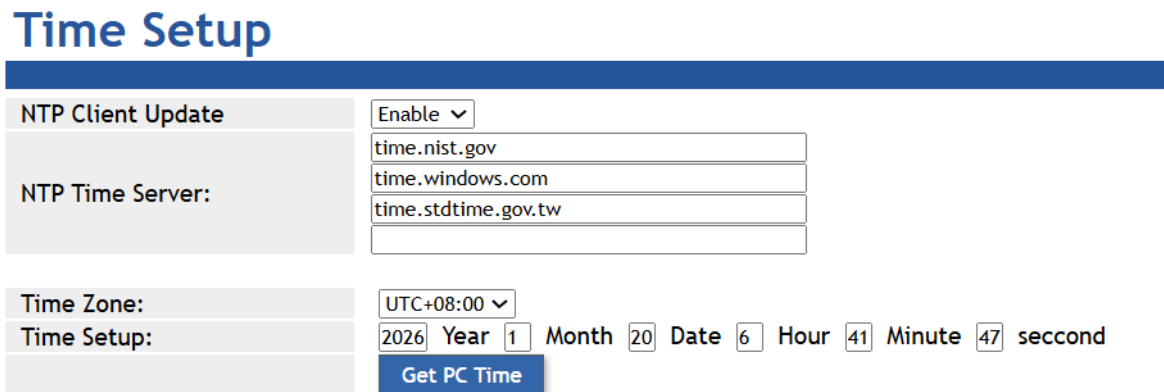
Object	Description
• Server Name	To configure the name of server. The default value is Server .
• Syslog Server	To configure IP address of syslog server.



When applying any configuration changes of Modbus Gateway, it's required to **save changed configuration and reboot system**. Therefore the new configuration will be applied after rebooting.

4.4.4 Time

This page provides configuration of NTP server and Time modification. The screen in [Figure 4-4-4](#) appears.



The screenshot shows the 'Time Setup' page. It has a title bar 'Time Setup' in blue. Below it, there are several configuration options: 'NTP Client Update' with a dropdown menu set to 'Enable', 'NTP Time Server' with three input fields containing 'time.nist.gov', 'time.windows.com', and 'time.stdtime.gov.tw', 'Time Zone' with a dropdown menu set to 'UTC+08:00', 'Time Setup' with a date and time picker showing '2026 Year 1 Month 20 Date 6 Hour 41 Minute 47 second', and a 'Get PC Time' button.

Figure 4-4-4: Time Setup Page Screenshot

The page includes the following fields:

Object	Description
• NTP Client Update	Enables or disables automatic time synchronization with the configured NTP servers.
• NTP Time Server	Specifies the NTP server addresses used for automatic time synchronization. Up to four NTP servers can be configured.
• Time Zone	Selects the time zone for the device.
• Time Setup	Manually configures the system date and time.
• Get PC Time	Synchronizes the device date and time with the connected computer.

4.4.5 Fault Alarm

This page provides configuration for fault alarm. The screen in [Figure 4-4-5](#) appears.

Fault Alarm Control Configuration	
Enable	☐ Enable
Buzzer	☐ Enable
Record	☐ System Log ☐ SNMP Trap
Event	☐ Power Fail ☐ DCD Changed ☐ DSR Changed
Power Alarm	☐ PWR 1 ☐ PWR 2
Monitoring of DCD Change	☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4
Monitoring of DSR Change	☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4

Figure 4-4-5: Fault Alarm Control Page Screenshot

The page includes the following fields:

Object	Description
• Enable	Enables or disables the fault alarm output function.
• Buzzer	To check whether Buzzer is enabled on this switch.
• Record	To check whether Record is sending System log or SNMP Trap or both.
• Event	To check whether Power, Connection, etc. are working or not.
• Power Alarm	PWR1 or PWR2 or both have faulted..
• Monitoring of DCD Change	Monitor which Port or all for DCD signal that has changed.
• Monitoring of DSR Change	Monitor which Port or all for DSR signal that has changed.

4.4.6 Digital Input and Output (IMG-3400T only)

Digital Input allows user to log external device (such as industrial cooler). System will log a user customized message into system log and issue SNMP trap.

Digital Output allows user to monitor whether the power or DCD/DSR signal has changed, and let system issue a high or low signal to an external device (such as alarm) when power fails. The Configuration screen in [Figure 4-4-6](#) appears.

Digital Input/Output Control Configuration

Digital Input 0		Digital Input 1	
Enable	☐ Enable	Enable	☐ Enable
DI Condition	High to Low ▾	DI Condition	High to Low ▾
Event Description		Event Description	
Action	☐ System Log ☐ SNMP	Action	☐ System Log ☐ SNMP

Digital Output 0		Digital Output 1	
Enable	☐ Enable	Enable	☐ Enable
Event	☐ Power Fail ☐ DCD Changed ☐ DSR Changed ☐ DI 0 ☐ DI 1	Event	☐ Power Fail ☐ DCD Changed ☐ DSR Changed ☐ DI 0 ☐ DI 1
DO Condition	High to Low ▾	DO Condition	High to Low ▾
Power Alarm	☐ PWR 1 ☐ PWR 2 ☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4	Power Alarm	☐ PWR 1 ☐ PWR 2 ☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4
Monitoring of DCD Change	☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4	Monitoring of DCD Change	☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4
Monitoring of DSR Change	☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4	Monitoring of DSR Change	☐ Port1 ☐ Port2 ☐ Port3 ☐ Port4

Figure 4-4-6: Time Configuration Page Screenshot

The page includes the following fields:

Object	Description
• Enable	Check the Enable checkbox to enable Digital Input / output function. Uncheck the Enable checkbox to disable Digital input / output function.
• DI Condition	Allows user to select High to Low or Low to High. This means a signal received by system is from High to Low or from Low to High. It will trigger an action that logs a customized message or issue the message from the switch.
• Event Description	Allows user to set a customized message for Digital Input function alarm.
• Action	Allows user to record alarm message to System log, or issues out via SNMP trap. As default SNMP trap is disabled, please enable them first if you want to issue alarm message via them.
• Event	Alarm will sound when power and connection fails; Digital Input 0 (DI 0) and Digital Input 1 (DI 1) means Digital Output has detected these events. Then Digital Output would be triggered according to the settings of the condition.
• Power Alarm	Allows user to choose which power module that needs to be monitored.
• Monitoring of DCD Change	Allows user to choose which port that needs to be monitored when DCD signal changes
• Monitoring of DSR Change	Allows user to choose which port that needs to be monitored when DSR signal changes.

4.5 Accessible IP

This page provides the specified IP address to connect with Modbus Gateway. When the list of accessible IP is enabled, only IP address in the list can connect to device. When the function is disabled, there is no such restriction. The list allows user to configure up to four IP groups. The accessible IP setup screen in [Figure 4-5-1](#) appears.

Accessible IP Setup



Figure 4-5-1: Accessible IP Setup Page Screenshot

The page includes the following fields:

Object	Description
Active	Configure the accessible IP list. Possible modes are: Disabled: Disable accessible IP lists. Enabled: Enable accessible IP lists.
Activate NO	Enable or disable activated IP groups.
Start IP Address	Enter the IP address for starting.
End IP Address N	Enter the IP address for ending

Example

Allowed hosts	Start: IP Address setting	End: IP Address N
Any host	disable	disable
192.168.0.120	192.168.0.120	
192.168.0.1 to 192.168.0.254	192.168.0.1	192.168.0.254

4.6 Network

This page allows the user to configure IPv4 or IPv6 address. The IP configuration screen in [Figure 4-6-1](#) appears.

IP Configuration

IPv4 Configuration

IP Configuration:	Static ▾
DHCP Fallback:	☐ Enable ☒ Disable
Fallback Seconds:	60 (30~300)
IP Address:	192.168.0.100
Subnet Mask:	255.255.255.0
Gateway:	192.168.0.254
Primary DNS:	8.8.8.8
Second DNS:	8.8.4.4

IPv6 Configuration

IP Configuration:	Disable ▾
IP Address:	[Example] Global 2000::/3,ULA fd00::/7
Prefix:	64
Gateway:	
Primary DNS:	
Second DNS:	

Figure 4-6-1: IP Configuration Page Screenshot

The page includes the following fields:

IPv4

Object	Description
• IP Configuration	Configure static or DHCP to get IPv4 address. The default value is static . ■ static: Set a fixed IPv4 address that was manually configured for a device ■ DHCP: Set IPv4 address automatically assigned from a DHCP server.
• DHCP Fallback	Enables or disables the use of the configured static IPv4 address when the DHCP server does not respond.
• Fallback Seconds	Specifies how long the device waits for a DHCP response before switching to the fallback IPv4 settings. The available range is 30–300 seconds.
• IP Address	The current IPv4 Address of the device. The IP Address could be manually assigned. The default value is 192.168.0.100 .
• Subnet Mask	The current IP subnet mask of the device. The default value is 255.255.255.0 .
• Gateway	The default gateway for the IP interface. The default value is 192.168.0.254 .
• Primary DNS	Configure the first DNS server.
• Second DNS	Configure the second DNS server.

IPv6

Object	Description
• IP Configuration	Configure static, SLAAC/DHCP and disable for IPv6 address. The default value is disable. ■ Static: Set a fixed IPv6 address that was manually configured for a device ■ SLAAC/DHCP: Set IPv6 address automatically assigned from a DHCPv6 server. ■ Disable: Disable IPv6 protocol.
• IP Address	The current IPv6 Address of the device.
• Prefix	The IPv6 network mask, in number of bits (prefix length). The default value is 64 .
• Gateway	The default gateway for the IPv6 interface.
• Primary DNS	Configure the first DNS server.
• Second DNS	Configure the second DNS server.

4.7 Modbus Gateway

Use the Modbus Gateway menu items to configure the serial port and Modbus communication settings of the Industrial Modbus Gateway. Under Modbus Gateway, the following topics are provided to configure serial port parameters, Modbus communication interfaces and gateway operation settings. This section has the following items:

Serial Port MB COM Modbus Config

4.7.1 Serial Port

This page allows users to configure the communication parameters and operation mode of each serial port. Users can configure the serial interface, baud rate, data format, flow control, RTS delay and response timeout according to the connected serial device. The Port Setup page is shown in [Figure 4-7-1](#).

Port 1 Setup

Operation Mode:	MQTT	Baud Rate:	115200
Data Bits:	8	Parity:	None
Stop Bits:	1	Flow Control:	None
Interface:	RS-232		
RTS ON delay:	0 (0 - 100ms)	RTS OFF delay:	0 (0 - 100ms)

Response Timeout:	1000 (10 - 120000ms)	Auto Detect
-------------------	---	--

Apply to all serial ports:	☐
----------------------------	--------------------------

Figure 4-7-1: Port Setup Page Screenshot

Object	Description
• Operation Mode	Used to set Modbus/serial on serial port. ■ Disable ■ RTU Slave, ■ RTU Master, ■ ASCII Slave ■ ASCII Master ■ MQTT
• Baud Rate	The rate of data transmission to and from the attached serial device. It allows 50 bps to 921600 bps. The default is 921600 bps .
• Stop Bits	The stop bit follows the data and parity bits in serial communication. It indicates the end of transmission. The default is 1 .
• Data Bits	Indicates the number of the bits in a transmitted data package. The allowed value is 5,6,7,8 and default value is 8.
• Parity	This parameter controls the error checking mode. It support five modes and default

	value is none. ■ Even ■ Odd ■ None ■ Space ■ Mark
• Interface	The device server supports three interfaces. The default value is RS-232. ■ RS-232 ■ RS-422 ■ RS-485 2-Wire ■ RS-485 4-Wire
• Flow Control	The method is used to suspend and resume data transmission to ensure that data is not lost. It supports four methods and default value is none. ■ None ■ RTS/CTS ■ Xon/Xoff ■ DTR/DSR
• RTS ON delay	This parameter controls RTS turn on before data transmission.
• RTS OFF delay	This parameter controls RTS turn off after the transmission completes.
• Response Timeout	This parameter is used to configure how long the gateway will wait for a response from a Modbus ASCII or RTU slave.

4.7.2 Operation mode

The Modbus Gateway makes connected Serial equipment become IP-based. That also makes them able to connect to a TCP/IP networking immediately. The Modbus Gateway allows traditional Computer/Client COM ports access to a serial equipment anywhere on the Ethernet LAN network.

This operation mode can be set up as **Disable**, **RTU Slave/Master**, **ASCII Slave/Master** and **MQTT**. The operation mode screen in [Figure 4-7-2](#) appears.

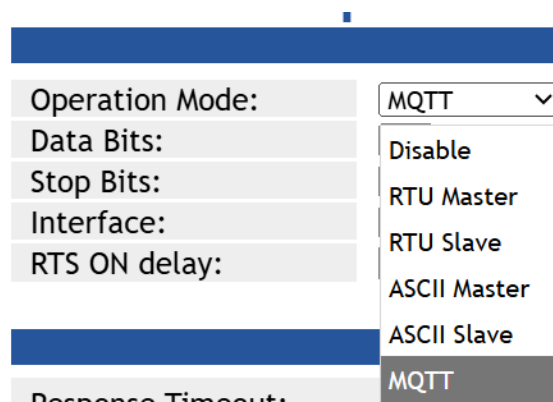


Figure 4-7-2: Operation Mode Screenshot

4.7.3 Disable mode

When selecting disabled operation mode, the device port can be disabled. The disable mode screen in [Figure 4-7-3](#) appears.

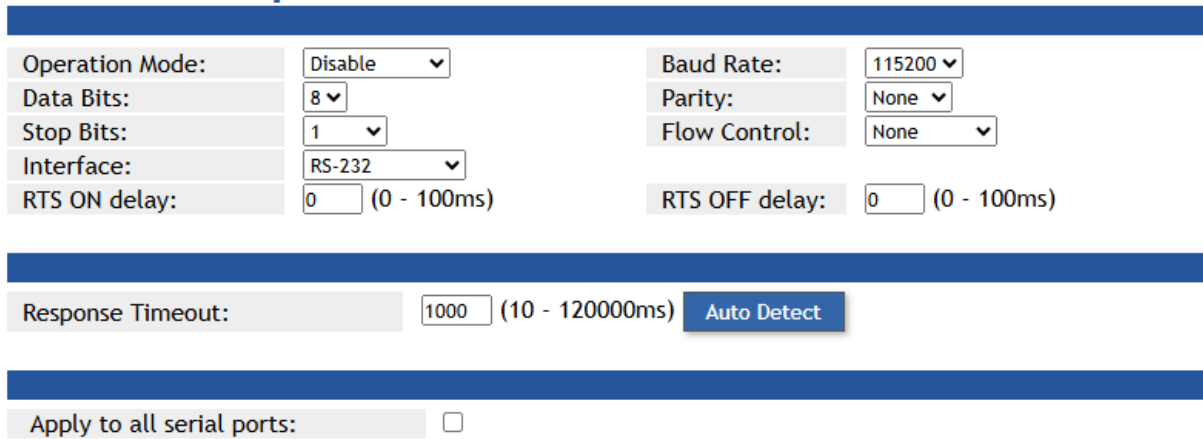


Figure 4-7-3: Disable Mode Screenshot

Buttons

Apply: Click to apply port config changes.



When applying any configuration changes of Modbus Gateway, it's required to **save changed configuration and reboot system**. Therefore the new configuration will be applied after rebooting.

4.7.4 RTU Slave mode

This function allows the users to use Modbus TCP master device and Modbus RTU device to achieve communication. The operation mode of the Industrial Modbus Gateway is set to RTU Slave. The remote pair master/slave topology in [Figure 4-7-4](#) appears.

RTU Slave mode



Figure 4-7-4: RTU Slave Topology

The remote pair master mode screenshot in [Figure 4-7-5](#) appears.

Operation Mode:	RTU Slave ▼	Baud Rate:	921600 ▼
Data Bits:	8 ▼	Any Baud Rate:	50 (50 - 921600)
Stop Bits:	1 ▼	Parity:	None ▼
Interface:	RS-232 ▼	Flow Control:	None ▼
RTS ON delay:	0 (0-100ms)	RTS OFF delay:	0 (0-100ms)

Response Timeout: 1000 (10 - 120000ms)

Figure 4-7-5: RTU Slave Mode Screenshot

4.7.5 RTU Master mode

This function allows the users to use Modbus RTU master device and Modbus TCP device to achieve communication. The operation mode of the Industrial Modbus Gateway is set to RTU Master. The serial telnet mode topology in [Figure 4-7-6](#) appears.

RTU Master mode



Figure 4-7-6: RTU Master Mode Topology

The serial Telnet mode screenshot in [Figure 4-7-7](#) appears.

Operation Mode:	RTU Master ▼	Baud Rate:	921600 ▼
Data Bits:	8 ▼	Any Baud Rate:	50 (50 - 921600)
Stop Bits:	1 ▼	Parity:	None ▼
Interface:	RS-232 ▼	Flow Control:	None ▼
RTS ON delay:	0 (0-100ms)	RTS OFF delay:	0 (0-100ms)

Response Timeout: 1000 (10 - 120000ms)

Figure 4-7-7: RTU Master Mode Screenshot

4.7.6 ASCII Slave mode

This function allows the users to use Modbus TCP master device and Modbus ASCII device to achieve communication. The operation mode of the gateway is set to ASCII Slave. The TCP server mode topology in [Figure 4-7-8](#) appears.

ASCII Slave mode



Figure 4-7-8: ASCII Slave Mode Topology

The TCP server mode screenshot in [Figure 4-7-9](#) appears.

Operation Mode:	ASCII Slave	Baud Rate:	921600
Data Bits:	8	Any Baud Rate:	50 (50 - 921600)
Stop Bits:	1	Parity:	None
Interface:	RS-232	Flow Control:	None
RTS ON delay:	0 (0-100ms)	RTS OFF delay:	0 (0-100ms)
Response Timeout: 1000 (10 - 120000ms) Auto Detect			

Figure 4-7-9: ASCII Slave Mode Screenshot

4.7.7 ASCII Master mode

This function allows the users to use Modbus ASCII master device and Modbus TCP device to achieve communication. The operation mode of the Industrial Modbus Gateway is set to ASCII Master. The TCP client mode topology in [Figure 4-7-10](#) appears.

ASCII Master mode



Figure 4-7-10: ASCII Master Mode Topology

The TCP client mode screenshot in [Figure 4-7-11](#) appears.

Operation Mode:	ASCII Master	Baud Rate:	921600
Data Bits:	8	Any Baud Rate:	50 (50 - 921600)
Stop Bits:	1	Parity:	None
Interface:	RS-232	Flow Control:	None
RTS ON delay:	0 (0-100ms)	RTS OFF delay:	0 (0-100ms)

Response Timeout: 1000 (10 - 120000ms) Auto Detect

Figure -4-7-11: ASCII Master Mode Screenshot

4.7.8 MB COM

This page is to create virtual COM port for Modbus gateway. The default is disable. The MB COM Stetup screenshot in [Figure 4-7-12](#) appears

MB COM Setup

Active: Enable

MB COM 1:	Disable
MB COM 2:	Disable
MB COM 3:	RTU Master
MB COM 4:	RTU Slave
	ASCII Master
	ASCII Slave

Apply

Figure -4-7-12: MB COM Stetup Screenshot

4.7.9 Modbus Config

Use the Modbus Config menu items to configure Modbus routing rules, device ID mapping and communication parameters of the Industrial Modbus Gateway. These settings allow Modbus TCP and Modbus RTU/ASCII devices to communicate according to the required network architecture. This section has the following items:

Router ID Mapping Parameters

4.7.10 Router

The Modbus Gateway support **four** Modbus masters in each serial port which can communicate with the Modbus slave devices. It can be connected to a serial port by IP address or TCP port. The screen in [Figure 4-7-13](#) appears.

Router Setup

	Index	Local Interface	Local IP / TCP port	Destination
☐	1			
☐	2			
☐	3			
☐	4			
☐	5			
☐	6			
☐	7			
☐	8			
☐	9			
☐	10			
☐	11			
☐	12			
☐	13			
☐	14			
☐	15			
☐	16			

Local Interface:

Local TCP Port: Please input Local Port

Destination: Please select a valid Destination Port

Figure 4-7-13: Router Status Page Screenshot

For example, IP address 192.168.0.60 is set and assigned to serial port 1. As shown below, it will forward directly to serial port 1 when you get a Modbus request that is sent to 192.168.0.60. The Router Setup screen in [Figure 4-7-14](#) appears.

Local Interface:

Local IP Address:

Destination:

Router Setup

	Index	Local Interface	Local IP / TCP port	Destination
☐	1	IP Address	192.168.0.60	Port 1
☐	2			
☐	3			
☐	4			

Figure 4-7-14: Router Setup Page Screenshot

The page includes the following fields:

Object	Description
• Operation Mode	Used to set Modbus/serial on serial port. The Default is RTU Slave. ■ Disable ■ RTU Slave, ■ RTU Master, ■ ASCII Slave ■ ASCII Master
• Baud Rate	The rate of data transmission to and from the attached serial device. It allows 50 bps to 921600 bps. The default is 921600 bps.
• Stop Bits	The stop bit follows the data and parity bits in serial communication. It indicates the end of transmission. The default is 1.
• Data Bits	Indicates the number of the bits in a transmitted data package. The allowed value is 5,6,7,8 and default value is 8.

4.7.11 Mapping

The ID Mapping Setup is a routing mechanism for gateway. It can follow routing rule on this table to transfer Modbus request to the specific serial port or TCP server that connects the Modbus slave device. The screen in [Figure 4-7-15](#) appears.

ID Mapping Setup

Auto	Device	Routing	Disable ▼			Page	1 ~ 20 ▼
	Index	Router	Type	Slave ID Mapping (Virtual<=>Real)	Destination		
☐	1						
☐	2						
☐	3						
☐	4						
☐	5						
☐	6						
☐	7						
☐	8						
☐	9						
☐	10						
☐	11						
☐	12						
☐	13						
☐	14						
☐	15						
☐	16						
☐	17						
☐	18						
☐	19						
☐	20						

Figure 4-7-15: Mapping Status Page Screenshot

In block 1, it's a setting value for slave ID 1~3 that will forward to serial port 1. When you get a Modbus requests with slave ID 1~3, it will follow this rule to be routed to the targeted Modbus slave device. In block 2, you can select the one to add, edit or delete the rule on the table. The block 1 and block 2 screen in [Figure 4-7-16](#) appears.

ID Mapping Setup

Auto	Device	Routing	Disable ▼			Page	1 ~ 20 ▼
	Index	Router	Type	Slave ID Mapping (Virtual<=>Real)	Destination		
☐	1	Manual	Serial	1-3<=>1-3	Port 1		
☐	2						
☐	3						

Type: TCP Address ▼

Slave ID From:: Please input Slave ID Start To: Please input Slave ID End

Slave ID Offset: Please input Slave ID Offset

Destination: Please input Destination IP : Please input Destination Port

Figure 4-7-16: The Block 1 / Block 2 Screenshot

Basic setting

A Modbus device with slave ID 1 can be set to be connected to serial port 1 as shown in [Figure 4-7-17](#)

Type:	Serial Port ▼	
Slave ID From:	1	To 1
Slave ID Offset:	0	
Destination:	Port 1 ▼	

ID Mapping Setup

Auto Device Routing				Enable ▼	Page	1 ~ 20 ▼
	Index	Router	Type	Slave ID Mapping (Virtual<=>Real)	Destination	
☐	1	Manual	Serial	1-1<=>1-1	Serial 1	
☐	2					

Figure 4-7-17: Basic setting of Mapping Screenshot

Auto Device Routing

It's a mechanism that will help you find where it is and get routed correctly on serial port. So users don't need to set the rule manually. If the Auto Device Routing is enabled, it will clear Slave ID Mapping value of the rule with serial port automatically.

ID Mapping Setup

Auto Device Routing				Enable ▼	Page	1 ~ 20 ▼
	Index	Router	Type	Slave ID Mapping (Virtual<=>Real)	Destination	
☐	1	Manual	Serial	0-0<=>0-0	Serial 1	
☐	2					

When you get a request with slave ID didn't exist on rule table. It will detect all serial port to find the target device and add on the rule table directly.

ID Mapping Setup

Auto Device Routing				Enable ▼	Page	1 ~ 20 ▼
	Index	Router	Type	Slave ID Mapping (Virtual<=>Real)	Destination	
☐	1	Manual	Serial	0-0<=>0-0	Serial 1	
☐	2	Auto	Serial	1-1<=>1-1	Serial 2	
☐	3					

If there are two target devices with the same ID in two serial ports, it will show conflict. Check environment please.

ID Mapping Setup

Auto Device Routing				Enable ▼	Page	1 ~ 20 ▼
	Index	Router	Type	Slave ID Mapping (Virtual<=>Real)	Destination	
☐	1	Manual	Serial	0-0<=>0-0	Serial 1	
☐	2	Auto	Serial	2-2<=>2-2	Serial 1	
☐	3	Auto	Serial	2-2<=>2-2	Serial 2 , Conflict	
☐	4					

4.7.12 Parameters

This function allows setting the value for serial port COM configuration. Press the “**Apply**” button to set the value and the screen in [Figure 4-7-18](#) appears

Parameters Setup

Initial Delay: (0-30000ms)
 Listen Port: (1 - 65535)
 TCP Exception: 
 TCP Timeout: (10 - 120000ms)

Figure 4-7-18: Parameters Setup Page Screenshot

The page includes the following fields:

Object	Description
• Initial Delay	You can make the IP218 wait for some Modbus slave devices may take more time to boot up. It will force the IP218 to wait the initial delay setting before booting completes.
• Listen Port	This parameter (default:502) means the TCP port t communicates with the connected device.
• TCP Exception	If this setting is enabled, IP218 will return an exception in response when there is no response from the slave. If it's disabled, it will do nothing when there is no response.
• TCP Timeout	This parameter (default:1000) is used to configure how long IP218 will wait for a response from a Modbus TCP slave. If there is no response from the slave, the master will ignore and continue next step. This makes the Modbus system work improperly even if a Modbus slave device is faulty.

4.7.13 MQTT

Enables the serial port to exchange data with an MQTT Broker, allowing serial device data to be published or received through MQTT topics. MQTT connection and topic settings are configured on the **MQTT Config** page.

4.8 MQTT Config

Use the MQTT Config menu items to configure MQTT communication and data transmission settings of the Modbus Gateway. Under MQTT Config, the following topics are provided to configure the MQTT client connection, Modbus interface, data collection and MQTT topic settings. This section has the following items:

[MQTT Client](#) [Modbus Interface](#) [MQTT Data Configuration](#) [MQTT Topic](#)

4.8.1 MQTT Client

This page allows users to configure the MQTT client connection, authentication and advanced communication settings of the Modbus Gateway. When the MQTT client is enabled, the device can connect to the specified MQTT Broker to publish or receive serial and Modbus data. Users can also configure connection maintenance, automatic reconnection, Clean Session and Last Will settings. The MQTT Client Settings page is shown in [Figure 4-8-1](#).

MQTT Client Settings

Basic Configuration

Enable MQTT	☐ Enable ☒ Disable
MQTT Version	MQTT 3.1
Broker Address	192.168.0.100
Broker Port	1883
Client ID	

Authentication

Auth Method	Anonymous (No Authentication)
-------------	--

Advanced Settings

Keep Alive (seconds)	60
No Topic Timeout (seconds)	0
Reconnect Interval (seconds)	5
Clean Session	☒ Enable ☐ Disable
Enable Last Will	☐ Enable ☒ Disable
Last Will Topic	iot_gateway
Last Will Message	off-line
Last Will QoS	0 - At most once
Last Will Retained	☒ Enable ☐ Disable

Figure 4-8-1: MQTT Client Settings Page Screenshot

Basic Configuration

Object	Description
• Enable MQTT	Enable or disable the MQTT client function. Possible modes are: Enable: Enable the MQTT client function. Disable: Disable the MQTT client function.
• MQTT Version	Select the MQTT protocol version used to communicate with the MQTT Broker.
• Broker Address	Enter the IP address or domain name of the MQTT Broker.
• Broker Port	Enter the communication port number of the MQTT Broker. The default MQTT port is 1883.
• Client ID	Enter the unique client identifier used when connecting to the MQTT Broker.

• Auth Method	Select the authentication method used to connect to the MQTT Broker, such as anonymous or username/password authentication.
• Keep Alive (seconds)	Specify the interval at which the MQTT client maintains its connection with the MQTT Broker.
• No Topic Timeout (seconds)	Specify the timeout period when no MQTT topic communication is detected. A value of 0 disables the timeout function.
• Reconnect Interval (seconds)	Specify the interval before attempting to reconnect after the MQTT Broker connection is interrupted.
• Clean Session	Enable or disable the MQTT Clean Session function. Possible modes are: Enable: Start a new session without restoring the previous session information. Disable: Allow the Broker to retain the client session information.
• Enable Last Will	Enable or disable the MQTT Last Will and Testament function.
• Last Will Topic	Enter the MQTT topic used to publish the Last Will message.
• Last Will Message	Enter the message published by the MQTT Broker when the client disconnects unexpectedly.
• Last Will QoS	Select the Quality of Service level for the Last Will message.
• Last Will Retained	Enable or disable the Retain flag for the Last Will message.

4.8.2 Modbus Interface

This page allows users to configure the Modbus communication interfaces used for data collection. The Modbus Gateway supports both Modbus TCP and Modbus RTU/ASCII interfaces. Users can add, edit or delete Modbus TCP interfaces and configure the Modbus RTU/ASCII interface associated with each serial port. The Modbus Interfaces page is shown in [Figure 4-8-2](#).

Modbus Interfaces

Modbus TCP Interfaces

TCP

192.168.0.22 : 502

Timeout: 1000 (ms)

Edit

Delete

+ Add TCP Interface

Modbus RTU/ASCII Interfaces

RTU

port1

115200 baud, | Timeout: 1000 (ms)

Edit

Figure 4-8-2: Modbus Interfaces Page Screenshot

Object	Description
• Modbus TCP Interfaces	Displays the configured Modbus TCP interfaces and their connection information.
• Add TCP Interface	Adds a new Modbus TCP interface.
• Edit	Modifies the settings of the selected Modbus interface.
• Delete	Deletes the selected Modbus TCP interface.
• Modbus RTU/ASCII Interfaces	Displays the Modbus RTU/ASCII interfaces configured for the serial ports.
• Edit	Modifies the settings of the selected Modbus interface.

4.8.3 MQTT Data Configuration

This page allows users to configure the Modbus data sources to be collected and transmitted through MQTT. Each data source defines the Modbus interface, Unit ID, function code, starting address and quantity of data to be read. Users can add, edit or delete data sources according to the connected Modbus devices. The MQTT Data Configuration page is shown in [Figure 4-8-3](#).

MQTT Data Configuration

Source Name	Interface	Unit ID	Function	Address	Quantity	Status	Actions
test	port1(RTU)	0001	01 - Read Coils	0000	000A		Edit Delete

[+ Add Data Source](#)

Figure 4-8-3: MQTT Data Configuration Page Screenshot

Object	Description
• Source Name	Displays the user-defined name of the Modbus data source.
• Interface	Displays the Modbus TCP or Modbus RTU/ASCII interface used to collect data.
• Unit ID	Displays the Unit ID of the target Modbus device.
• Function	Displays the Modbus function code used to read data from the target device.
• Address	Displays the starting Modbus address from which data is read.
• Quantity	Displays the number of coils or registers to be read.
• Status	Displays whether the configured data source is enabled or disabled.
• Actions	Provides options to edit or delete the configured data source.
• Edit	Modifies the selected data source configuration.
• Delete	Deletes the selected data source configuration.
• Add Data Source	Adds a new Modbus data source for MQTT data collection.

When the **Add Data Source** or **Edit** button is clicked, the Add/Edit Data Source window appears. This window allows users to define the target Modbus device, communication interface, function code and data range to be collected. The Add/Edit Data Source window is shown in [Figure 4-8-4](#).

×

Add/Edit Data Source

Source Name	test
Select Interface	port1 (RTU) ▼
Slave/Unit ID (Hex)	0001
Function Code	01 - Read Coils ▼
Start Address (Hex)	0000
Quantity (Hex)	000A

Cancel

Apply

Figure 4-8-4: Add/Edit Data Source Window Screenshot

Object	Description
• Source Name	Enter a user-defined name for identifying the Modbus data source.
• Select Interface	Select the configured Modbus TCP or Modbus RTU/ASCII interface used to collect data.
• Slave/Unit ID (Hex)	Enter the Modbus Slave ID or Unit ID of the target device in hexadecimal format.
• Function Code	Select the Modbus function code used to read the required coils, inputs or registers.
• Start Address (Hex)	Enter the starting Modbus address to be read in hexadecimal format.
• Quantity (Hex)	Enter the number of coils, inputs or registers to be read in hexadecimal format.
• Apply	Saves and applies the data source configuration.
• Cancel	Closes the window without saving the changes.

4.8.4 MQTT Topic

This page allows users to configure the MQTT topics used for data publishing or subscription. Each topic configuration defines the topic name, transmission type, associated data, Quality of Service level and publishing interval. Users can add, edit or delete MQTT topics according to the application requirements. The MQTT Topic Configuration page is shown in [Figure 4-8-5](#).

MQTT Topic Configuration

Topic Name	Type	Configuration	QoS	Interval	Actions
Test	JSON Publish	Data: t123	0	10 s	Edit Delete
+ Add Topic					

Figure 4-8-5: MQTT Topic Configuration Page Screenshot

Object	Description
• Topic Name	Displays the user-defined name used to identify the MQTT topic configuration.
• Type	Displays the MQTT transmission type configured for the topic, such as JSON Publish.
• Configuration	Displays the data source or communication settings associated with the MQTT topic.
• QoS	Displays the Quality of Service level used for MQTT message transmission.
• Interval	Displays the interval at which MQTT data is published.
• Actions	Provides options to edit or delete the configured MQTT topic.
• Edit	Modifies the selected MQTT topic configuration.
• Delete	Deletes the selected MQTT topic configuration.
• Add Topic	Adds a new MQTT topic configuration.

When the **Add Topic** or **Edit** button is clicked, the Add/Edit Topic window appears. This window allows users to configure the MQTT topic, transmission parameters and data nodes included in the published message. The Add/Edit Topic window is shown in [Figure 4-8-6](#).

×

Add/Edit Topic

Topic Name

Topic Type

JSON Publish ▼

QoS Level

0 - At most once ▼

Publish Interval (seconds)

Retained Message

Disabled ▼

Publish Condition

Anyway ▼

Data Nodes

Data Name	Data Source	Offset	Data Type	Decimal	Action
t123	test ▼	0	Uint16 ▼	0	Remove

+ Add Data Node

Cancel

Apply

Figure 4-8-6: Add/Edit Topic Window Screenshot

Object	Description
• Topic Name	Enter the MQTT topic name used for message transmission.
• Topic Type	Select the MQTT transmission type, such as JSON Publish.
• QoS Level	Select the Quality of Service level used for MQTT message delivery.
• Publish Interval (seconds)	Specify the interval at which MQTT messages are published.
• Retained Message	Enable or disable the MQTT Retain function. When enabled, the Broker retains the latest message published to the topic.
• Publish Condition	Select the condition that triggers MQTT message publishing.
• Data Nodes	Configure the data items included in the MQTT message.
• Data Name	Enter the name used to identify the data node in the published message.
• Data Source	Select a data source configured on the MQTT Data Configuration page.
• Offset	Specify the data position offset within the selected data source.
• Data Type	Select the format used to interpret the collected Modbus data, such as Uint16.
• Decimal	Specify the number of decimal places applied to the data value.
• Remove	Removes the selected data node from the topic configuration.
• Add Data Node	Adds another data node to the MQTT topic.
• Apply	Saves and applies the MQTT topic configuration.
• Cancel	Closes the Add/Edit Topic window without applying the changes.

4.9 MQTT Broker

This page allows users to configure the built-in MQTT Broker of the Modbus Gateway. When enabled, MQTT clients can connect directly to the device for local message publishing and subscription without requiring an external MQTT Broker. Users can configure the Broker port and MQTT authentication method. The MQTT Broker Configuration page is shown in [Figure 4-9-1](#).

MQTT Broker Configuration

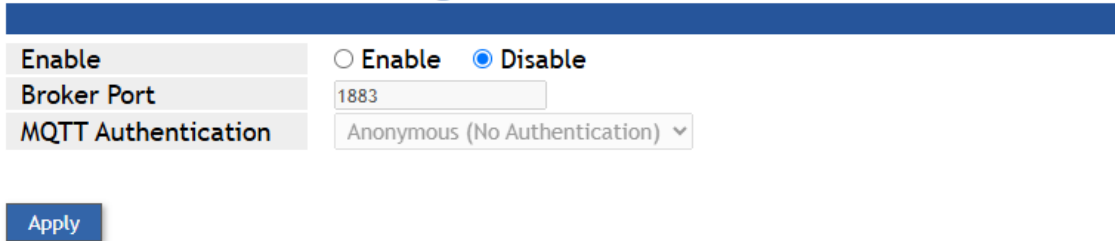


Figure 4-9-1: MQTT Broker Configuration Page Screenshot

Object	Description
• Enable	Enable or disable the built-in MQTT Broker. Possible modes are: Enable: Enable the built-in MQTT Broker service. Disable: Disable the built-in MQTT Broker service.
• Broker Port	Specify the TCP port used by MQTT clients to connect to the built-in MQTT Broker. The default MQTT port is 1883.
• MQTT Authentication	Select the authentication method used when MQTT clients connect to the built-in MQTT Broker.
• Apply	Saves and applies the MQTT Broker configuration.

4.10SNMP Setup

Use the Port Menu to display or configure the Modbus Gateway's ports. This section includes the page that displays current port configurations. Ports can also be configured here. The Port Configuration screen in [Figure 4-6-1](#) appears.

SNMP Setup

SNMP Active:	Disable ▾	
Community:	public	
Contact:	defaultContact	
Location:	defaultLocation	
Trap Server:	localhost	IP or domain name

Events:

Cold Start Trap:	☐
Warm Start Trap:	☐
Authentication Failure Trap:	☐

Figure 4-6-1: SNMP Setup page Screenshot

The page includes the following fields:

Object	Description
• SNMP Active	Indicates the SNMP mode operation. Possible modes are: ■ Disable: Disable SNMP mode operation. ■ Enable: Enable SNMP mode operation.
• Community	Indicates the security name to map the community to the SNMP Groups configuration.
• Contact	The textual identification of the contact person for this managed node, together with information on how to contact this person.
• Location	The physical location of this node (e.g., telephone closet, 3rd floor).
• Trap Server	Indicates the SNMP trap destination address. It allows a valid IP address or domain name.

Events

Object	Description
• Cold Start Trap	This event is triggered when the power is interrupted and restarted.
• Warm Start Trap	This event occurs when the device is reset but does not turn off the power.
• Authentication Failure Trap	This event occurs when an incorrect or unauthorized password are entered.

4.11 Maintenance

Use the Port Menu to display or configure the Industrial Modbus Gateway's ports. This section includes the page that displays current port configurations. Ports can also be configured here.

Change Password Load Default Firmware Update Reboot

4.11.1 Change Password

This page allows users to change the password used to access the Web management interface. The new password must contain 8–31 characters and include uppercase letters, lowercase letters, numerals and symbols. Spaces are not accepted. The Change Password page is shown in [Figure 4-11-1](#).

Change Password

New Password This field is required.
 Confirm Password This field is required.

The password must contain 8–31 characters, including upper case, lower case, numerals and other symbols. Please note, spaces (blanks) are not accepted.

Figure 4-11-1: Change Password Page Screenshot

The page includes the following fields:

Object	Description
• New Password	Enter the new login password. The password must contain 8–31 characters, including uppercase letters, lowercase letters, numerals and symbols. Spaces are not accepted.
• Confirm Password	Re-enter the new password for confirmation. It must match the password entered in the New Password field.

4.11.2 Load Default

A user can reset the configuration of the Modbus Gateway on this page. The new configuration will applied after restarting system. The Load Default screen in [Figure 4-11-2](#) appears.

Reset to Default

Be aware that previous settings will be lost.

Reset

Export or Import Setting

Export Setting

Export

Import Setting

Import

選擇檔案

未選擇任何檔案

Figure 4-11-2: Reset to Default Page Screenshot

Object	Description
• Reset	Restores the device to its factory-default settings. All previous user configurations will be lost.
• Export	Downloads the current configuration file to the connected computer.
• Import	Uploads and applies the selected configuration file to the device.
• Choose File	Selects the configuration file to be imported.

4.11.3 Firmware Update

This page facilitates an update of the firmware controlling the switch. The Firmware Update screen in [Figure 4-11-3](#) appears.

Firmware Update

Select A Local File

Choose File

No file chosen

Upgrade

Figure 4-11-3: Firmware Update Page Screenshot

To open **Firmware Update** screen, perform the following:

1. Click **Maintenance -> Firmware Update**.
2. The Firmware Update screen is displayed as in [Figure 4-11-3](#).
3. Click the "**Choose File**" button of the Main page; the file selection menu pops up for you to choose firmware.
4. Select on the firmware, then click "**Upgrade**"; the **Software Upload Progress** would show the file with upload status.

4.11.4 Reboot

This page allows users to restart the Modbus Gateway through the Web management interface. When the reboot function is executed, the current management session will automatically log out and the device will restart. The Reboot page is shown in **Figure 4-11-4**.

Reboot

Warning!! The system will automatically log out and reboot.

Reboot

Figure 4-11-4: Save and Restart Page Screenshot

Object	Description
• Reboot	Logs out of the Web management interface and restarts the device.

5 SOFTWARE MB VCOM UTILITY

The “MB VCOM” Administration Suite provides you search function to find your IMG-3X00T Modbus Gateway from a remote location. With MB VCOM Utility, you can easily install and search your IMG-3X00T Modbus Gateway over the network. You can also run MB VCOM Utility from one location to manage multiple device servers. The setup program will be named **mbgsetup.exe**.

5.1 Installing the VCOM Utility

1. When you run MB VCOM installer, a welcome window will appear as shown in [Figure 5-1-1](#). Click Next to continue.

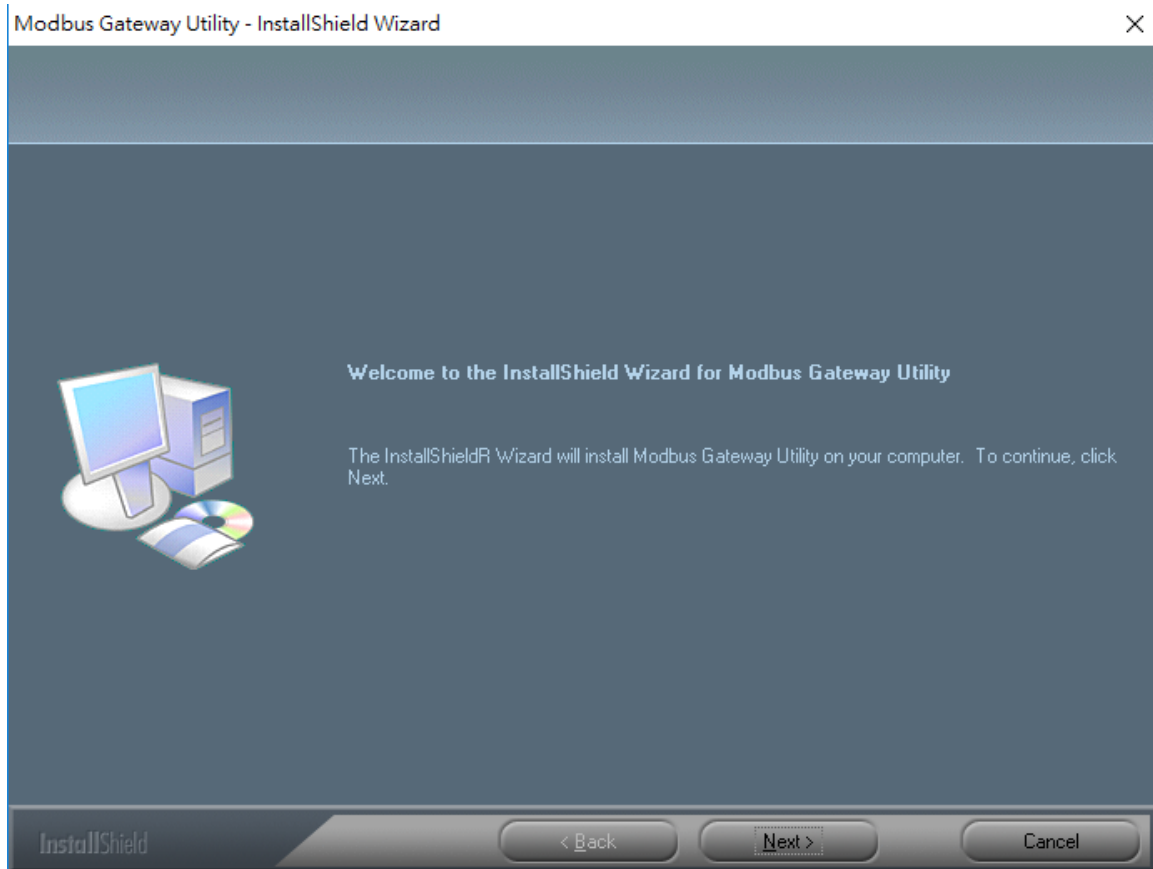


Figure 5-1-1: Installing the VCOM Utility

2. Click Next to accept suggested installation path, or click browse to select a different location as shown in [Figure 5-1-2](#).

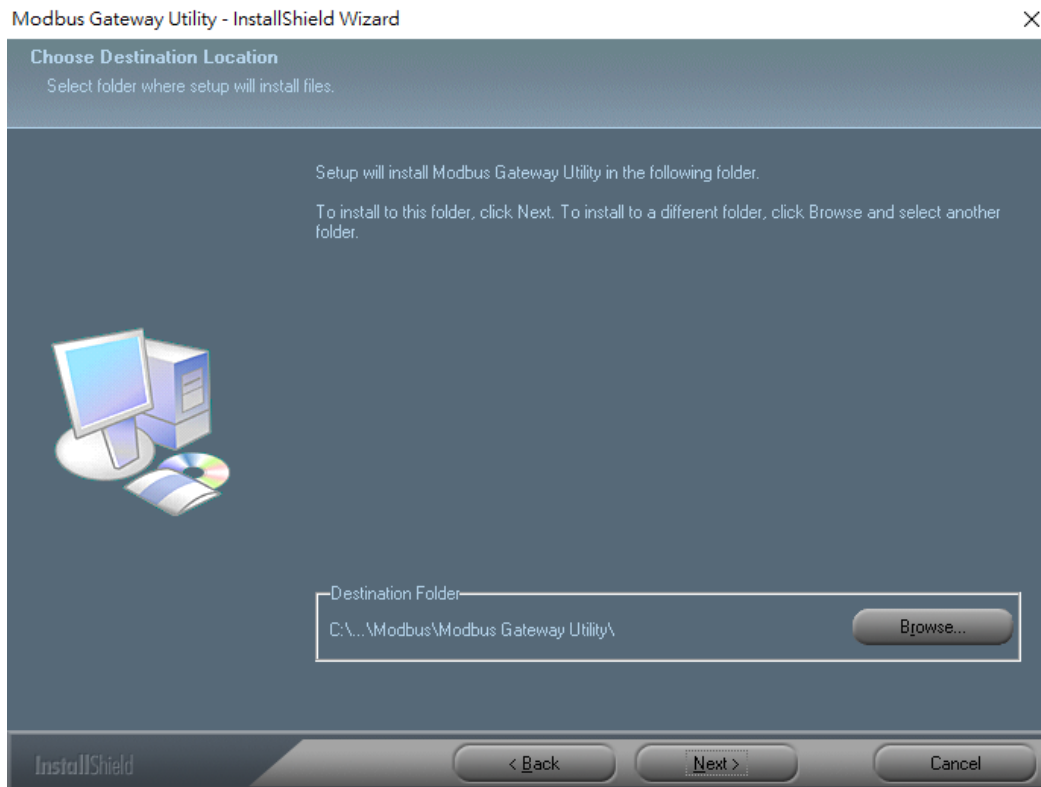


Figure 5-1-2: Installing location

3. The setup wizard will show the progress of the installation and status as shown in [Figure 5-1-3](#).

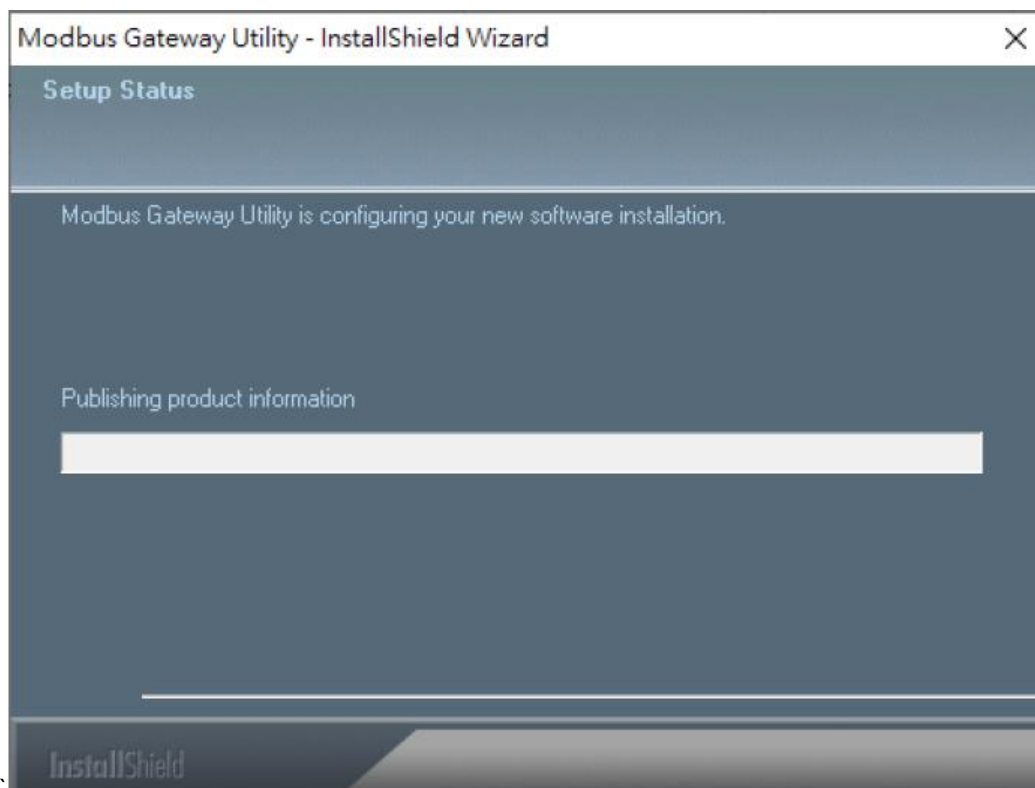


Figure 5-1-3: Installing Process

4. Click Finish to successfully complete installation of VCOM software.as shown in [Figure 5-1-4](#).

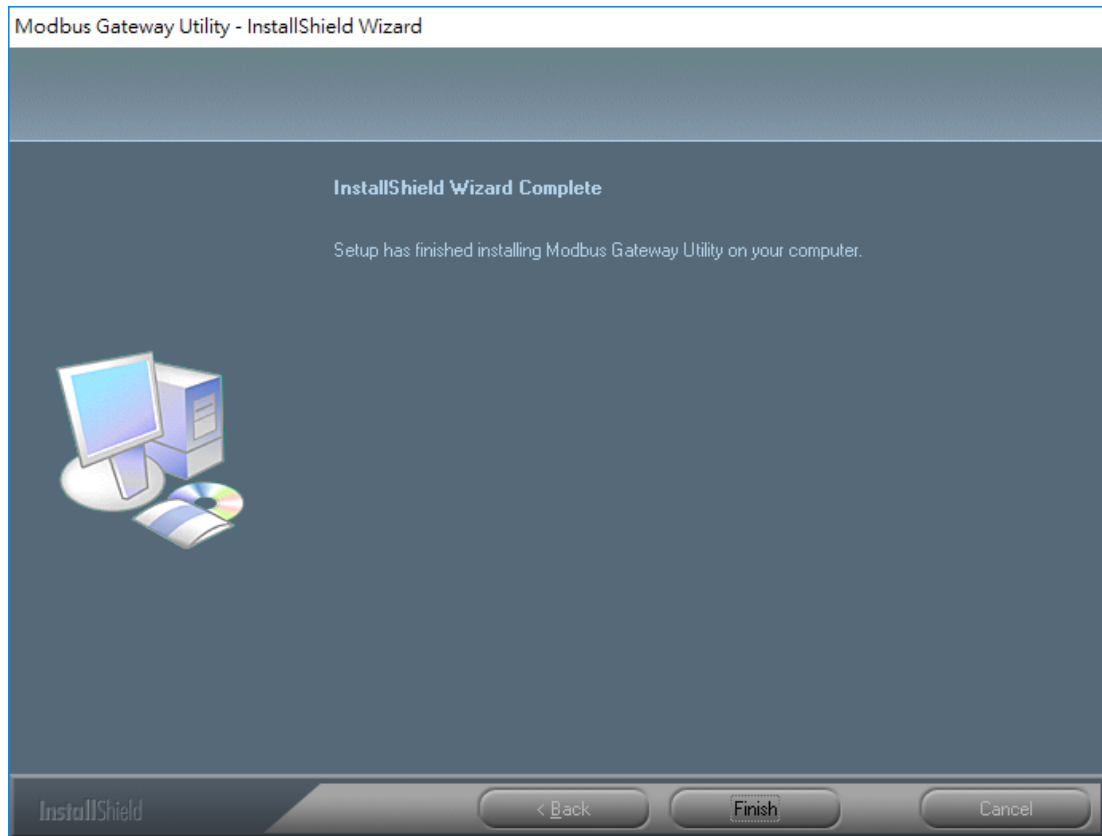


Figure 5-1-4: Installation Finished

5. Restart computer as shown in [Figure 5-1-5](#).

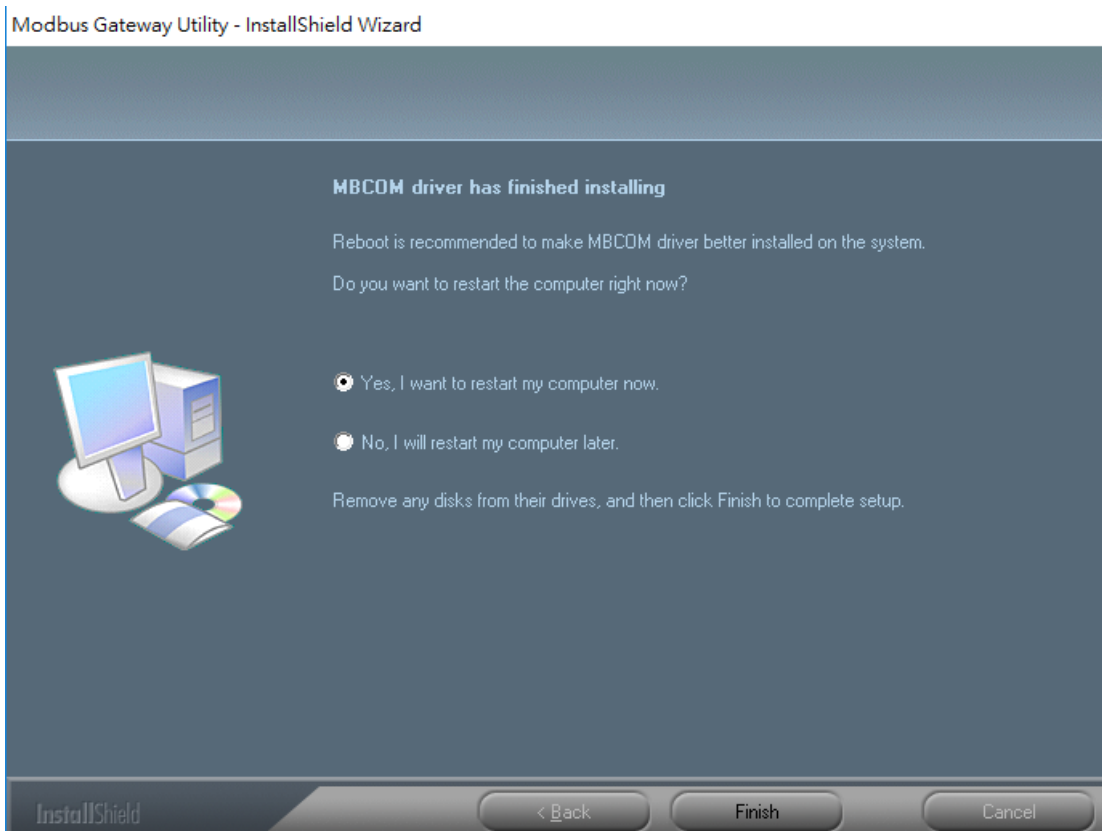


Figure 5-1-5: Restart System

5.2 Search Devices

1. First click "Add Device" and then click "Search" if device has access to network, as shown in [Figure 5-2-1](#).

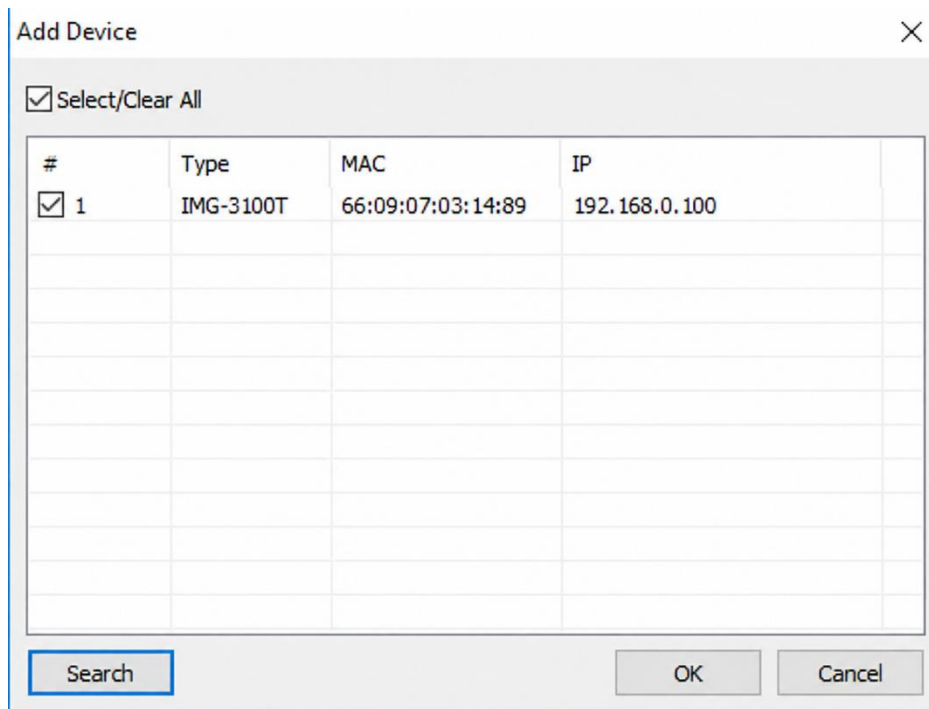


Figure 5-2-1: Searching Devices

2. After adding an MG-110 device as shown in Figure [Figure 5-2-2](#).

When you close searching window, it will add device automatically on main window. If you want to modify MG-110, please click "Open in Browser" to modify on web page.

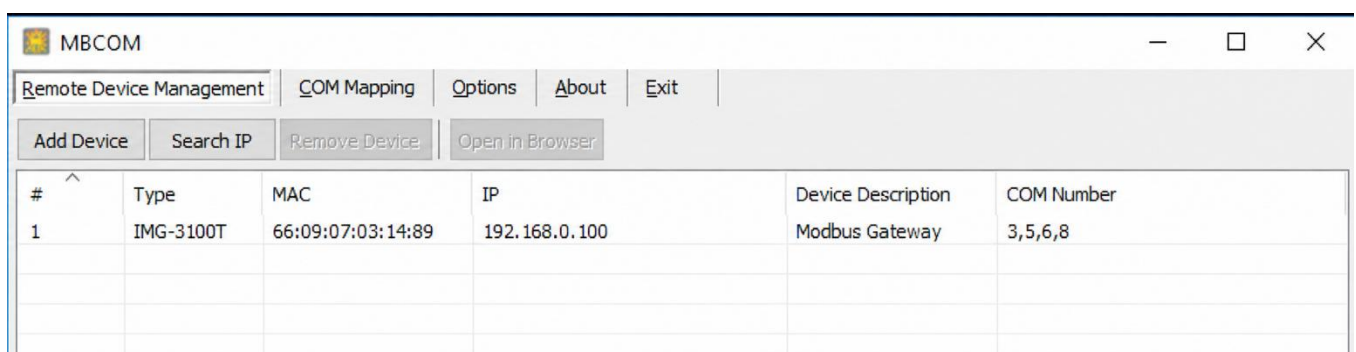


Figure 5-2-2: A device successfully added

5.3 COM Port Mapping

This function should be set as **VCOM mode** on the Modbus Gateway. VCOM software will create the corresponding virtual COM ports for com port mapping as shown in [Figure 5-3-1](#).

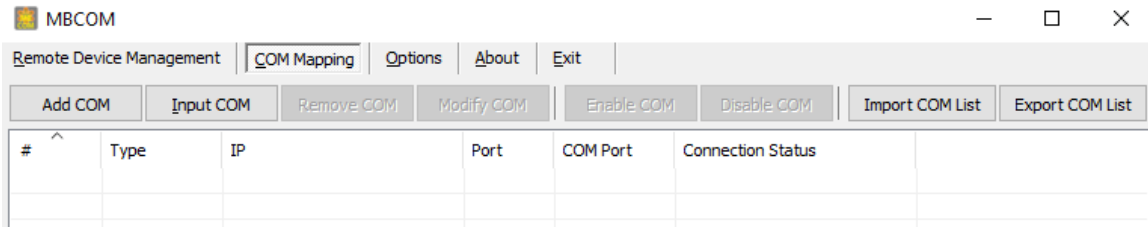


Figure 5-3-1: VCOM software

Add Virtual COM port

1. Click "Search" to search the network for device servers.
2. Once a server has been found, select it to add it to the COM mapping list and Click "OK" to take effect as shown in [Figure 5-3-2](#).

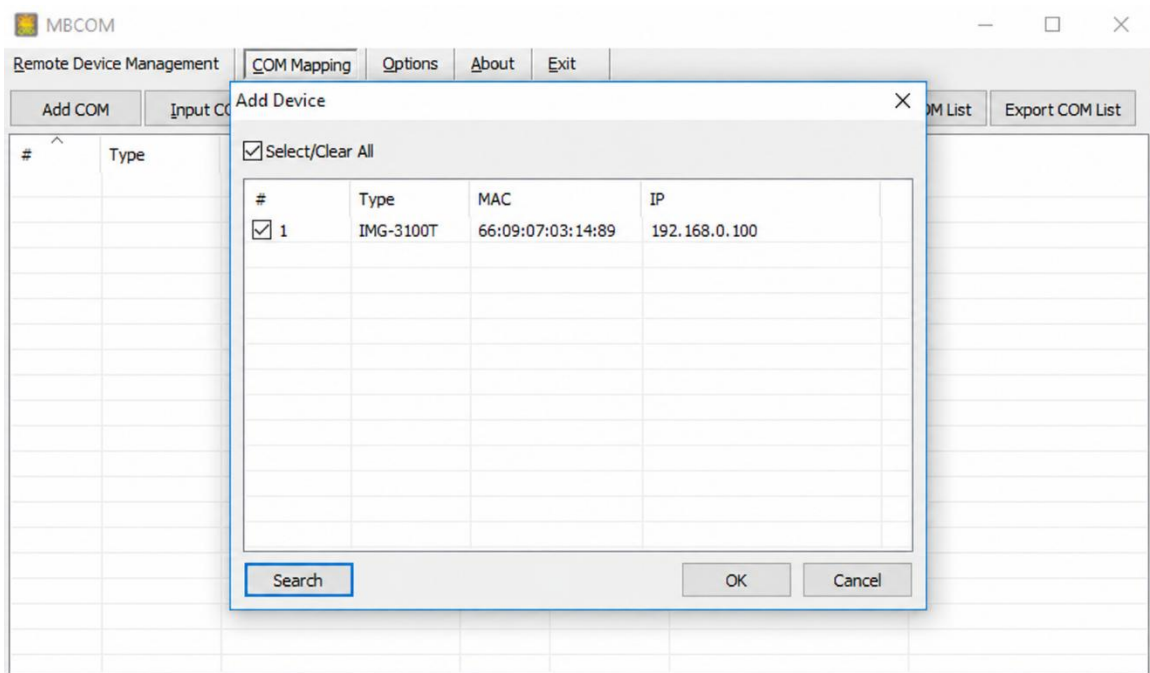


Figure 5-3-2: VCOM software

3. Virtual com ports are generated as shown in [Figure 5-3-3](#).

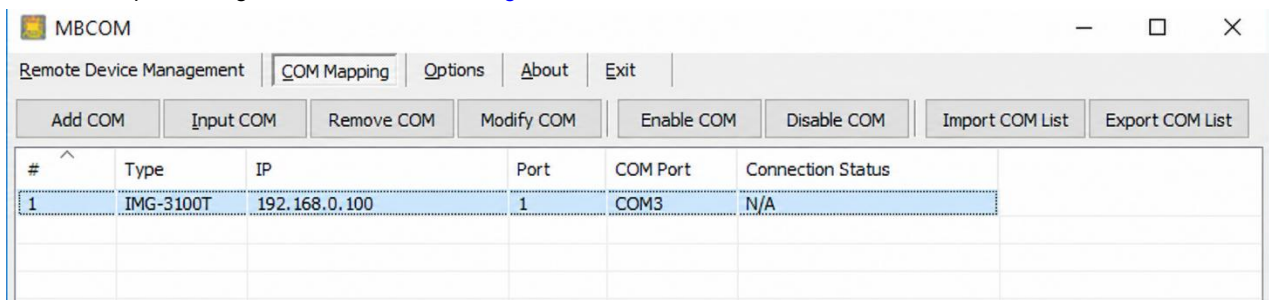


Figure 5-3-3: Virtual COM Ports

4. From the Windows Device Manager, four COM Ports are added to the device list as shown in [Figure 5-3-4](#).

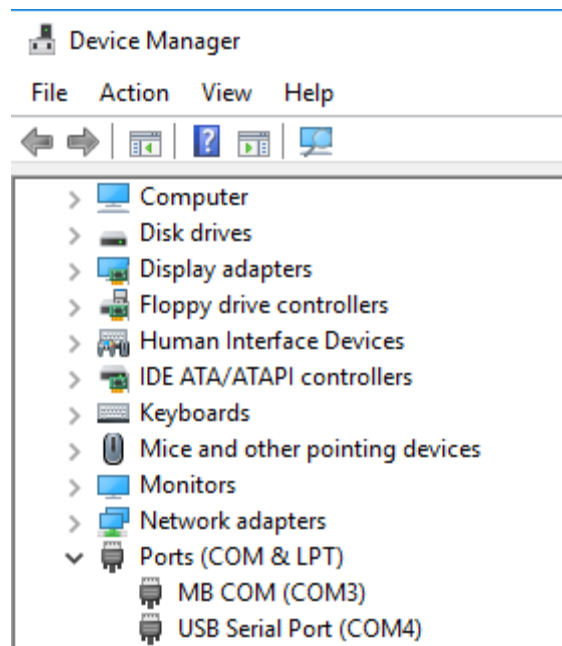


Figure 5-3-4 : Virtual COM Ports