



IFD9506

Ethernet Communication Module

Applicaton Manual



<http://www.delta.com.tw/industrialautomation>



Warning

- ✓ Please read this instruction carefully before use and follow this instruction to operate the device in order to prevent damages on the device or injuries to staff.
- ✓ Switch off the power before wiring.
- ✓ IFD9506 is an OPEN TYPE device and therefore should be installed in an enclosure free of airborne dust, humidity, electric shock and vibration. The enclosure should prevent non-maintenance staff from operating the device (e.g. key or specific tools are required for operating the enclosure) in case danger and damage on the device may occur.
- ✓ IFD9506 is to be used for controlling the operating machine and equipment. In order not to damage it, only qualified professional staff familiar with the structure and operation of IFD9506 can install, operate, wire and maintain it.
- ✓ DO NOT connect input AC power supply to any of the I/O terminals; otherwise serious damage may occur. Check all the wirings again before switching on the power and DO NOT touch any terminal when the power is switched on. Make sure the ground terminal ⊕ is correctly grounded in order to prevent electromagnetic interference.



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1 Introduction

To ensure correct installation and operation of IFD9506, please read this chapter carefully before using your IFD9506.

IFD9506 is an Ethernet communication module for remote setting through Delta's DCISoft or remote setting and communication through WPLSoft.

IFD9506 has 3 digital input contacts on it. They will send out messages to designated E-Mail addresses once being triggered.

IFD9506 supports Modbus TCP protocol and can be used for remote monitoring with graphic control software or human machine interface.

IFD9506 can be Modbus TCP master, sending out Modbus TCP commands and controlling the peripheral equipment.

IFD9506 can be a slave as well, receiving Modbus commands sent out from another master and sending the command to another Modbus communication network through Ethernet. In addition, in MDI/MDI-X auto-detect, jump wire is not needed when you choose the network cable.

1.1 Features

- Auto-detects 10/100 Mbps transmission speed; MDI/MDI-X auto-detect.
- The monitor table temporarily stores the monitored data for you to fast save or acquire the data.
- Supports Modbus TCP protocol (both master and slave modes)
- Able to send out E-Mails when triggered.
- The station address, RS-485 communication format and baud rate can be set up externally.

1.2 Specifications

■ Ethernet interface

Interface	RJ-45 with Auto MDI/MDIX
Number of ports	1 port
Transmission method	IEEE802.3, IEEE802.3u
Transmission cable	Category 5e
Transmission speed	10/100 Mbps Auto-Defect
Communication protocol	ICMP, IP, TCP, UDP, DHCP, SMTP, Modbus TCP

■ COM1

Interface	Mini Dim
Number of ports	1 port
Transmission method	RS-232
Transmission cable	DVPACAB215 / DVPACAB230 / DVPACAB2A30
Transmission speed	110/150/300/600/1200/2,400/4,800/9,600/19,200/38,400/57,600/115,200
Communication protocol	Modbus, Delta Configuration, User Define

■ COM2

Interface	RJ-11
Number of ports	1 port
Transmission method	RS-485

Transmission speed	110/150/300/600/1,200/2,400/4,800/9,600/19,200/38,400/57,600/115,200
Communication protocol	Modbus, User Define

■ Terminal block

Interface	Feed-through terminal 10PIN
Transmission method	RS-485
Transmission distance	1,200m
Transmissioi speed	110/150/300/600/1,200/2,400/4,800/9,600/19,200/38,400/57,600/115,200
Communication protocol	Modbus, User Define
Max. number of stations	32

■ Environment

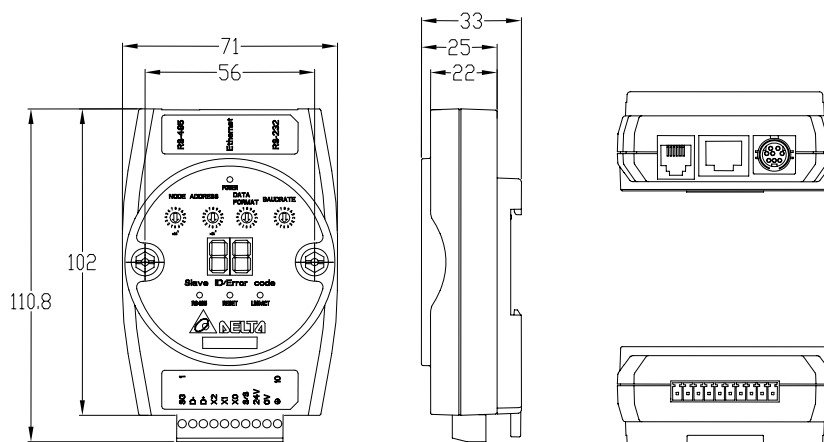
Noise immunity	ESD (IEC 61131-2, IEC 61000-4-2): 8KV Air Discharge EFT (IEC 61131-2, IEC 61000-4-4): Power Line:±2KV, Digital Input: ±2KV, Communication I/O: ±2KV RS (IEC 61131-2, IEC 61000-4-3): 80MHz~1GHz, 10V/m. 1.4GHz ~ 2.0GHz, 10V/m Conducted Susceptibility Test (EN61000-4-6, IEC61131-2 9.10): 150kHz ~ 80MHz, 3V/m Surge Test (Biwave IEC61132-2, IEC61000-4-5): Power line 0.5KV DM, Ethernet 0.5KV CM, RS-485 0.5KV CM
Operation	0°C ~ 55 °C (temperature), 50% ~ 95% (humidity), pollution degree 2
Storage	-25°C ~ 70°C (temperature), 5% ~ 95% (humidity)
Vibration/shock immunity	Standard: IEC 61131-2, IEC 68-2-6 (TEST Fc)/IEC61131-2 & IEC 68-2-27 (TEST Ea)
Certificates	IEC 61131-2, UL508

■ Electrical specification

Power supply voltage	24VDC (-15% ~ 20%) supplied by feed-through terminal
Power consumption	3W
Insulation voltage	500V
Weight	140g

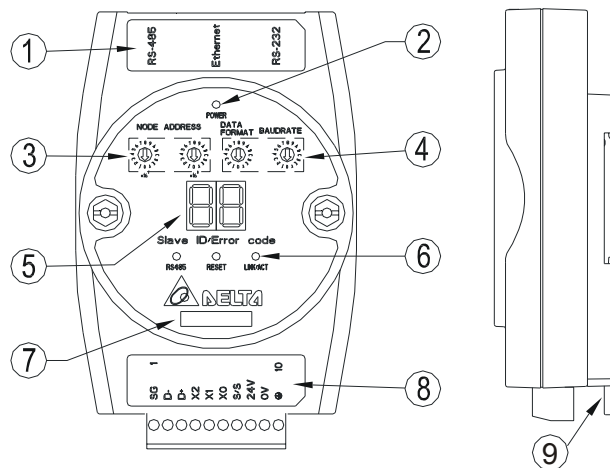
2 Product Profile & Outline

2.1 Dimension



Unit: mm

2.2 Product Profiles



- | | |
|-------------------------------------------------|----------------------------------------------------------------------------|
| ① Communication ports: RS-485, Ethernet, RS-232 | ⑥ RS-485 LED, Reset button, Ethernet LED |
| ② POWER LED | ⑦ Module name |
| ③ Address switch | ⑧ RS-485 connector, digital input points, power supply points, earth point |
| ④ Data format/baud rate switch | ⑨ DIN rail connector |
| ⑤ Digital display | |

2.3 LED Indicators

Name	Color	Function
POWER	Green	Power supply indication
RS-485	Green	Displaying the status of communication port
LINK/ACT	Green	Displaying the status of network

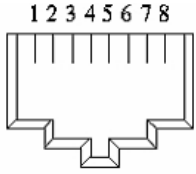
2.4 RJ-11 PIN Definition

RJ-11 sketch	PIN.	Signal	Definition
	1	--	N/C
	2	--	N/C
	3	D+	Positive pole for data
	4	D-	Negative pole for data
	5	GND	Ground
	6	--	N/C

2.5 RJ-11 PIN Definition

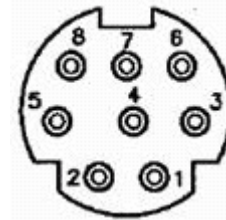
RJ-11 sketch	PIN.	Signal	Definition
	1	--	N/C
	2	--	N/C
	3	D+	Positive pole for data
	4	D-	Negative pole for data
	5	GND	Ground
	6	--	N/C

2.6 RJ-45 PIN Definition

RJ-45 sketch	PIN	Signal	Definition
	1	Tx+	Positive pole for data transmission
	2	Tx-	Negative pole for data transmission
	3	Rx+	Positive pole for data receiving
	4	--	N/C
	5	--	N/C
	6	Rx-	Negative pole for data receiving
	7	--	N/C
	8	--	N/C

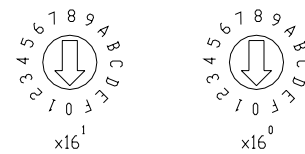
2.7 RS-232 PIN Definition

PIN	Signal	Definition
1	--	N/C
2	--	N/C
3	--	N/C
4	Rx	Reception data
5	Tx	Transmission
6	--	N/C
7	--	N/C
8	GND	Ground



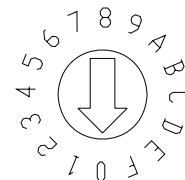
2.8 Address Switch

Switch setting	Content
01...F7	Valid node address setting



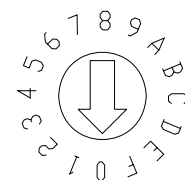
2.9 Data Format

Switch setting	Format	Switch setting	Format
0	7-N-1	8	7-N-2
1	8-N-1	9	8-N-2
2	7-O-1	A	7-O-2
3	8-O-1	B	8-O-2
6	7-E-1	E	7-E-2
7	8-E-1	F	8-E-2



2.10 Baud Rate for Modbus Communication

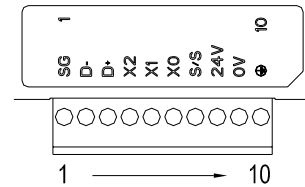
Switch setting	Baud rate	Switch setting	Baud rate
1	110	7	4,000
2	150	8	9,600
3	300	9	19,200
4	600	A	38,400



5	1,200	B	57,600
6	2,400	C	115,200

2.11 Feed-through Terminal PIN Definition

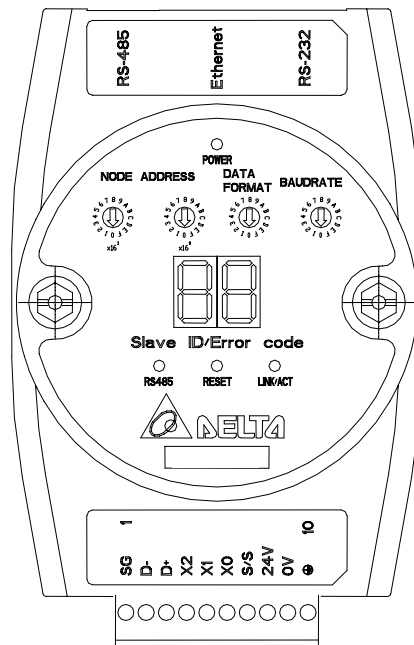
PIN	Signal	Definition
1	SG	Reference ground of signal
2	D-	Data-
3	D+	Data-
4	X2	Digital input 2
5	X1	Digital input 1
6	X0	Digital input 0
7	S/S	Reference ground of digital input
8	24V	+24V input
9	0V	0V input
10		Earth ground



3 Installation & Wiring

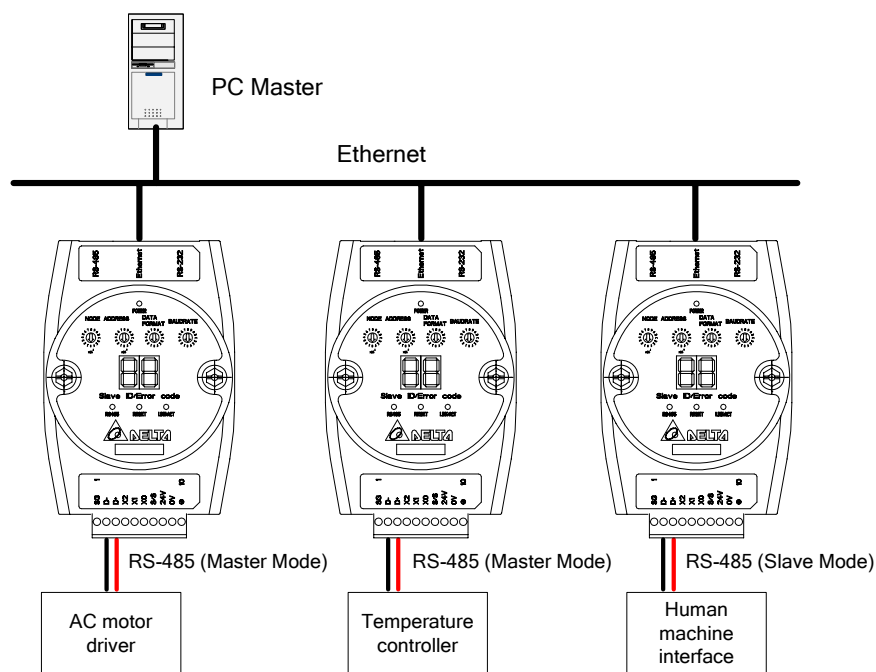
In this section, we will introduce how to connect IFD9506 to other devices and the network.

3.1 How to Install



3.2 How to Connect IFD9506 to Network

Connect IFD9506 to the Ethernet hub by CAT-5e twisted pair. Since IFD9506 has Auto MDI/MDIX function, CAT-5e twisted pair does not need to jump wire. See below for the connection between the PC and IFD9506 modules:



4 Registers in IFD9506

4.1 Basic Registers (BR)

BR#	Attribute	Content	Explanation	Default	Latched
0	R	Model name	Set up by the system; read only. The model code of IFD9506 = H'0200		Yes
1	R	Firmware version	Displaying the current firmwawre version in hex, e.g. V1.2 is indicated as high byte = 0x01 and low byte = 0x20.		Yes
2	R	Release data of the version	Displaying the data in decimal form. 10,000s digit and 1,000s digit are for "month"; 100s digit and 10s digit are for "day". For 1s digit: 0 = morning; 1 = afternoon. Example: 12191 indicates the version released in the afternoon of December 19.		Yes
3		Reserved			
4	R/W	Communication format	Please refer to the table of communication format setting.		No
5	R/W	Baud rate	Please refer to the table of baud rate setting.		No
6	R/W	Address	For setting up the station address		No
7	R	Number of DI/DO points	DI: high bytes; DO: low bytes	0x300	Yes
8		Reserved			
9	R	Error code	Displaying the errors. Please refer to the table of error codes.	0	No
10		Reserved			
11	R/W	Communication time-out	For setting up the communication time-out (ms) in Modbus TCP mode.	5,000	Yes
12	R/W	Communication delay time	For setting up the minimum interval time between every communication datum. °	0	Yes
13	R/W	TCP connection idle time	For setting up idle time for TCP communication Unit: second	30	Yes

BR#	Attribute	Content	Explanation	Default	Latched
14 ~ 32		Reserved			
33	R/W	Returning to default setting		0	No

Symbol "R" refers to read only; "R/W" refers to read and write.

4.2 Explanations on BR

BR#0: Model Name

Explanations:

1. Model code of IFD9506 = H'0200.
2. You can read the model code in the program to see if the extension module exists.

BR#1: Firmware Version

Explanations:

The firmware version of IFD9506 is displayed in hex, e.g. H'0100 indicates version V1.00.

BR#2: Release Date of the Version

Explanations:

Displaying the data in decimal form. 10,000s digit and 1,000s digit are for "month"; 100s digit and 10s digit are for "day". For 1s digit: 0 = morning; 1 = afternoon.

Example: 12191 indicates the version released in the afternoon of December 19.

BR#4: Communication Format

Explanations:

BR#4 low byte								
	b7 ~ b4		b3		b2 ~ b1		b0	
Explanation	Reserved		Stop bit 0: 1 stop bit 1: 2 stop bits		Parity bit 00: None parity bit 01: Odd parity bit 11: Even parity bit		Data bit 0: 7 data bits 1: 8 data bits	
Content	0000 (0)	7-N-1	0011 (3)	8-O-1	1000 (8)	7-N-2	1011 (B)	8-O-2
	0001 (1)	8-N-1	0110 (6)	7-E-1	1001 (9)	8-N-2	1110 (E)	7-E-2
	0010 (2)	7-O-1	0111 (7)	8-E-1	1010 (A)	7-O-2	1111 (F)	8-E-2

BR4 High byte						
	B7	B6~B4	B3	B2	B1	B0
Explanation	RS-485 User Define 0: Disable 1: Enable	Reserved	RS-232 User Define 0: Disable 1: Enable	COM2 RS-485 setting 0: Serial Master 1: Serial Slave Ethernet Server Ethernet Client	COM1 RS-232 setting 0: Delta 1: Modbus Configuration	Mode 0: ASCII 1: RTU
Content	00000000 (0)	Disable	Disable	Serial Master	Delta configuration	ASCII
	00000001 (1)	Disable	Disable	Serial Master	Delta configuration	RTU

BR4 High byte						
	B7	B6~B4	B3	B2	B1	B0
	00000010 (2)	Disable	Disable	Serial Master	Modbus	ASCII
	00000011 (3)	Disable	Disable	Serial Master	Modbus	RTU
	00000100 (4)	Disable	Disable	Serial Slave	Delta configuration	ASCII
	00000101 (5)	Disable	Disable	Serial Slave	Delta configuration	RTU
	00000110 (6)	Disable	Disable	Serial Slave	Modbus	ASCII
	00000111 (7)	Disable	Disable	Serial Slave	Modbus	RTU
	00001000 (8)	Disable	Enable	Serial Master	Delta configuration	ASCII
	:	:	:	:	:	:
	10000111 (135)	Enable	Disable	Serial Slave	Modbus	RTU
	10001000 (136)	Enable	Enable	Serial Master	Delta configuration	ASCII
	10001001 (137)	Enable	Enable	Serial Master	Delta configuration	RTU
	10001010 (138)	Enable	Enable	Serial Master	Modbus	ASCII
	10001011 (139)	Enable	Enable	Serial Master	Modbus	RTU
	10001100 (140)	Enable	Enable	Serial Slave	Delta configuration	ASCII
	10001101 (141)	Enable	Enable	Serial Slave	Delta configuration	RTU
	10001110 (142)	Enable	Enable	Serial Slave	Modbus	ASCII
	10001111 (143)	Enable	Enable	Serial Slave	Modbus	RTU

BR#5: Baud Rate

Explanations:

BR#5 low byte for baud rate of COM1							
Content	Communication interface	Explanation					
		Data	Baud rate (bps)	Data	Baud rate (bps)	Data	Baud rate (bps)
	RS-232	0x01	110	0x06	2,400	0x0B	57,600
		0x02	150	0x07	4,800	0x0C	115,200
		0x03	300	0x08	9,600		
		0x04	600	0x09	19,200		
		0x05	1,200	0x0A	38,400		
BR#5 high byte for baud rate of COM2							
Content	RS-485 same as low byte						

BR#6: Address

Explanations:

For filling in or reading the Modbus address. The address will be displayed in the message display after being set up.

BR#7: Number of DI/DO Points

Explanations:

Read the number of DI/DO points from BR#7.

BR#9: Error Code

Explanations:

Error code = 0 refers to no error occurring.

Code	Indication	How to correct
01 ~ F7	Node address of the scan module (when operating normally)	--
F0	Returning to default setting	--
F1	IFD9506 being powered	--
F2	Power supply in low voltage	Check if the power supply of the module works normally.
F3	Internal memory detection error	1. Re-power IFD9506. If the error still exists, try step 2. 2. Reset IFD9506. If the error still exists, send the module back to the manufacturer for repair.
F4	Internal error. Manufacturing error	1. Re-power IFD9506. If the error still exists, try step 2. 2. Reset IFD9506. If the error still exists, send the module back to the manufacturer for repair.
F5	Network connection error	Check if IFD9506 is connected normally to the network.
F6	Full number of devices connected in the network.	Check if the number is too much.
F7	UART setting error.	Check if the RS-485, RS-232 communication format is correct.
E1	Alarm 1 triggered	Check alarm point 1.
E2	Alarm 2 triggered	Check alarm point 2.
E3	Alarm 3 triggered	Check alarm point 3.
01	Incorrect Modbus function	Check if the Modbus instruction is correct.
02	Incorrect address	Check if the Modbus instruction is correct.
03	Incorrect data	Check if the Modbus instruction is correct.
04	CRC error	1. Check if IFD9506 is normally connected to RS-485. 2. Make sure the transmission speed of IFD9506 is consistent with that of other nodes on the network.
0B	No response from the station	1. Check if IFD9506 is normally connected to RS-485. 2. Make sure the transmission speed of IFD9506 is consistent with that of other nodes on the network.

BR#11: Communication Time-out (ms)

Explanations:

For setting up the communication time-out. Default = 5,000ms. For example, if you wish to set up the communication time-out to 7 seconds manually, write 7000 into BR#11.

BR#12: Communication Delay Time (ms)

Explanations:

For setting up the minimum interval time between every Modbus communication datum. Default = 0ms. For example, if you wish to set up the communication delay time to 100ms manually, write 100 into BR#12.

BR#13: TCP Connection Idle Time (s)

Explanations:

For setting up the TCP Connection Idle time. Default = 30s. For example, if you wish to set up the idle time to 7 seconds manually, write 7 into BR#13.

BR#33: Returning to Default Setting

Explanations:

IFD9506 will return to default setting when "1" is written into BR#33. BR#33 will be cleared to "0" automatically after the returning.

4.3 Alarm Registers (AL)

AL#	Attribute	Content	Explanation	Default	Latched
0	R/W	Alarm point 1		0	Yes
1	R/W	Alarm point 2		0	Yes
2	R/W	Alarm point 3		0	Yes

Symbol "R" refer to read only; "R/W" refers to read and write.

AL#0: Alarm Point 1

Explanations:

You can designate 1 RX extension point as the alarm point by setting up the AL register in IFD9506. When the alarm point is triggered, IFD9506 will execute its corresponding function. When b15 of AL#0 is set to "1", the gateway will execute the event immediately. When RX point is triggered, the gateway will only execute the triggered event once.

Device		Function	Setting	Attribute	Default	Latched	
AL#0	b15	Enabling the function	b15 = 1: Enabling b15 = 0: Disabling	R/W	0	Yes	
	b4 ~ b14	Reserved		R/W	0	No	
	b2 ~ b3	Type of event enabled when RX alarm point is triggered		b3 b2	R/W	0	Yes
			Reserved	0 0			
			Trigger E-Mail	0 1			
			Reserved	1 0			
Reserved	1 1	The setting will be invalid when the alarm function is being executed.					
b1	Reserved	Reserved					
b0	Condition for triggering RX	b0 = 0: Triggered when RX input point is low b0 = 1: Triggered when RX input point is high	R/W	0	Yes		

AL#1: Alarm Output 2

Explanations:

The settings for AL#1 are the same as those in AL#0.

AL#2: Alarm Output 3

Explanations:

The settings for AL#2 are the same as those in AL#0.

5 Monitoring Functions

5.1 Monitor Bit Registers (MB)

MB#	Attribute	Content	Explanation	Default	Latched
0	R/W	Number of devices monitored	Cache mode normally enabled (b15=1), monitoring data in max. 16 slaves.	0	Yes
1	R/W	No. of station monitored	No. of the station to be monitored	0	Yes
2	R/W	Address of the device monitored	Recording the address of the device monitored.	0	Yes
3 ~ 32	R/W	No. of station monitored, address of the device monitored	No. of the station to be monitored; recording the address of the device monitored.	0	Yes
33 ~ 200	R/W	Reserved			
201	R	Monitored value	Every MB records the value in the 16-bit device.	0	No
202 ~ 213	R	Reserved			
214	R	Monitored status	Every MB records the status in the 16-bit device. 1 = normal; 0 = abnormal	0	No

Symbol "R" refer to read only; "R/W" refers to read and write.

MB#0: Number of Devices Monitored

Explanations:

For setting up the number of devices to be monitored. Max. data in 16 slaves can be monitored.

b15 is read only (Default =1: normally enabled cache mode)

MB# (Odd Number): No. of Station Monitored

Explanations:

MB#1, MB#3, MB#5...MB#33 are for setting up the station No. (0 ~ 255) to be monitored.

MB# (Even Number): Address of Device Monitored

Explanations:

MB#2, MB#4, MB#6...MB#34 are for setting up the address of the device to be monitored.

MB#201: Monitored Value

Explanations:

Every MB records the values in the 16-bit device.

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Device 16	Device 15	Device 14	Device 13	Device 12	Device 11	Device 10	Device 9	Device 8	Device 7	Device 6	Device 5	Device 4	Device 3	Device 2	Device 1

MB#214: Monitored Status

Explanations:

Every MB records the status in the 16-bit device. 1 = normal; 0 = abnormal.

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Device 16	Device 15	Device 14	Device 13	Device 12	Device 11	Device 10	Device 9	Device 8	Device 7	Device 6	Device 5	Device 4	Device 3	Device 2	Device 1

5.2 Monitor Word Registers (MW)

MW#	Attribute	Content	Explanation	Default	Latched
0	R/W	Number of devices monitored	Cache mode normally enabled (b15=1), monitoring data in max. 16 slaves.	0	Yes
1	R/W	No. of station monitored	No. of the station to be monitored	0	Yes
2	R/W	Address of the device monitored	Recording the address of the device monitored	0	Yes
3 ~ 32	R/W	No. of station monitored, address of the device monitored	No. of the station to be monitored; recording the address of the device monitored.	0	Yes
33 ~ 200	R/W	Reserved			
201 ~ 216	R	Monitored value	Every MW records the monitored value in 1 register	0	No
216 ~ 300	R	Reserved			
301	R	Monitored status	Every MW records the status in a 16-bit register. 1 = normal; 0 = abnormal	0	No

Symbol "R" refers to read only; "R/W" refers to read and write.

MW#0: Number of Devices Monitored

Explanations:

For setting up the number of devices to be monitored. Max. data in 16 slaves can be monitored.

b15 is read only (Default =1: normally enabled cache mode)

MW# (Odd Number): No. of Station Monitored

Explanations:

MW#1, MW#3, MW#5...MW#33 are for setting up the station No. (0 ~ 255) to be monitored.

MW# (Even Number): Address of Device Monitored

Explanations:

MW32, MW34, MW#36...MW#34 are for setting up the address of the device to be monitored.

MW#201~#216: Monitored Value

Explanations:

Every MW records the values in 1 register.

MW#201	MW#202	MW#203	MW#204	MW#205	MW#206	MW#207	MW#208	MW#209	MW#210
Device 1	Device 2	Device 3	Device 4	Device 5	Device 6	Device 7	Device 8	Device 9	Device 10
MW#211	MW#212	MW#213	MW#214	MW#215	MW#216				
Device 11	Device 12	Device 13	Device 14	Device 15	Device 16				

MW#301: Monitored Status

Explanations:

Every MW records the status in a 16-bit register. 1 = normal; 0 = abnormal.

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Device 16	Device 15	Device 14	Device 13	Device 12	Device 11	Device 10	Device 9	Device 8	Device 7	Device 6	Device 5	Device 4	Device 3	Device 2	Device 1

6 Setting up Device Address & Relay Address in Slave Mode

MIP#	Attribute	Content	Explanation	Default	Latched
0 ~ 50	R/W	Corresponding address	Max. 100 addresses are allowed. High byte for 1 address and low byte for 1 address.	0	YES
50 ~ 249	R/W	Relay IP address	Total 100 IPs. Every address (1 byte) corresponds to 1 IP address (4 bytes).	0	YES

Symbol “R” refers to read only; “R/W” refers to read and write.

MIP#0: Corresponding Address

Explanations:

The low byte of MIP#0 are for the first address, and the high byte are for the second address, and so on.

MIP#51 ~ #52: Corresponding IP for the 1st Device Address

Explanations:

Example 1: If you wish to convert “192.168.0.1” into “COA80001” (hex), write A8C0 into MIP#50 and H0100 into MIP#51.

Example 2: Data in address 1 have to correspond to 192.168.0.8. Data in address 2 have to correspond to 192.168.0.6. To complete such settings, write H0201 into MIP#0, A8C0 into MIP#50, H0800 into MIP#51, A8C0 into MIP#52 and H0600 into MIP#53.

7 Modbus Communication

7.1 Function Codes Supported

Function code	Explanation	Devices supported
0x02	Read discrete input	RX
0x03	Read holding register	BR, AL, MB, MW, MIP
0x06	Write single holding register	BR, AL, MB, MW, MIP

Function code	Explanation	Devices supported
0x10	Write multiple holding registers	BR, AL, MB, MW, MIP
0x17	Read/write multiple holding registers	BR, AL, MB, MW, MIP

7.2 Exception Codes Supported

Exception code	Explanation
0x01	Illegal function
0x02	Illegal data address
0x03	Illegal data value
0x04	Slave device failure
0x0A	Gateway path unavailable
0x0B	Gateway target device failed to respond

7.3 Device Type & Device Address

Discrete input				
Device type	Modbus address (Hex)	5-digit Modbus address (Dec)	6-digit Modbus address (Dec)	Number
RX	0x0400 ~ 0x0402	11025 ~ 11027	101025 ~ 101027	3
Holding register				
Device type	Modbus address (Hex)	5-digit Modbus address (Dec)	6-digit Modbus address (Dec)	Number
BR	0x0000 ~ 0x00FF	40001 ~ 40256	400001 ~ 400256	64
AL	0x0200 ~ 0x0202	40513 ~ 40515	400513 ~ 400515	3
MB	0x2000 ~ 0x20FF	48193 ~ 48448	408193 ~ 408448	256
MW	0x2200 ~ 0x23FF	48705 ~ 49216	408705 ~ 409216	512
MIP	0x2400 ~ 0x24FF	49217 ~ 49471	409217 ~ 409471	256

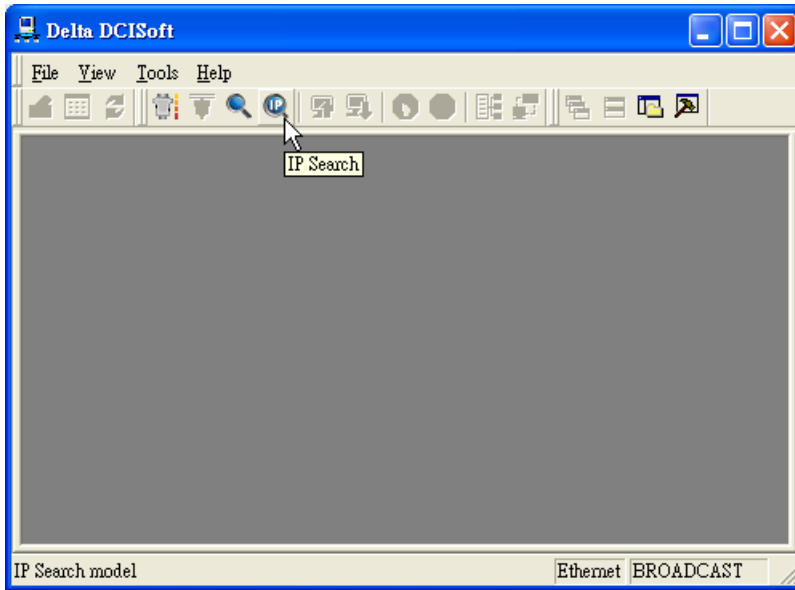
8 Setting up Software

This section gives instructions on how to set up IFD9506 by DCISoft and explanations on each setup page. IFD9506 is set up by UDP port 20006; therefore, you have to be aware of the relevant settings of the firewall. See the explanations below on the software.

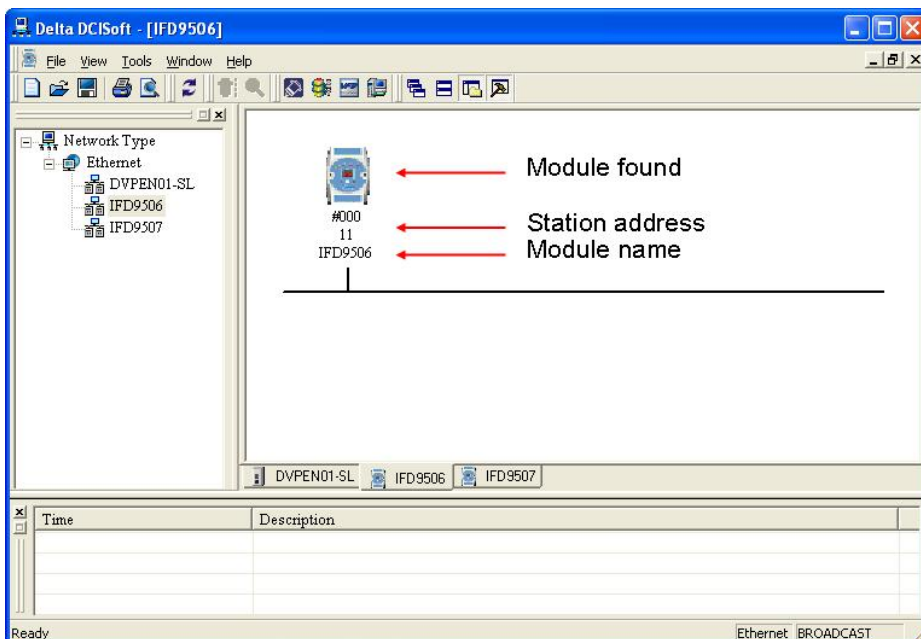
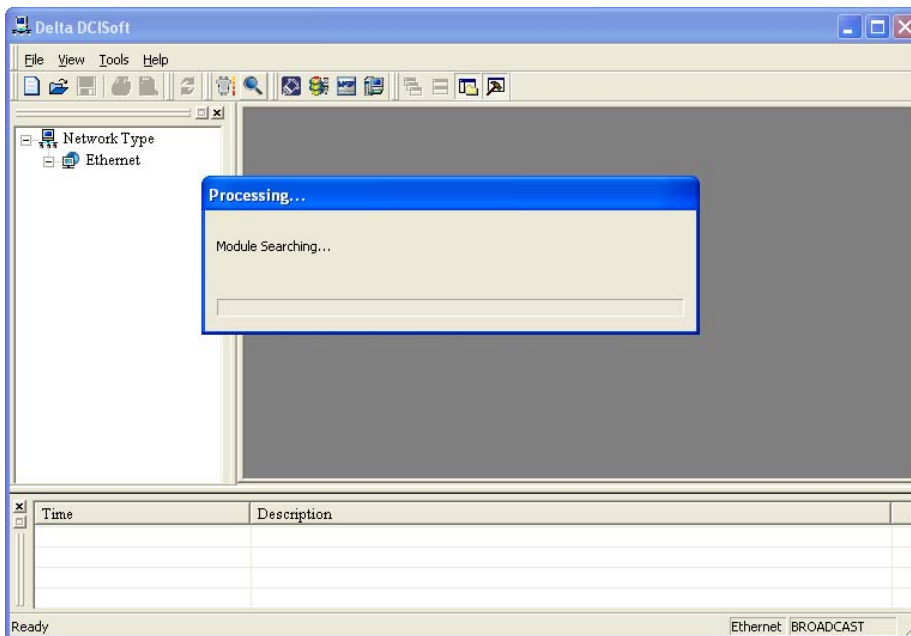
8.1 Setting up Communication & Searching for Modules in DCISoft

- Broadcast search

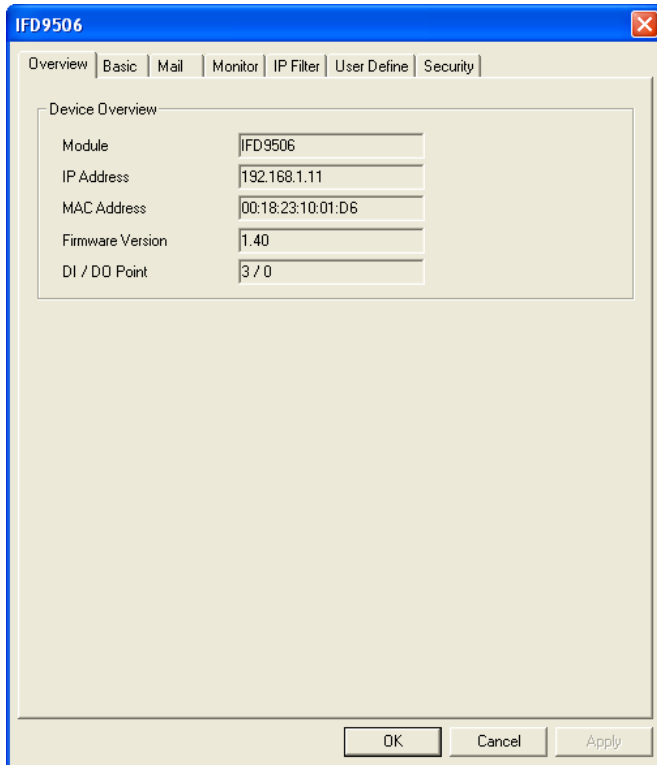
1. Open DCISoft on the PC and click on the "IP Search" icon.



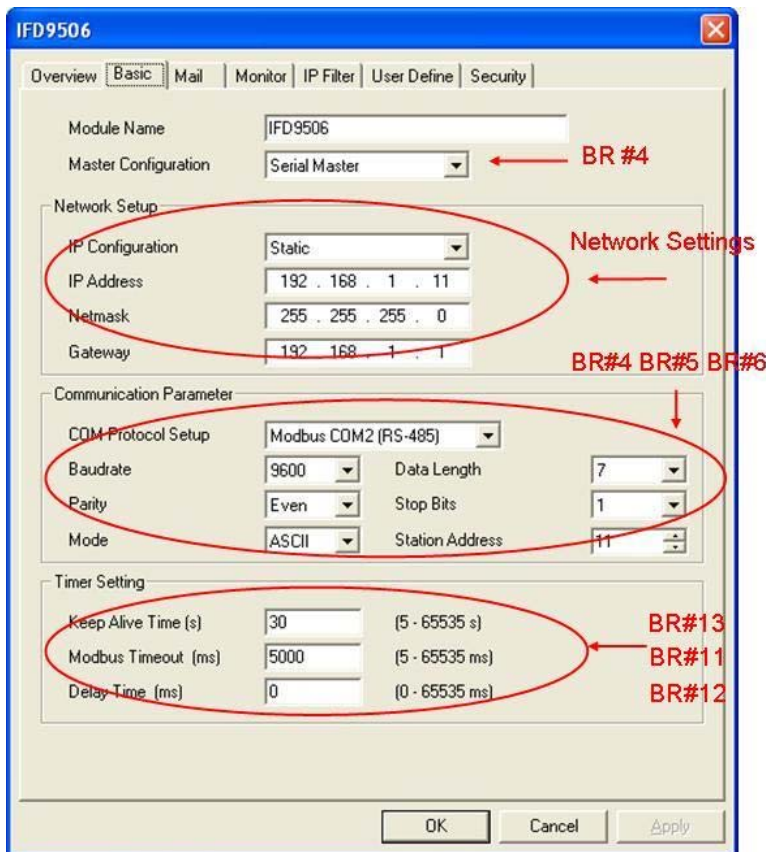
2. You will see the network modules found.



3. Double-click on the module to be set up to enter the setup page. The first page overviews the basic status of the module.



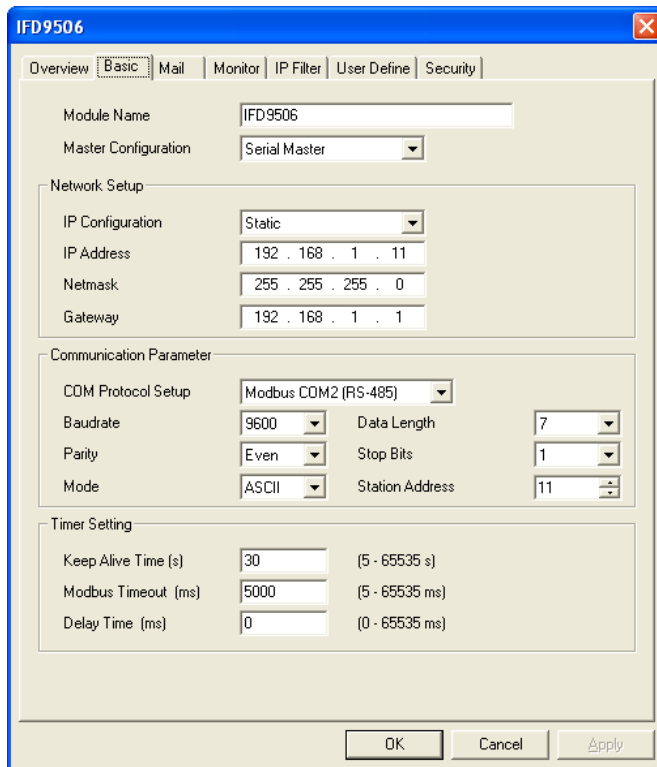
4. The next page is for basic network setup. Consult your ISP for relevant network settings. For other setting, see BR#4 ~ BR#6 and BR#11 ~ BR#13.



8.2 Basic Settings

The basic settings include parameters such as module name, network settings and serial communication.

- The basics



1. Module name:

There can be many IFD9506 modules on the network. Thus, you can set up a module name for each module to identify the module when you need to use them.

2. Master configuration:

Open “Serial Master” mode or “Serial Slave” mode.

3. Network settings:

Enable DHCP or static IP. Consult your ISP for other relevant settings.

- A. IP configuration:

There are 2 types of IP, static IP and DHCP.

Static IP: Preset or manually modified by the user.

DHCP: Automatically updated by the server. There has to be a server in the LAN.

IP	Explanation
Static	The user enters the IP address, subnet mask and gateway.
DHCP	DHCP server offers the IP address, subnet mask and gateway.

- B. IP address:

IP address is the location of the equipment on the network. Every equipment connected to the network has to have an IP address. Incorrect IP address will result in connection failure. Consult your ISP for how to set up IP address. The default IP for IFD9506 is 192.168.1.5.

- C. Subnet mask:

Subnet mask is an important parameter for setting up the subnet, used for seeing if the destination IP and the local equipment are in the same subnet. If not, the equipment will send the packet to the

gateway, and the gateway will send the packet to another subnet. Incorrect setting may cause the destination equipment unable to communicate to IFD9506. To see if your setting is correct, conduct bitwise AND operations between your IP and subnet mask and destination IP and subnet mask. If the two values obtained are the same, the two IPs are in the same subnet. The default subnet mask of IFD9506 is 255.255.255.0.

D. Gateway:

Gateway is the window for two different subnets, allowing the two ends in different subnets to communicate. For example, if the LAN has to be connected to WAN, it will need a gateway to bridge the communication. The IP of the gateway has to be in the same subnet as IFD9506. The default gateway of IFD9506 is 192.168.1.254.

4. Communication parameter setting:

Please refer to explanations on BR#4, BR#5, and BR#6.

5. Timer setting:

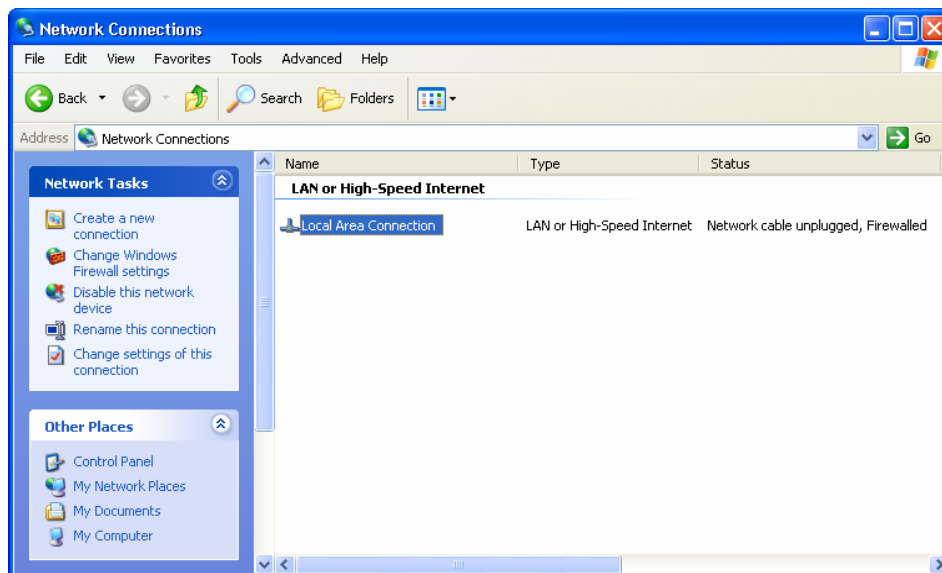
For setting up TCP connection idle time, Modbus time-out and minimum communication delay time for every communication data. Please refer to explanations on BR#11, BR#12, and BR#13.

8.3 Network Settings

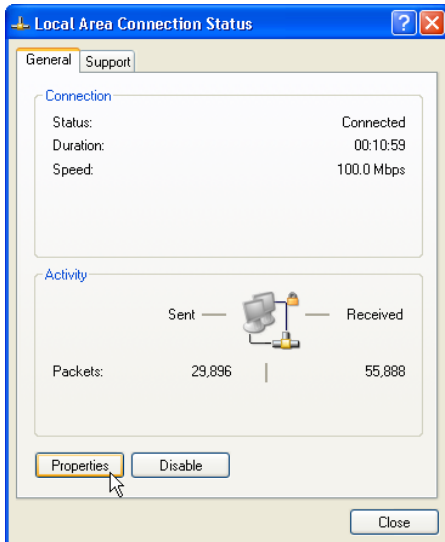
The first step for all the equipment to connect to the network is to have its own IP (Internet Protocol) address. The IP address is like a number for every equipment to be identified on the network.

■ Setting up static IP of the PC

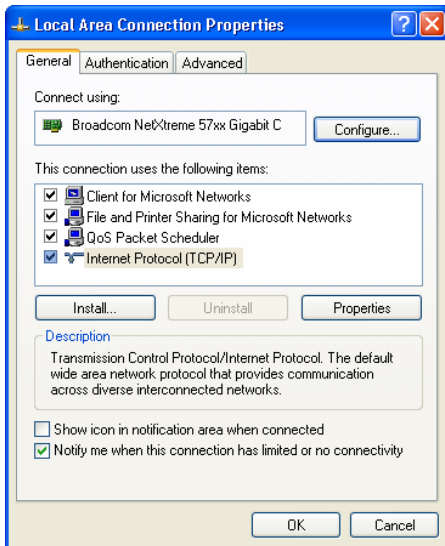
1. Enter Control Panel → Network Connection → click on “Local Area Connection”.



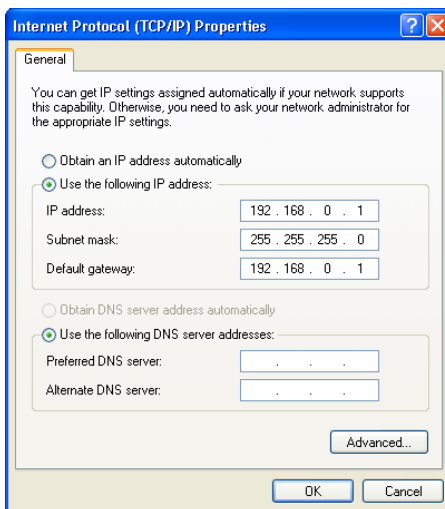
2. You will see the “Local Area Connection Status” window. Click on “Properties”.



3. Click on "Internet Protocol (TCP/IP)".



4. Enter "192.168.0.1" into IP address. Click on "OK" to complete the IP address setting of the PC.

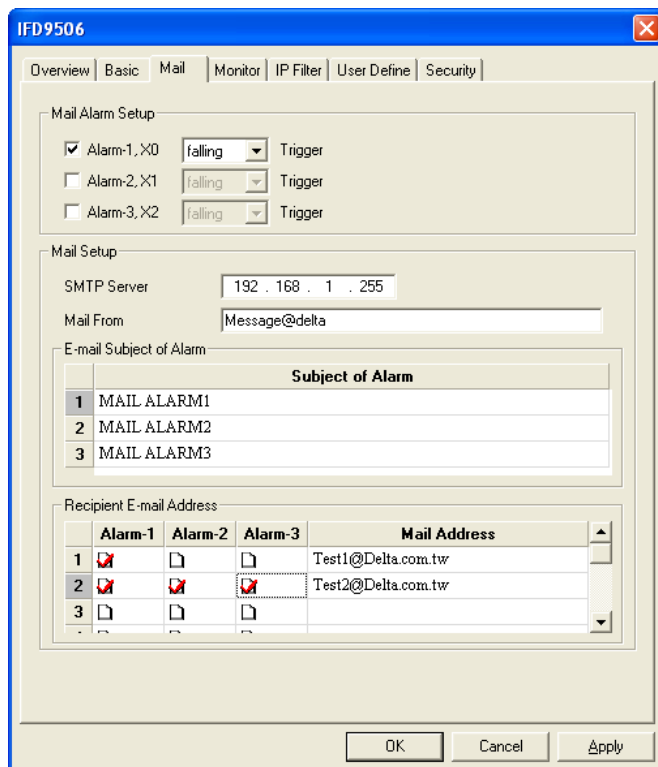


8.4 Setting up E-Mails

E-Mail is the abbreviation of electronic mail which transmits mails through the network. IFD9506 has E-Mail functions for the user to pre-save a segment of text message, which can be a descriptive message or error message, into the subject of the E-Mail. When the E-Mail is triggered, IFD9506 will send the messages to the

user by E-Mail.

■ Mail settings



1. Mail alarm setup:

There are 3 mail alarms to be set up. Check the boxes to enable the alarms. The alarm can be triggered by “low” and “high”.

2. SMTP server:

When Alarm 1 is triggered, the E-Mail will first be sent to SMTP server, and SMTP server will send it to the designated address. For example, assume there is an E-Mail to be sent to Test@delta.com.tw, and SMTP server is 192.168.0.1, the E-Mail will be sent to SMTP server first, and the server will further send it to the recipient Test1@delta.com.tw.

3. E-Mail of sender:

Maximum 63 English characters are allowed.

4. Subject of E-Mail:

You can enter the text message in the column, and the message will be placed in the subject of the E-Mail and sent to the recipient. IFD9506 is able to contain 1~3 E-Mail subjects. Max. 63 English characters are allowed for each subject.

5. E-Mail of recipient:

One mail can be sent to 10 addresses according to the alarm setting. Every address allows Max. 63 English characters. For example, (see the figure above) when Alarm 1 is triggered, the E-Mail will be sent to Test1@delta.com.tw. When Alarm 2 is triggered, the E-Mail will be sent to Test2@delta.com.tw.

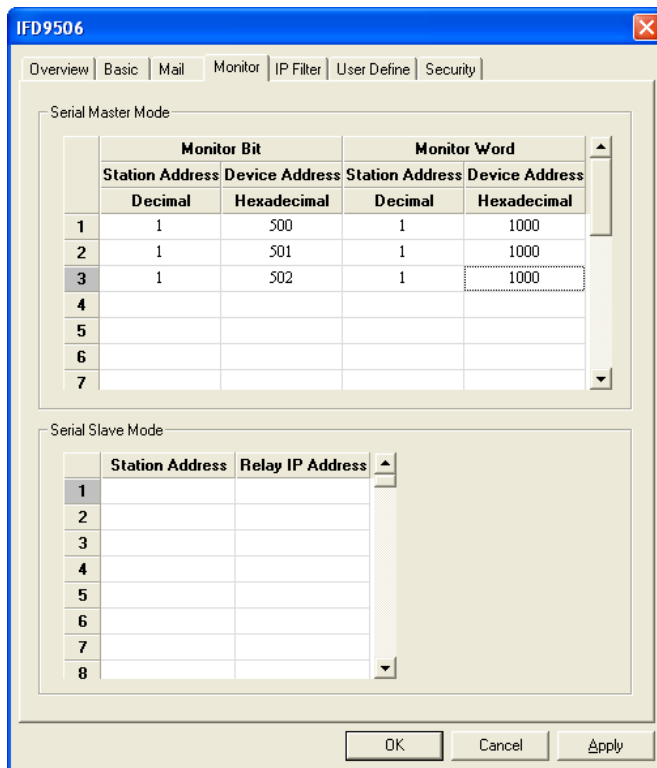
Note:

To correctly send out E-Mails, there has to be a SMTP server in the network. When we send out an E-Mail, the mail will be sent to SMTP server first, and the server will further send the mail to the designated address.

8.5 Monitoring Settings

You can read data in designated addresses in different equipment in the network by setting up IFD9506. The data can be temporarily stored in IFD9506 for fast storing and acquisition.

- Setting up monitoring functions



1. Monitor bit:

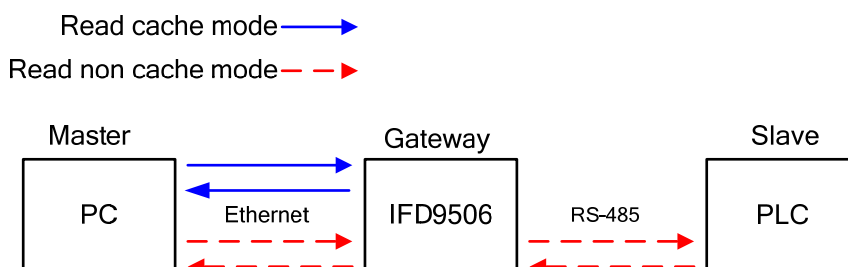
Device addresses for setting up the bit status of serial slave; able to read the content in the corresponding address of the designated slave.

2. Monitor word:

Device addresses for setting up the word status of serial slave; able to read the content in the corresponding address of the designated slave.

Note:

Cache mode normally enabled, and Max. data in 16 slaves can be monitored. When the cache mode is enabled, the data you would like to read will be sent back directly from the register in IFD9506.

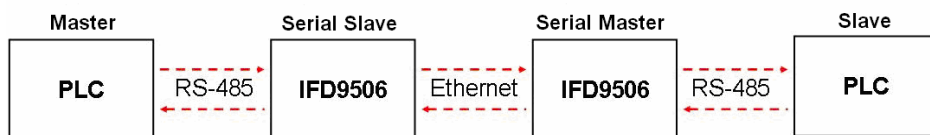


3. Serial slave mode:

The instruction sent from the master is received and transferred to the network. Please designate the station address and relay IP address.

Device address: Address of the slave PLC

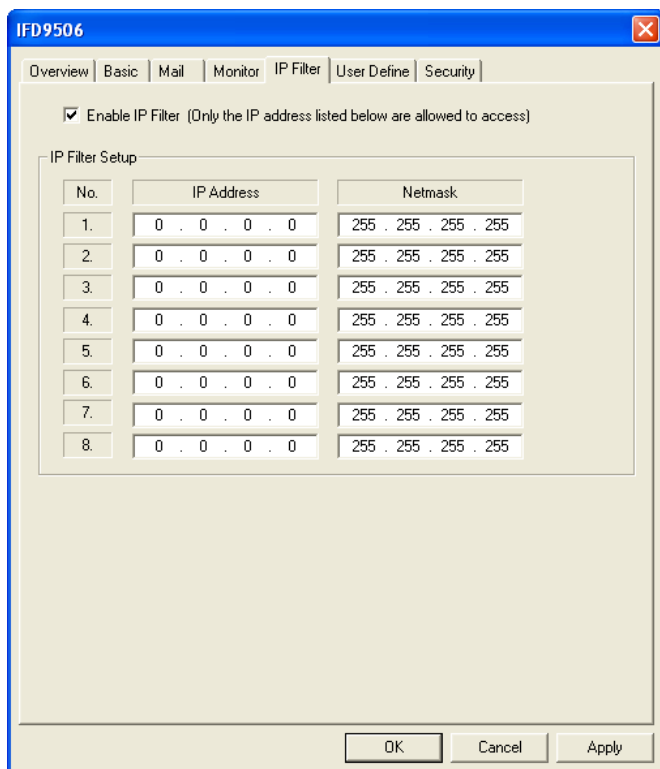
Relay IP address: IP of the serial master



8.6 IP Filter

The IP filter is used for restricting the connection of the network in case some uncertain UP will cause errors. Only the IP set within a certain range can establish a connection. Other IPs will be rejected.

■ Setting up IP filter

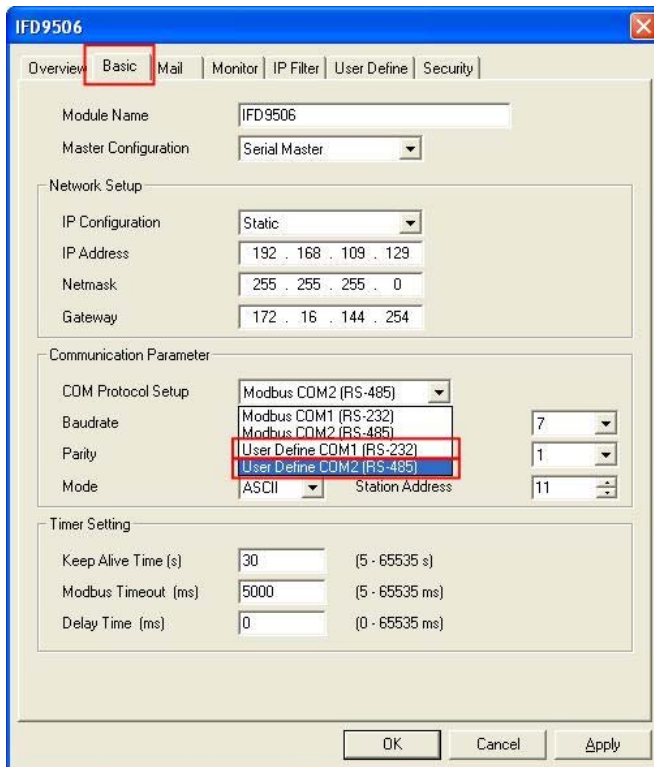


1. Enable IP filter function:
Check the box to enable IP filter.
2. IP address:
IP addresses that are allowed to establish connections. Max. 8 IPs are allowed.
3. Netmask:
Subnet mask of the UP that is allowed to establish a connection. To see whether the subnet mask is allowed, conduct bitwise AND operation between the allowed IP and subnet mask and destination IP and subnet mask. If the two values obtained are the same, the subnet mask is allowed by the network. For example, assume the IP is 192.168.0.1 and subnet mask 255.255.255.0, the IPs allowed to establish connections will become 192.168.0.0 ~ 192.168.0.255.

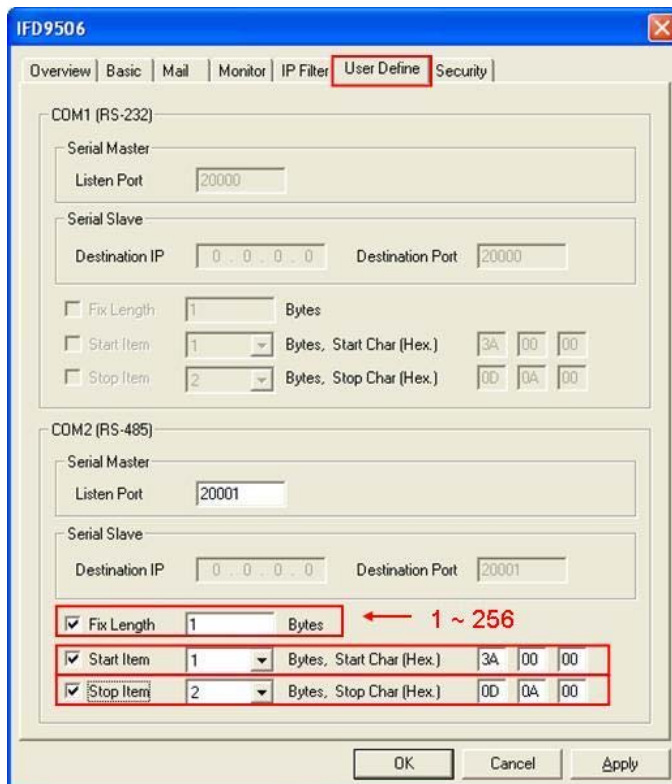
8.7 User Defined Format

You can define your own format for the data to be transmitted. The items to be defined include the fixed length, start item and stop item.

- Select RS-232 or RS-485 to connect the device



- Switch to “User Define” page to set up the “Fix Length”, “Start Item” and “Stop Item”.



- Listen Port/Destination Port:
Range: 1024 ~ 65535.
- Fix Length:
When this is set, IFD9506 will transmit data following the fixed length.
- Start Item:
The start item of data. Range: 1 ~ 3

4. Stop Item:

The stop item of data. Range: 1 ~ 3

When the start item and stop item are set, IFD9506 will transmit data following the start item and stop item. If the transmission time exceeds the Modbus time-out, IFD9506 will dispose of incomplete data.

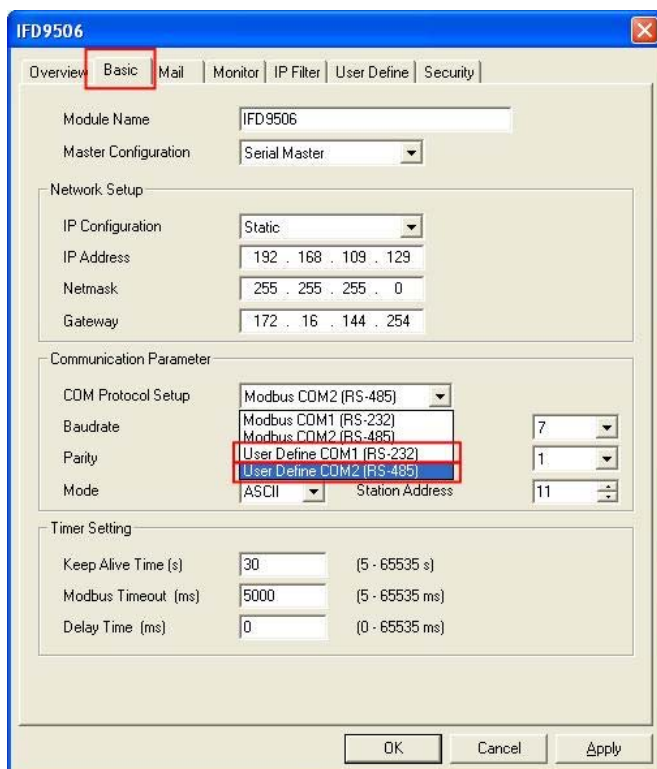
Note:

When using two IFD9506 modules as Master and Slave and its user define functions, the settings of the fixed length, start item and stop item have to be consistent. If not, the data will be filtered automatically.

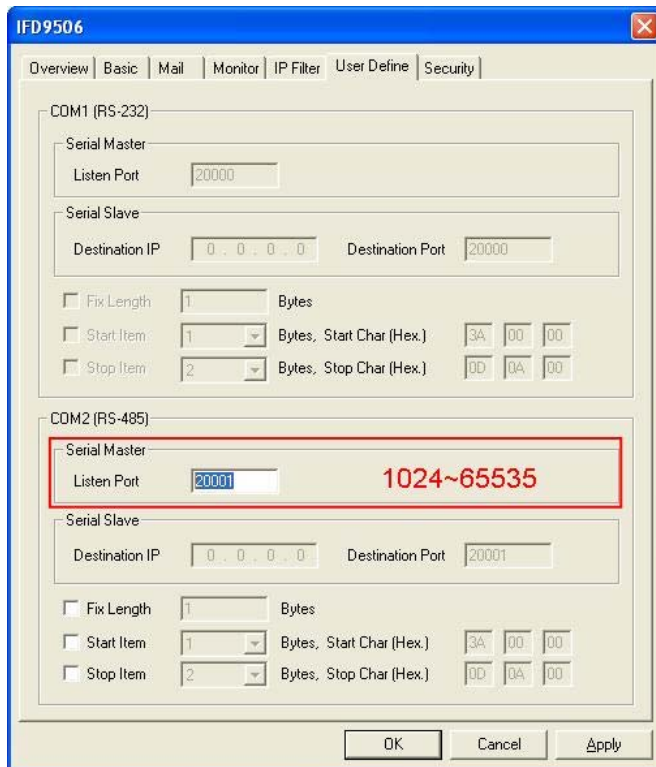
8.8 Virtual COM

Virtual COM converts the data transmitted to RS-232 to Ethernet.

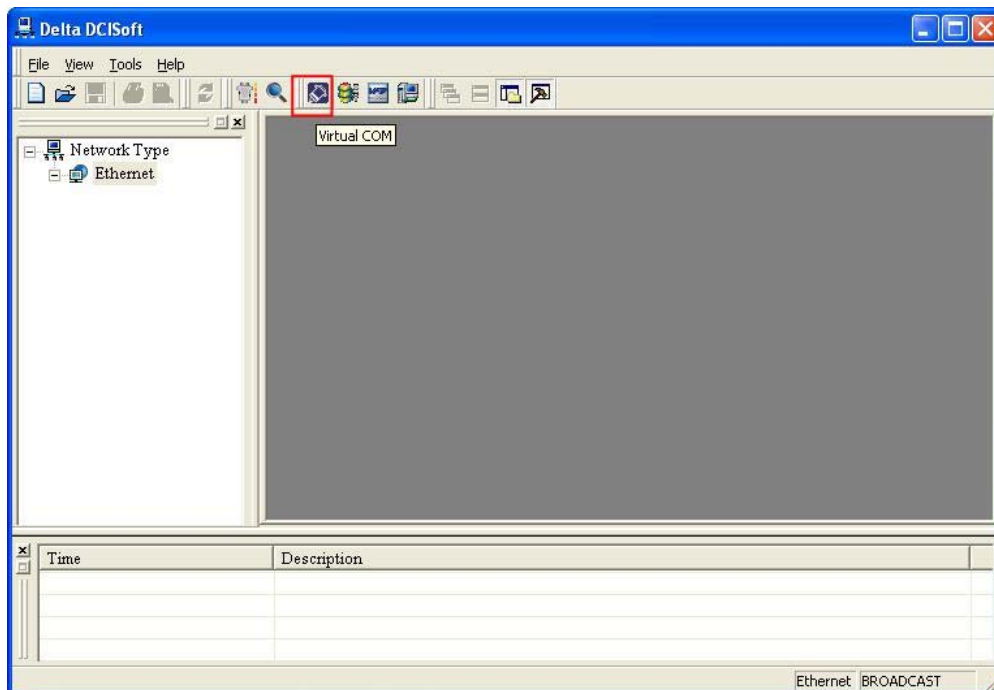
- Select "User Define COM".

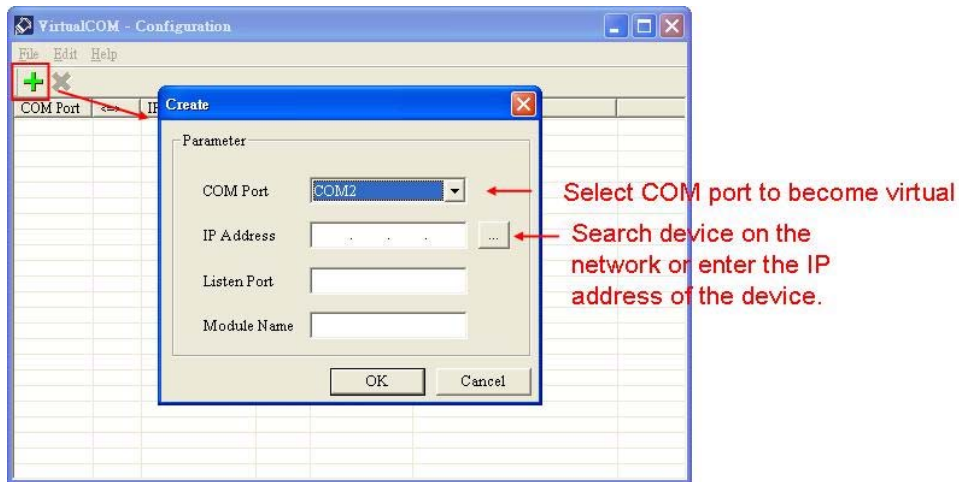


- Switch to "User Define" page and "Listen Port".

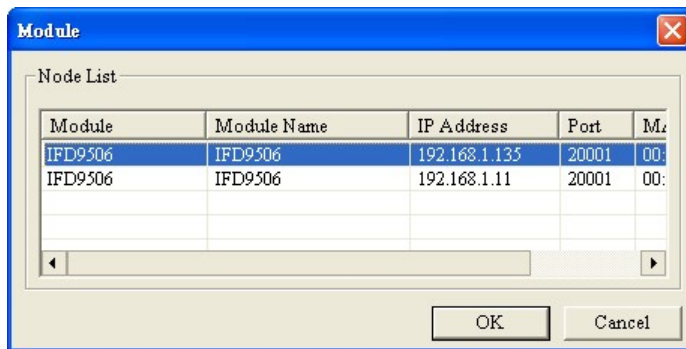


- Open Virtual COM setup page

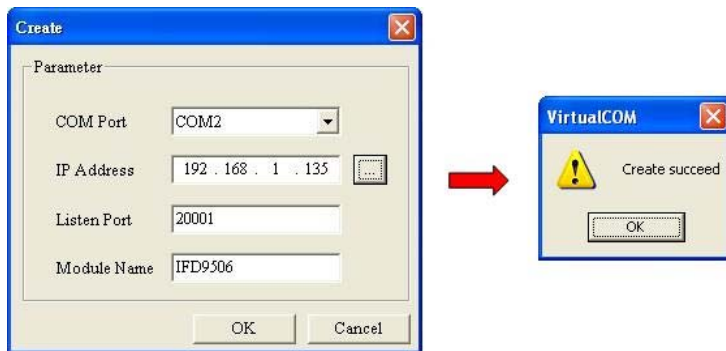




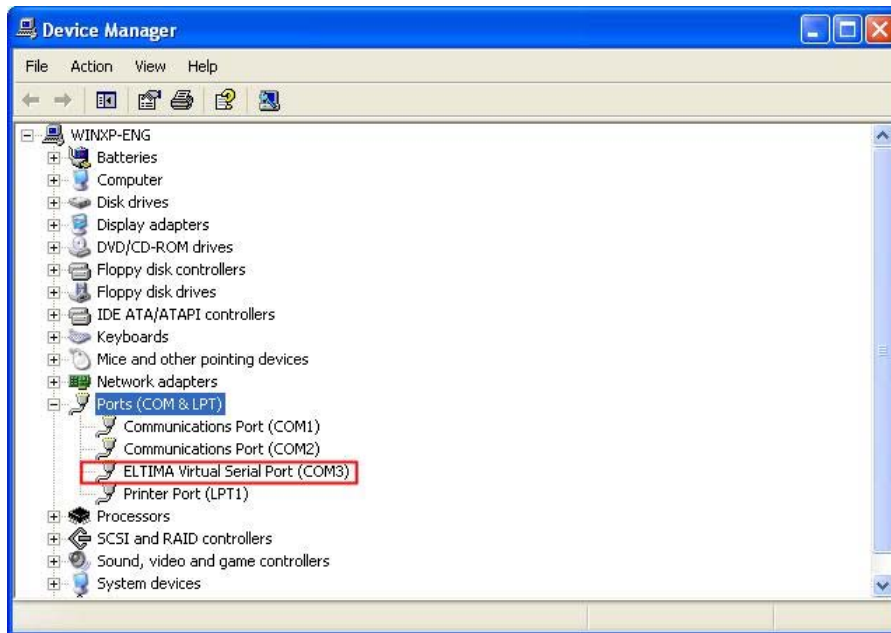
- Press “OK”, and you will see all the devices connected on the network.



- Select the module you need and press “OK”. Relevant information of the device will be imported automatically. Press “OK” to complete the setup.



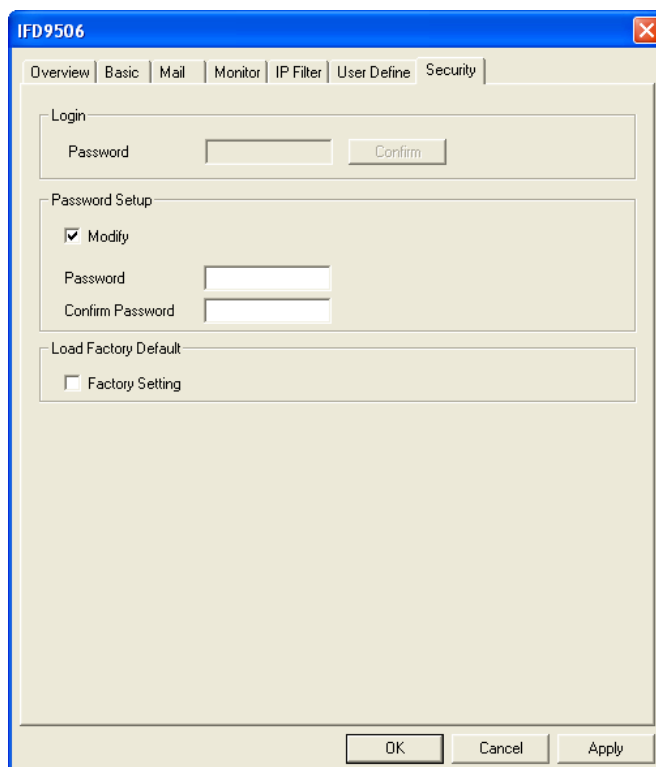
- Once the setup is successful, you can see the virtual COM you set in the Device Manager.



8.9 Security Settings

To prevent the set values in IFD9506 from being modified, you can set up passwords to lock the settings in IFD9506.

- Setting up password



1. Password setup:
Check the "Modify" box to set up the password.
2. Password:
Max. 4 characters.
3. Confirm password:
Enter the new password again.
4. See "10.1 Application Examples" for more details.

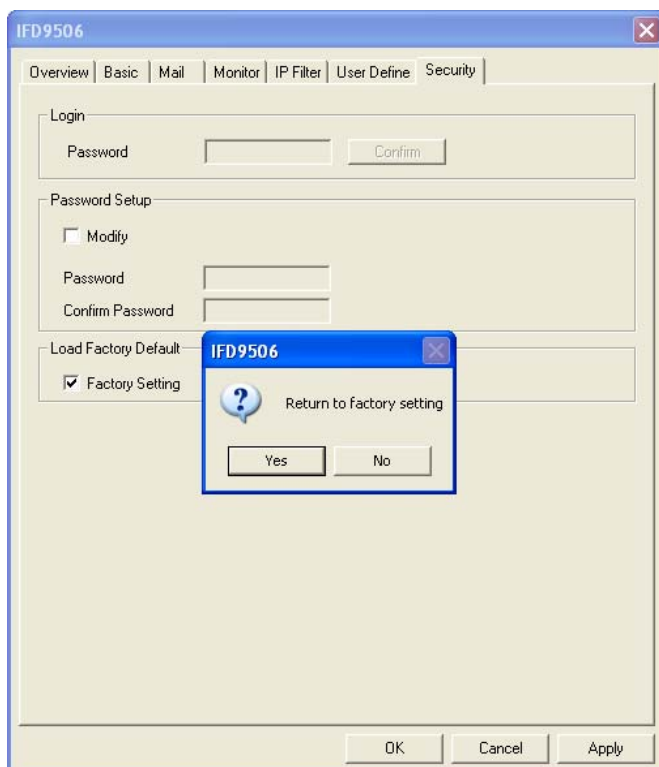
Note:

Once the password is locked, all the pages cannot be set up unless you unlock the password. However, if you set up IFD9506 by RS-232, you can return the setting to default one whether the password is locked or not. For example, if you have locked IFD9506 but forget the password, you have to return IFD9506 to default setting by RS-232, and all the settings will return to default ones.

8.10 Returning to Default Settings

If you need to clear all the settings after many modifications on the settings and return the settings to default ones, check the “Factory Setting” box.

- Returning to default settings



Check “Factory Setting” box and click on “Yes”.

Note:

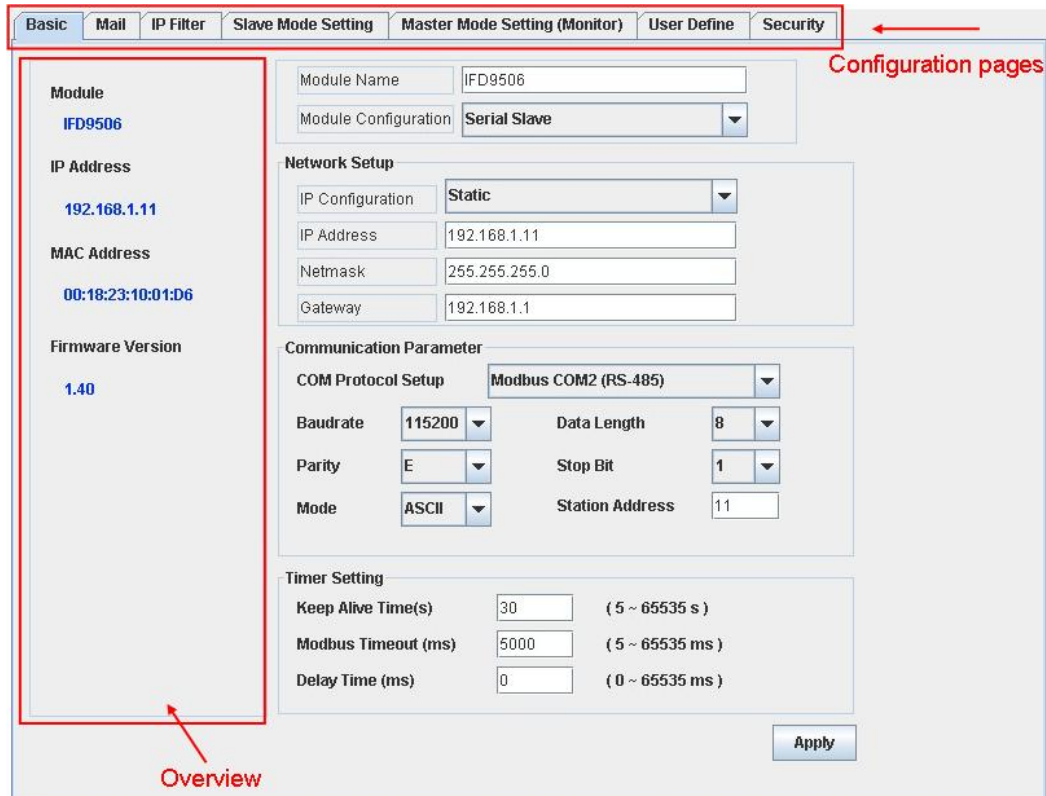
If you set up IFD9506 by RS-232, you can return to settings to default ones whether the password is locked or not. It will take approximately 10 seconds to return to default settings, so DO NOT switch off the power within the 10 seconds. Besides, you can also press “Reset” button for 2 seconds to return to default settings.

9 Webpage Settings

This section introduces how to set up IFD9506 through webpages and explains how to set up columns in each page. IFD9506 is set up by UDP port 20006. Please be aware of the relevant settings for the firewall.

9.1 Webpage Connection

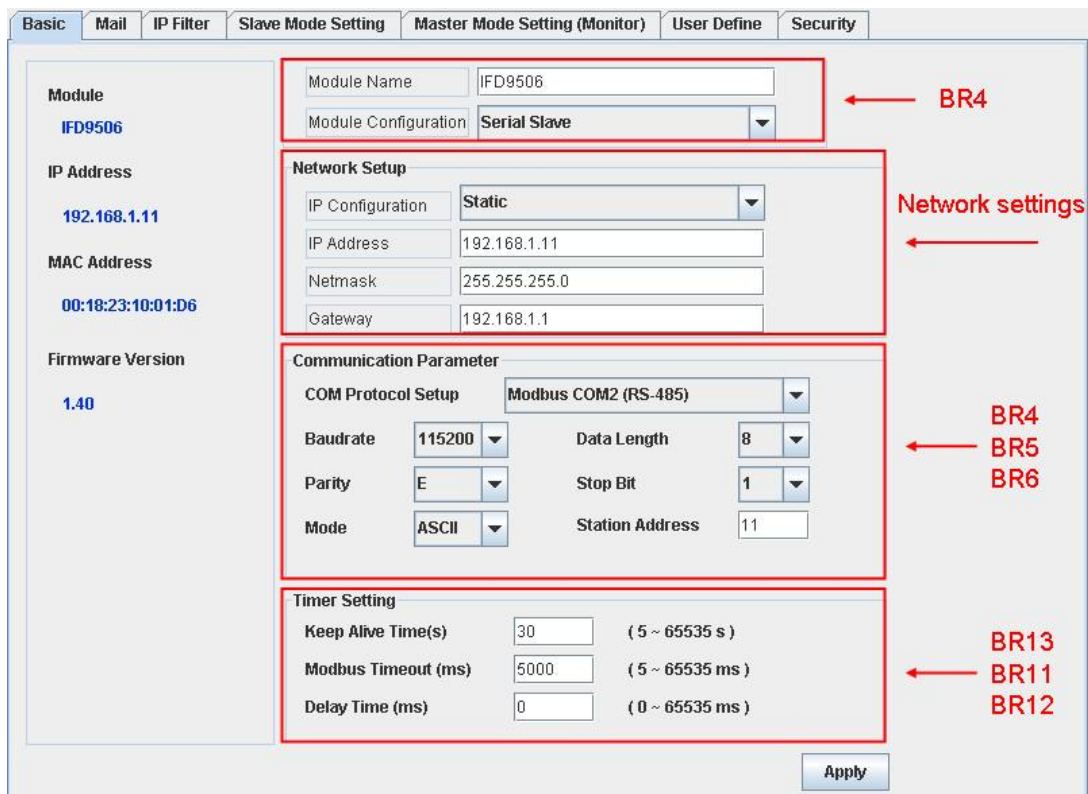
- Enable webpage function
 1. Open the webpage browser and enter the IP address of IFD9506 in the address column.
 2. See below for the items to be set up. The block on the left hand side shows the basis status of IFD9506.



9.2 Basic Settings

The basic settings include parameters as module name, network functions and serial communication. For network settings, please consult your Internet service provider. For other settings, please refer to BR#4 ~ BR#6 and BR#11 ~ BR#13.

- The basics



For how to set, see 8.2.

9.3 Setting up E-Mails

E-Mail is the abbreviation of electronic mail which transmits mails through the network. IFD9506 has E-Mail functions for the user to pre-save a segment of text messages, which can be a descriptive message or error message, into the subject of the E-Mail. When the E-Mail is triggered, IFD9506 will send the messages to the user by E-Mail.

■ E-Mail settings

The screenshot shows the 'Mail' configuration page for the IFD9506 module. The interface includes a sidebar with device information and a main configuration area with several sections:

- Mail Alarm Setup:** Three alarm entries (Alarm-1, Alarm-2, Alarm-3) with checkboxes to enable them and dropdown menus to set the trigger type (currently 'Falling edge').
- Mail Setup:** Fields for SMTP Server (192.168.1.255) and Mail From (Message@delta).
- E-mail Subject of Event:** A list of three subjects: 'Subject of Alarm', 'MAIL ALARM1', and 'MAIL ALARM2'.
- Recipient E-mail Address:** A table with columns for Alarm-1, Alarm-2, Alarm-3, and E-mail Address, with rows 1 through 5 for selecting recipients.

An 'Apply' button is located at the bottom right of the configuration area.

1. Mail Alarm:
There are 3 mail alarms available. Check the alarm to enable that alarm. Every alarm can be triggered by falling edge or rising edge.
2. For how to set up SMTP server, E-mail subject and recipients, see 8.4.

9.4 IP Filter

The IP filter is used for restricting the connection of the network in case some uncertain IP will cause errors. Only the IP set within a certain range can establish a connection. Other IPs will be rejected.

■ Setting up IP filter

No.	IP Address	Netmask
1	0.0.0.0	255.255.255.255
2	0.0.0.0	255.255.255.255
3	0.0.0.0	255.255.255.255
4	0.0.0.0	255.255.255.255
5	0.0.0.0	255.255.255.255
6	0.0.0.0	255.255.255.255
7	0.0.0.0	255.255.255.255
8	0.0.0.0	255.255.255.255

For how to set, see 8.6.

9.5 Security Settings

To prevent the set values in IFD9506 from being improperly modified in a well designed network environment, you can set up passwords to lock the settings in IFD9506.

■ How to set up passwords

1. Setting up password:

You can enter maximum 4 characters in the password column to set up the password. Leave the column blank to unlock the password protection.

2. Confirming password:

Enter the new password again.

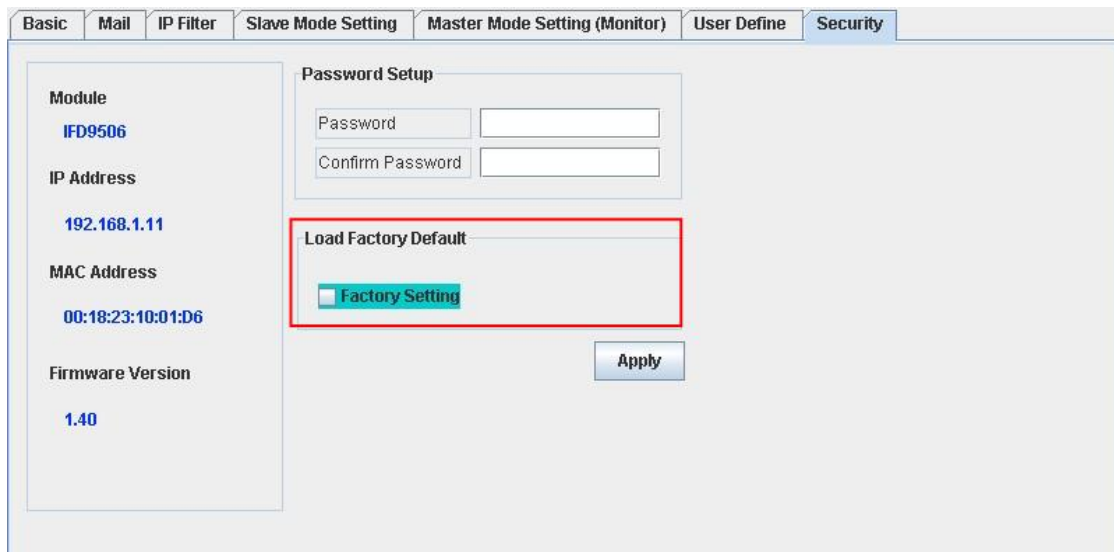
Note:

Once IFD9506 is locked by the password, all the pages can only be set up after the password is unlocked. However, if IFD9506 is set up through RS-232 COM port, you can return all settings to default settings no matter IFD9506 is locked by the password or not. For example, supposed your IFD9506 is locked but you forget the password, you can return all the settings to default settings through RS-232 COM port.

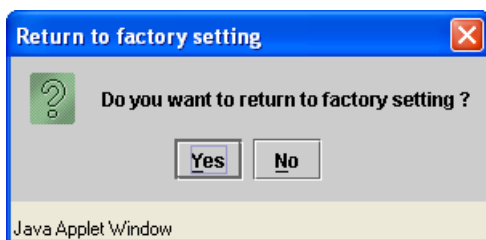
9.6 Returning to Default Settings

You can easily return all the settings to default ones on the page after you have modified those settings several times.

■ How to return to default settings



The screenshot shows the web interface for the IFD9506 module. The 'Security' tab is selected. On the left, a sidebar lists system information: Module (IFD9506), IP Address (192.168.1.11), MAC Address (00:18:23:10:01:D6), and Firmware Version (1.40). The main content area is titled 'Password Setup' and contains two input fields for 'Password' and 'Confirm Password'. Below these is a section titled 'Load Factory Default' which contains a checkbox labeled 'Factory Setting'. This section is highlighted with a red rectangle. An 'Apply' button is located at the bottom right of the main content area.



Check "Factory Setting" and press (Y), all the settings in IFD9506 will return to default settings.

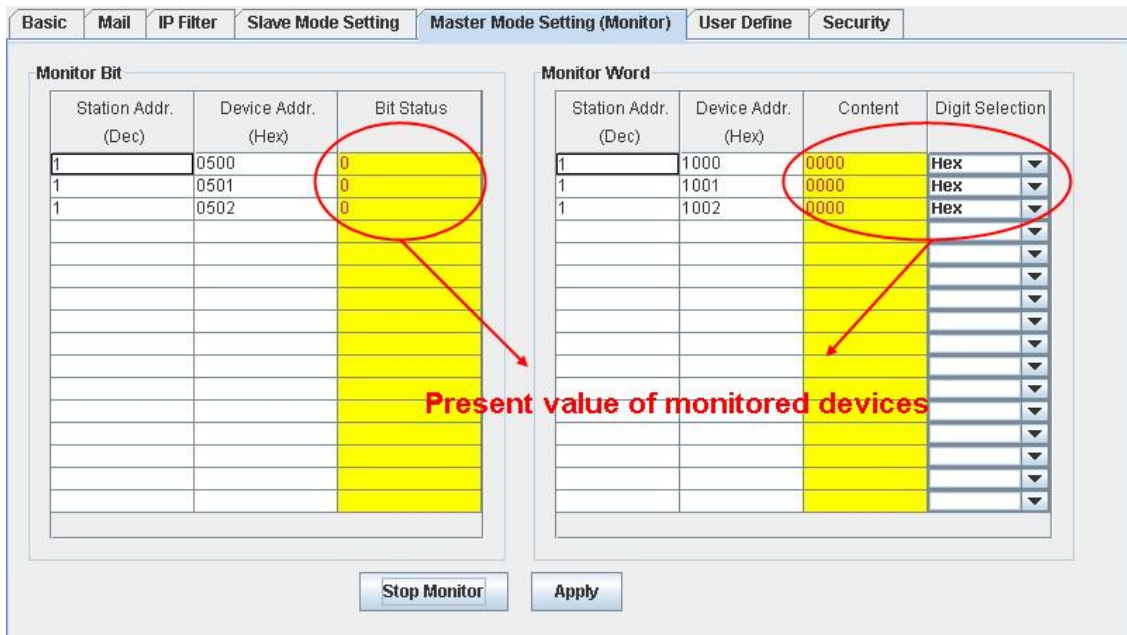
Note:

Returning all the settings in IFD9506 to default ones through RS-232 COM port can be done no matter IFD9506 is locked by the password or not. The entire process will take approximately 10 seconds, and please DO NOT switch off the power during this 10 seconds. To return to default settings, you can also press the "Reset" button for 2 seconds.

9.7 Monitor Table

By setting up IFD9506, you will be able to read data in specific addresses on the network and store the data temporarily in IFD9506. This realizes fast data storage and retrieval.

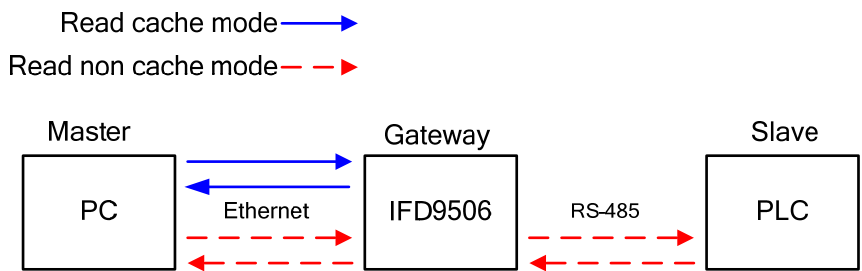
■ How to monitor master



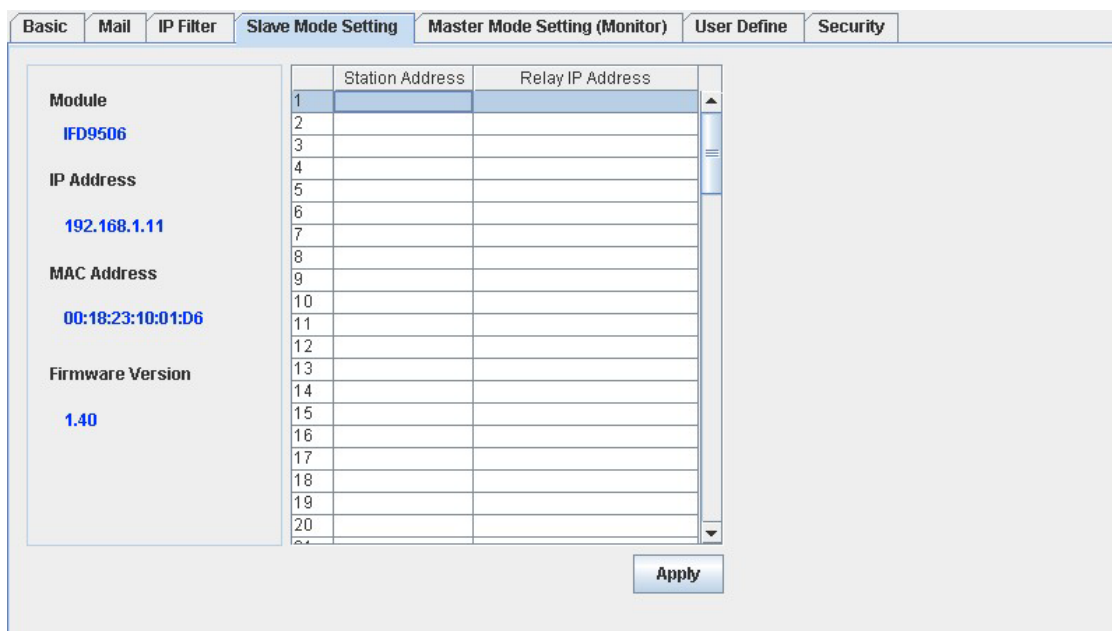
1. Monitor Bit:
For setting up the address of the bit-type serial slave, and for you to read the content in the designated slave.
2. Monitored content:
Displaying the value monitored in the address.
3. Monitored value status:
The value monitored can be displayed in hex or decimal forms.
4. Monitor Word:
For setting up the address of the word-type serial slave, and for you to read the content in the designated slave.

Note:

Cache mode normally enabled, and Max. data in 16 slaves can be monitored. When the cache mode is enabled, the data you would like to read will be sent back directly from the register in IFD9506.



■ How to monitor slave

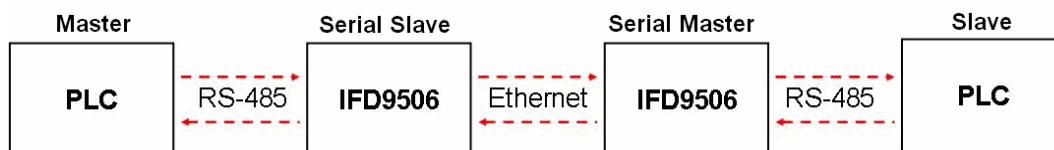


1. Serial slave mode (Used when the communication protocol is Modbus TCP):

The instruction sent from the master is received and transferred to the network. Please designate the station address and relay IP address.

Device address: Slave PLC address (The Gateway address and PLC address cannot be the same)

Relay IP address: Serial mater IP



9.8 User Define

You can define your own format for data to be transmitted. The items to be defined include the fixed length, start item and stop item.

- Select RS-232 or RS-485 to connect the device

The screenshot shows the configuration interface for the IFD9506 module. The 'Master Mode Setting (Monitor)' tab is selected. The 'Communication Parameter' section is highlighted with a red box, showing the 'COM Protocol Setup' dropdown menu open to 'Modbus COM2 (RS-485)'. Other settings include Module Name 'DVP', Module Configuration 'Serial Master', IP Configuration 'Static', IP Address '192.168.1.10', Netmask '255.255.255.0', Gateway '0.0.0.0', Baudrate '115200', Parity 'E', and Mode 'ASCII'. The 'Timer Setting' section includes Keep Alive Time (30s), Modbus Timeout (5000ms), and Delay Time (0ms).

- Switch to “User Define” page to set up the “Fix Length”, “Start Item” and “Stop Item”.

The screenshot shows the 'User Define' page for the IFD9506 module. The 'COM2 (RS-485)' section is highlighted with a red box, showing the 'Fix Length' checkbox checked and set to 3 bytes. A red arrow points to the 'Fix Length' value with the text '1 ~ 256'. Other settings include Listen Port '20001', Dest. IP '172.16.1.1', and Dest. Port '20001'. The 'Start Item' and 'Stop Item' checkboxes are also checked and set to 1 and 3 respectively.

- Listen Port/Destination Port:
Range: 1024 ~ 65535.
- Fix Length:
When this is set, IFD9506 will transmit data following the fixed length.

6. Start Item:

The start item of data. Range: 1 ~ 3

7. Stop Item:

The stop item of data. Range: 1 ~ 3

When the start item and stop item are set, IFD9506 will transmit data following the start item and stop item. If the transmission time exceeds the Modbus time-out, IFD9506 will dispose of incomplete data.

Note:

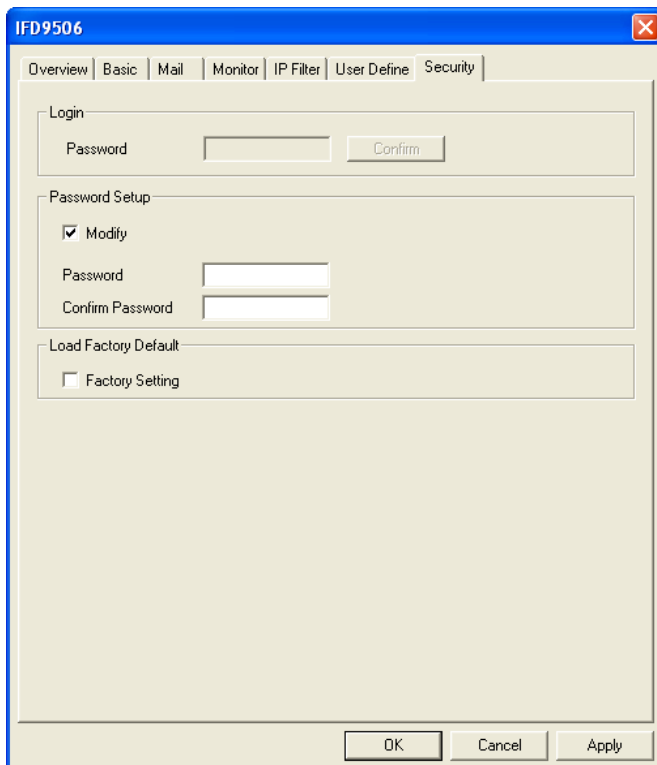
When using two IFD9506 modules as Mater and Slave and its user define functions, the settings of the fixed length, start item and stop item have to be consistent. If not, the data will be filtered automatically.

10 Application Examples – DCISoft

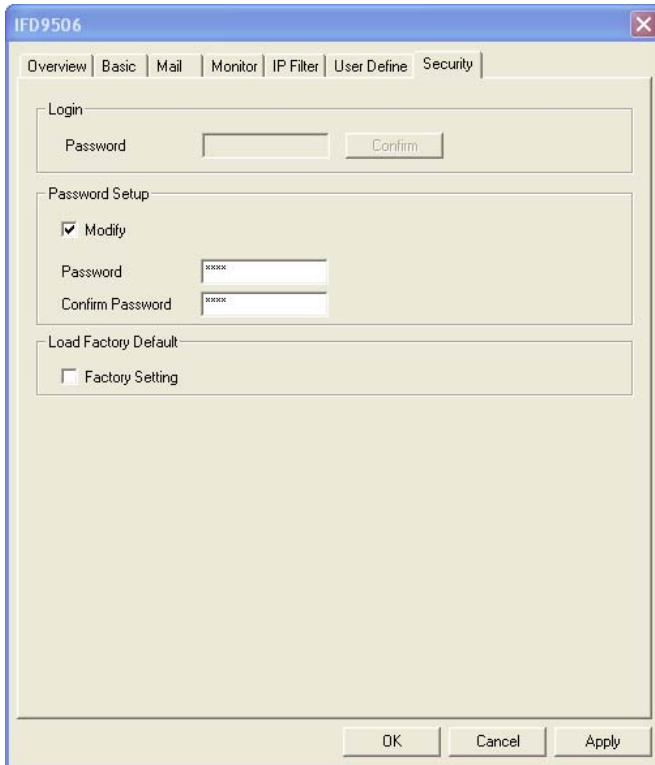
10.1 Setting up & Unlocking Password

Application	Setting up password by IFD9506 configuration
Steps	(1) Set up password in IFD9506. (2) Unlock IFD9506.

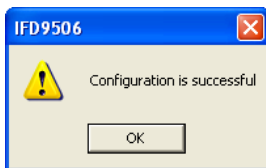
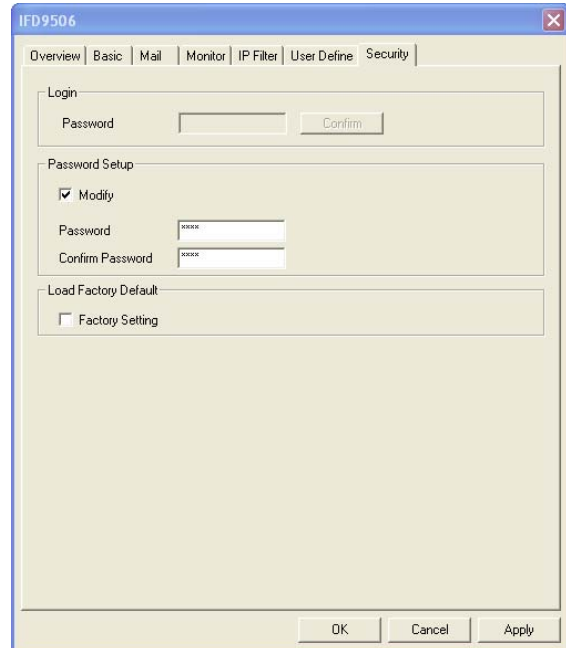
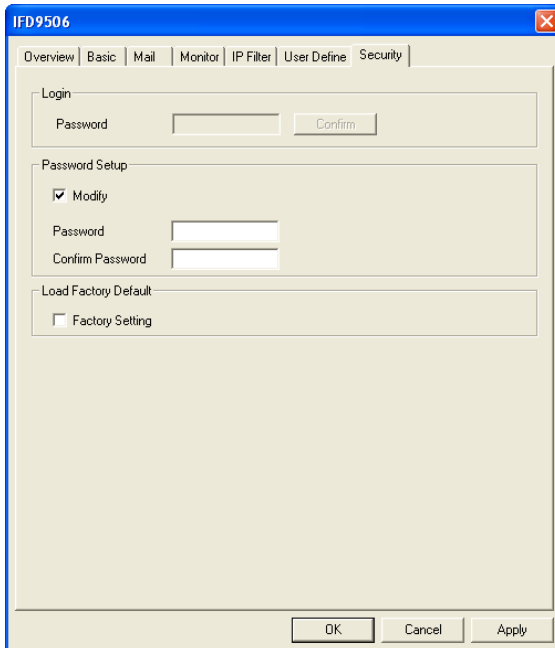
1. See 8.1 for the connection and how to set up the communication.
2. Open the setup page and switch to “Security” page.



3. Check “Modify” and enter “aabb” in “Password” and “Confirm Password” columns. Click on “OK” to save the password.



4. Open the setup page again, and IFD9506 is now locked by the password. You cannot open any of the settings now. To unlock the password, check “Unlock” and enter your original password.



10.2 Password Loss (Returning to Default Settings by RS-232)

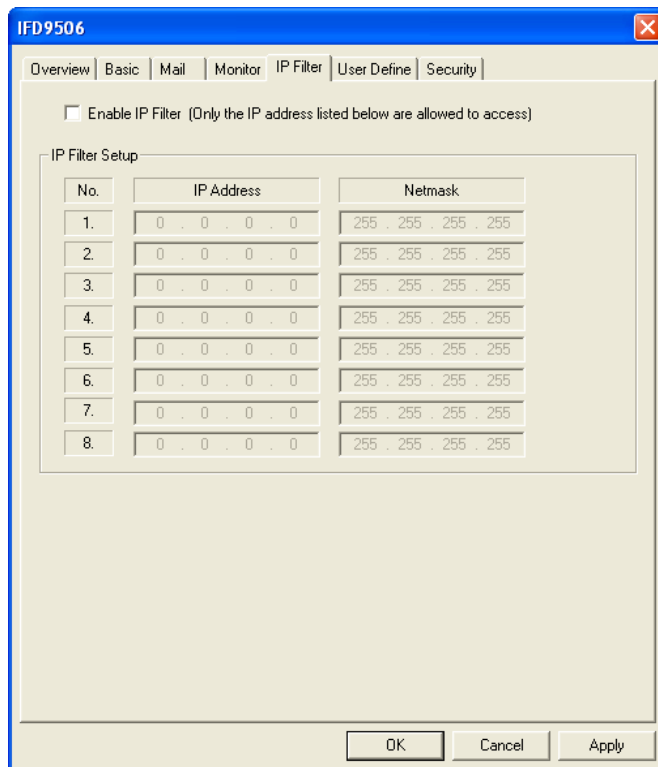
Application	Returning to default settings by RS-232.
Steps	(1) Set up password in IFD9506. (2) Supposed the password is forgotten, return to default settings through RS-232.

1. Use DVPACAB2A30 cable to connect the PC and IFD9506. Open the setup page.
2. Check "Factory Setting" box and the warning dialog box will appear. Click on "Yes" to return to default settings (in approx. 5 ~ 10 seconds), and the password will be cleared as well.

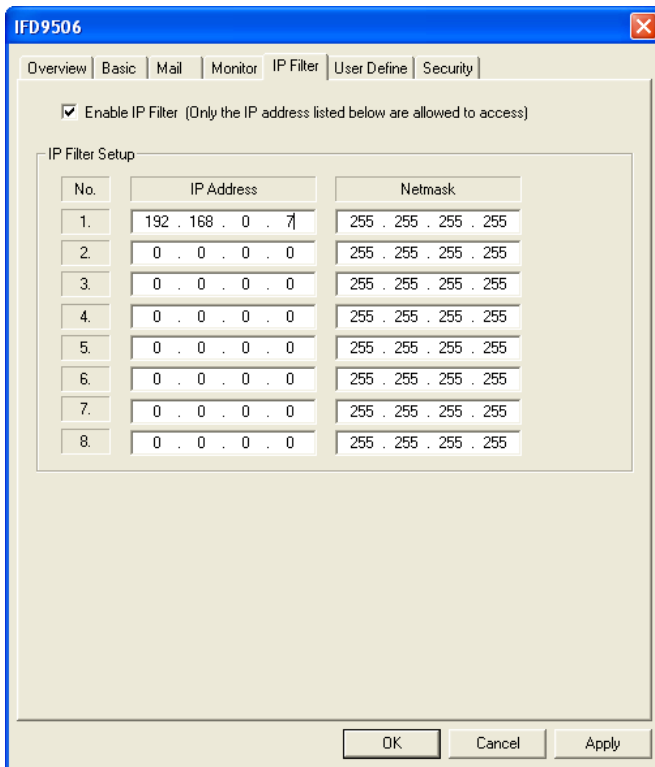
10.3 IP Filter Protection

Application	Setting up IP filter protection. Only connections to 192.168.0.7 and 172.16.0.1 ~ 172.16.0.255 are allowed.
Steps	<ol style="list-style-type: none"> (1) Check "Enable IP Filter" box. (2) Set up IP address to "192.168.0.7" and netmask to "255.255.255.255". (3) Set up IP address to "172.16.0.1" and netmask to "255.255.255.0".

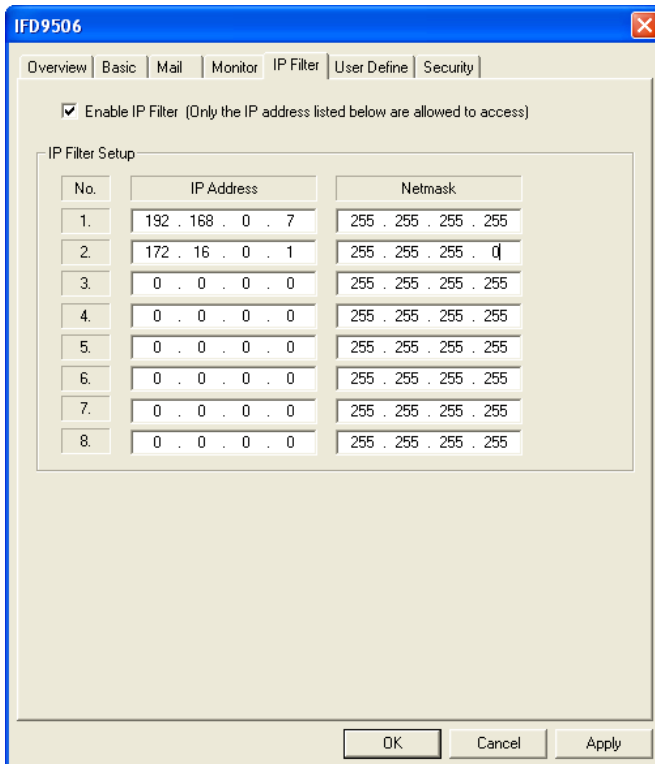
1. See 8.1 for the connection and how to set up the communication.
2. Open the setup page and switch to "IP Filter" page.



3. Check "Enable IP Filter" box. Enter "192.168.0.7" into No. 1 IP and "255.255.255.255" in all "Netmask" columns.



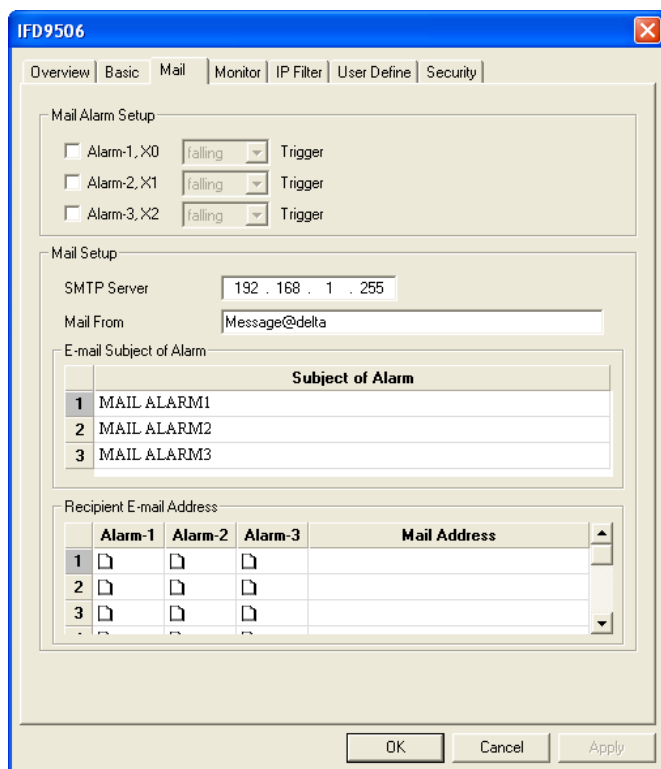
4. Enter “172.16.0.1” in No. 2 IP and “255.255.255.0” in No. 2 Netmask column. Click on “OK” to complete the setting. Only the equipment within the UP range can be connected.



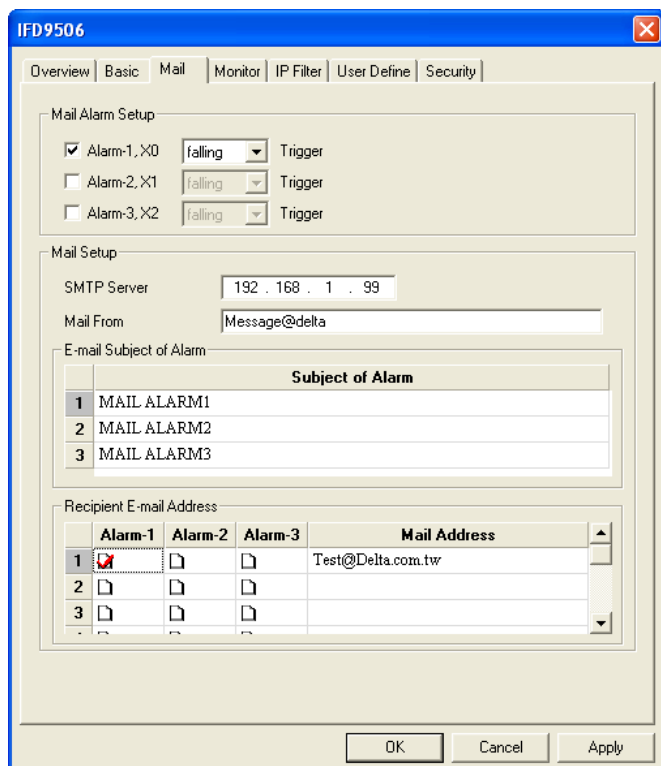
10.4 Application of E-Mail

Application	Sending E-Mail to notify the administrator when Alarm 1 is triggered.
Steps	<ol style="list-style-type: none"> (1) Check “Alarm 1” to enable it. (2) Set the IP of SMTP server to “192.168.1.99” and “Mail From” to “Message@Delta” (3) Set the E-mail Subject of Event to “MAIL ALARM”. (4) Set the E-mail address of administrator to <u>test@sample.com</u>.

1. See 8.1 for the connection and how to set up the communication.
2. Open the setup page and switch to “Mail” page.



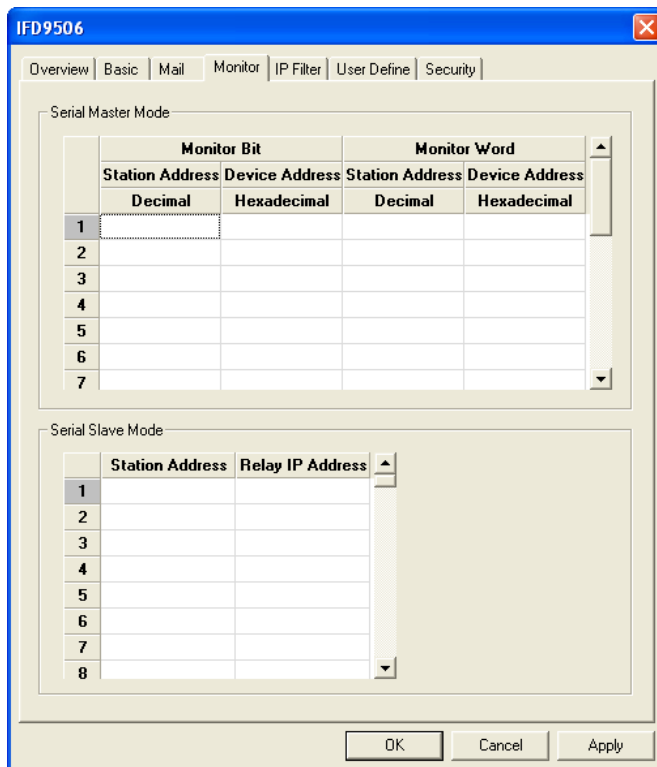
3. Setting up “Mail” page and check “Mail Alarm Setup”.
Enter SMTP server address, “Mail From” column, “Subject of Event” and “Recipient E-mail Address”. For example, when Alarm 1 is triggered, the mail will be sent to test@Delta.com. Trigger Alarm 1 by “low”. Enter 192.168.1.99 into “SMTP Server” column and Mail From Message@Delta. Enter “MAIL EVENT” as the subject and recipient e-mail address as test@delta.com.tw. Check “Alarm 1” and press “OK” to complete the settings.



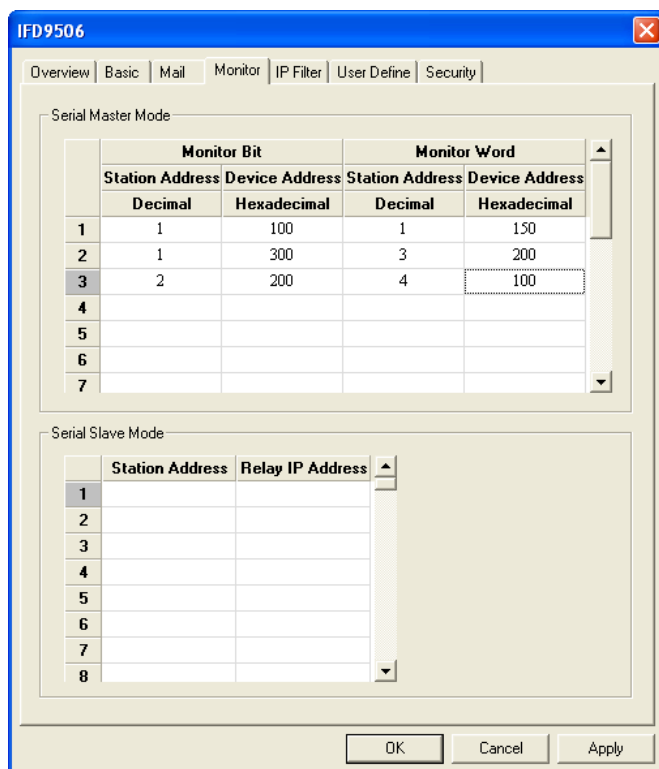
10.5 Monitoring Mode

Application	Writing the address of the device to be monitored into the monitor table.
Steps	<ol style="list-style-type: none"> (1) Use monitor bit and monitor word functions. (2) Monitor bit data in station address 1, H100 and H300, and word data in station address 1 H150. (3) Monitor bit data in station address 2, H200. (4) Monitor word data in station address 3, H200. (5) Monitor word data in station address 4, H100. (6) Monitor bit quantity: 3; monitor word quantity: 3

1. See 8.1 for how to set up communication.
2. Open IFD9506 Configuration page and switch to “Monitor” page.



3. The settings:



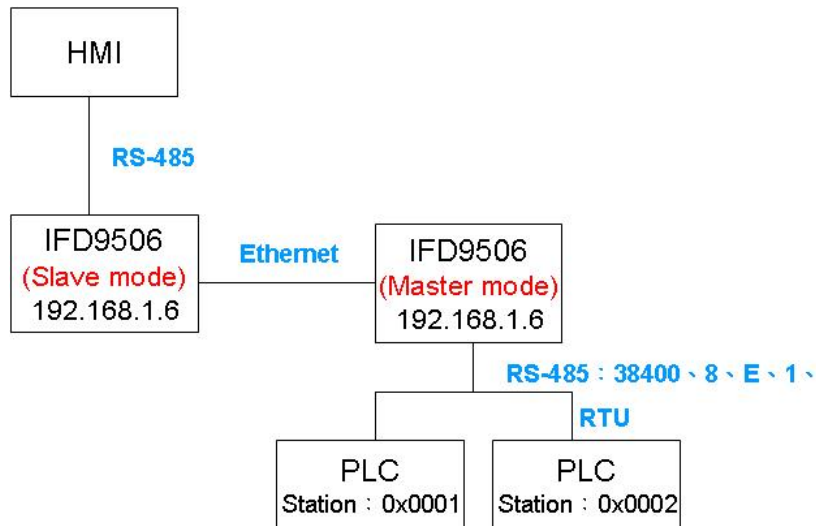
Note:

When the cache mode is enabled, all the read data will be read from IFD9506. In this way, the read speed can be enhanced.

10.6 Application of Modbus Slave

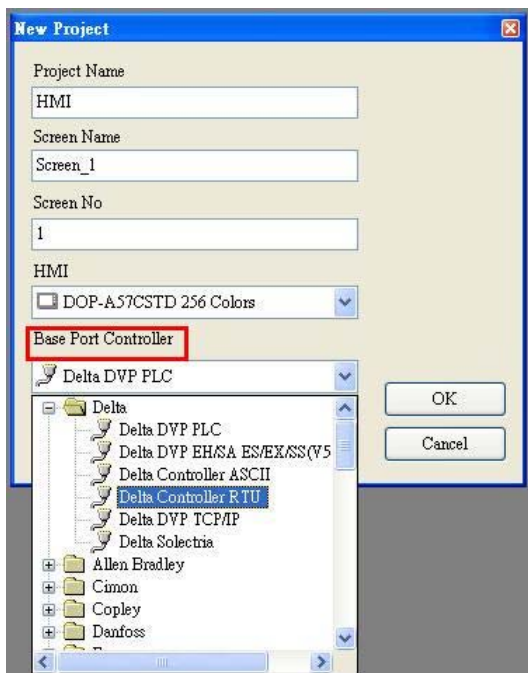
Application	Giving Modbus command from HMI to remote device.
Steps	<ol style="list-style-type: none"> (1) HMI sends out the instruction. (2) Set the IP of slave IFD9506 to "192.168.1.6", station address to "7" and communication format to "38400, 8, E, 1, RTU". (3) In the IFD9506 serial slave mode table, set the device address to "1" and "3", the two relay IPs to "192.168.1.5". (4) Set the IP of master of IFD9506 to "192.168.1.5", station address to "8" and communication format to "38400, 8, E, 1, RTU". (5) HMI master and IFD9506 slave transmit data through RS-485. (6) IFD9506 slave and IFD9506 master transmit data through Ethernet. (7) The RS-485 terminal on IFD9506 master is connected to two devices, which are PLC at station address 0x0001 and PLC at station address 0x0003. Assume the communication format is "38400, 8, E, 1, RTU".

1. The wiring:

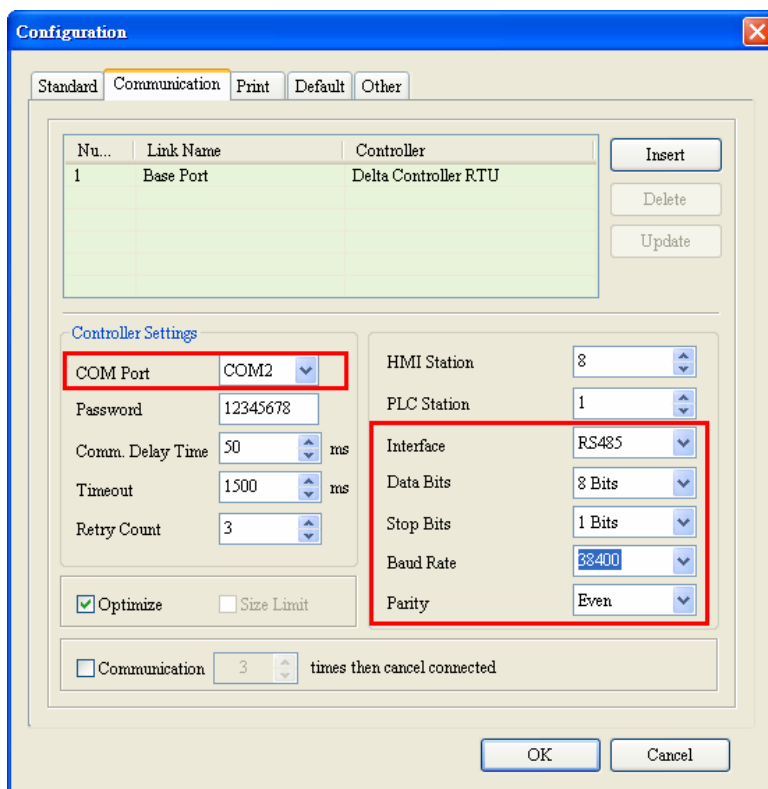


2. Setting up HMI editing software, Screen Editor:

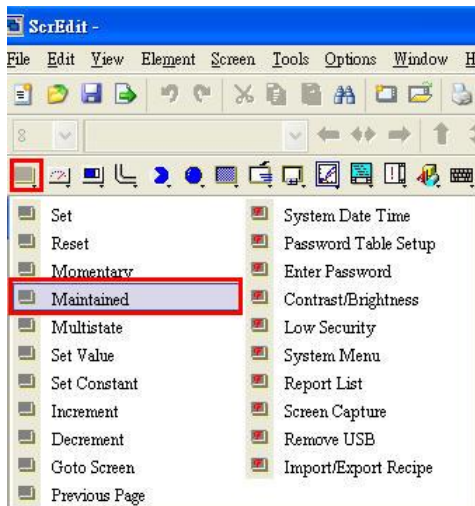
Step 1: Open Screen Editor, "File" → "New". In the "Base Port Controller" column, select "Delta Controller RTU".



Step 2: "Option" → "Configuration". Set up the communication format in "Communication" page. As below, set it to RS-485 communication mode.

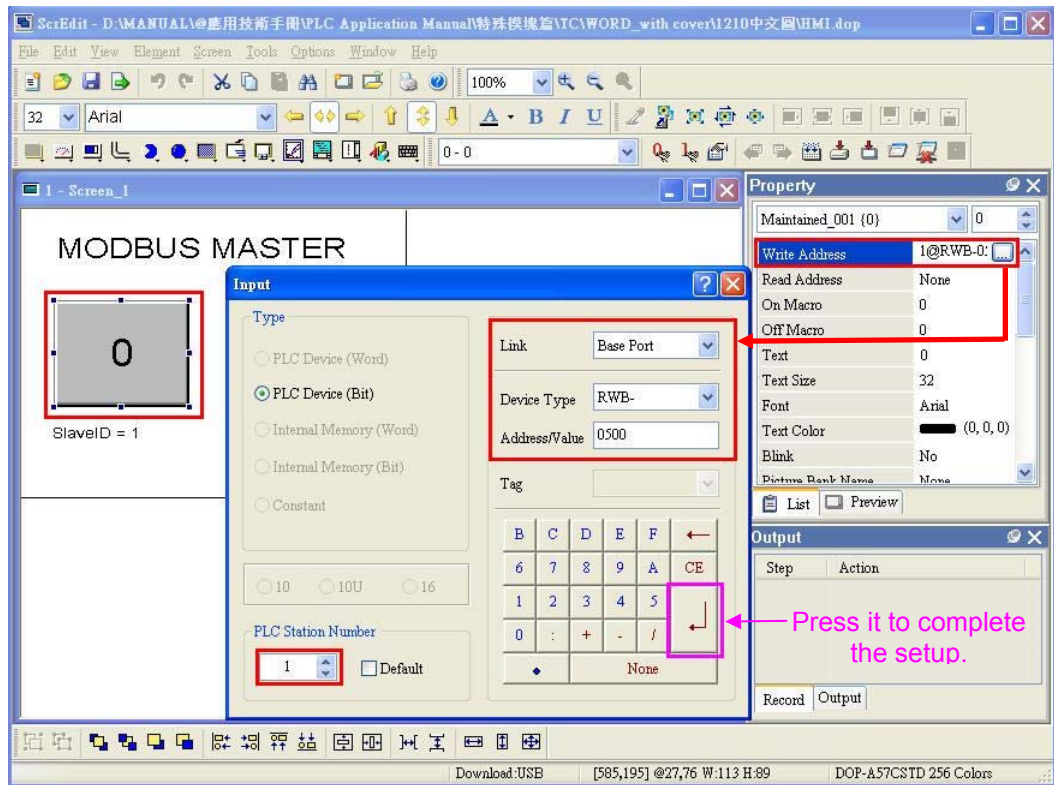


Step 3: If you want to control the On/Off of Y0 (Y0 address: 0500) of PLC at station address 0x0001 and On/Off of Y0 (Y0 address: 0500) of PLC at station address 0x0003, select “Maintained” button and create the button on the screen.

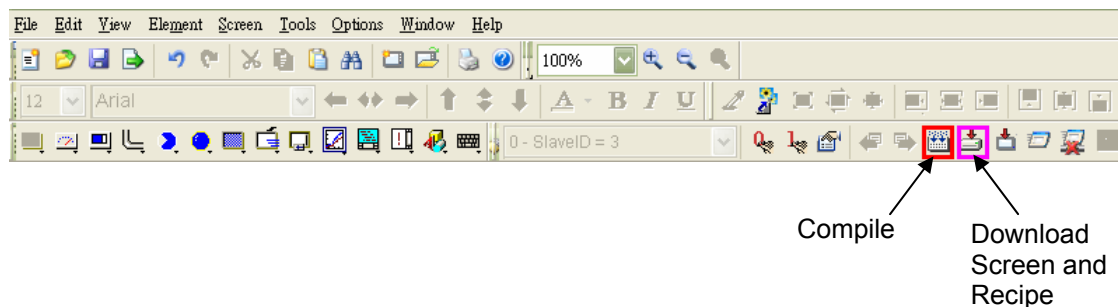


Step 4: Create two “Maintained” buttons.

- (a) Click on the **button on the left hand side** first. You will see the information of the button in the “Property” window on the right hand side of the screen. Click on “Write Address” to set up the address of Y0 (0500) and the address of the PLC (1). Select “Base Port” in “Link” column and “RWB-” in “Device Type” column.
- (b) Next, set up the **button on the right hand side**. Follow (a) step and modify the address of the PLC as “3”.



Step 5: “Compile” first and “Download Screen and Recipe” to complete the setups in the HMI.

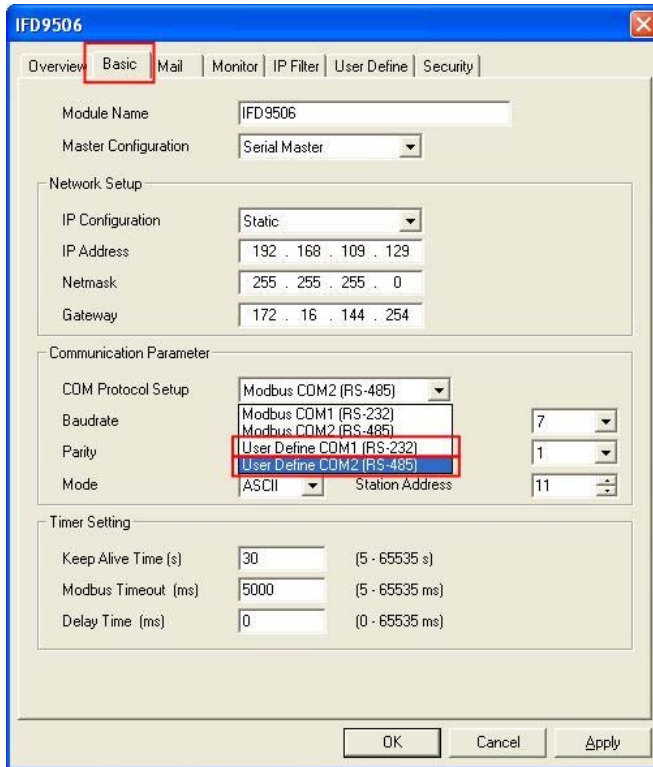


10.7 Application of Virtual COM Port

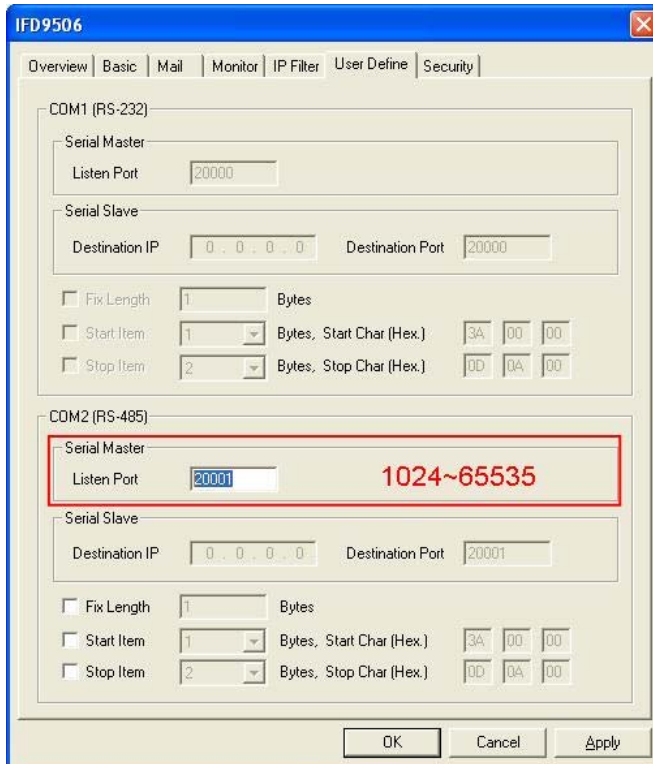
Application	Through the virtual COM port, IFD9506 is able to transmit the data sent to RS-232 to the Ethernet by connecting to the software supporting serial ports, e.g. Delta’s WPLSoft, VFDSOft and ASDA-Soft. See the example below for how to connect IFD9506 to VFD-E AC motor drive through the virtual COM port by VFDSOft.
Steps	<ol style="list-style-type: none"> (1) Select “User Define” protocol and set the parameters in the serial master and serial slave to the ones consistent with those in VFD-E. (2) Open Delta VFDSOft, set up the communication format (COM Setup) and establish the connection.

1. Setting up Virtual COM Port

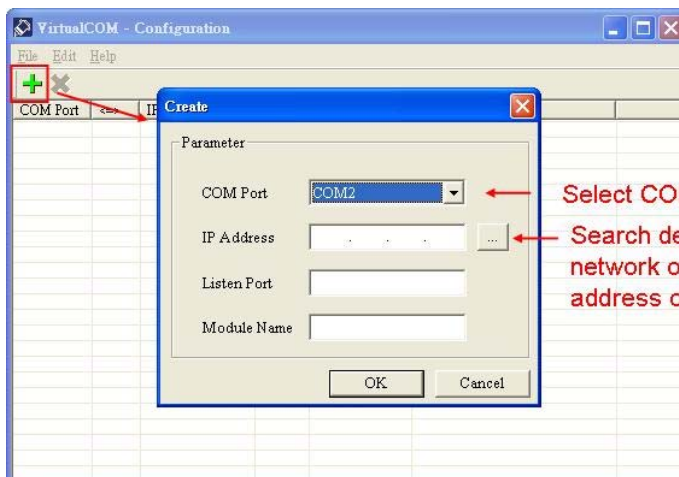
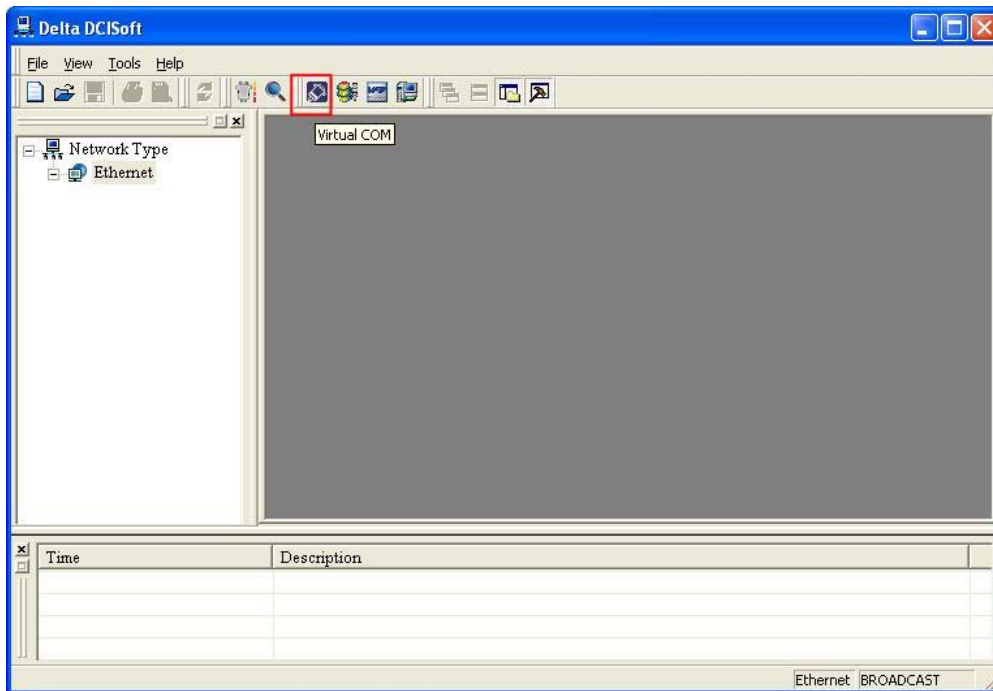
- For the COM setting, select “User Define” and set the communication parameters to the ones consistent with those in VFD-E.



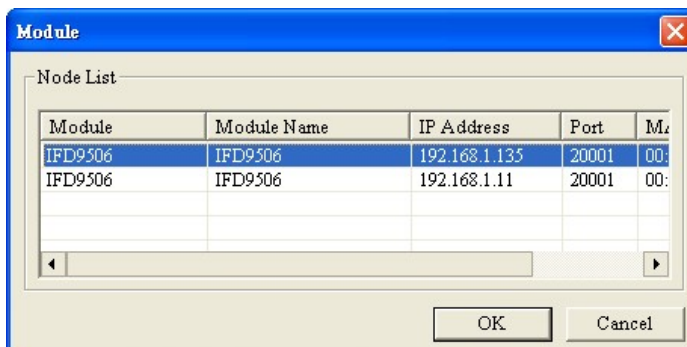
- Switch to “User Define” page and select “Listen Port”.



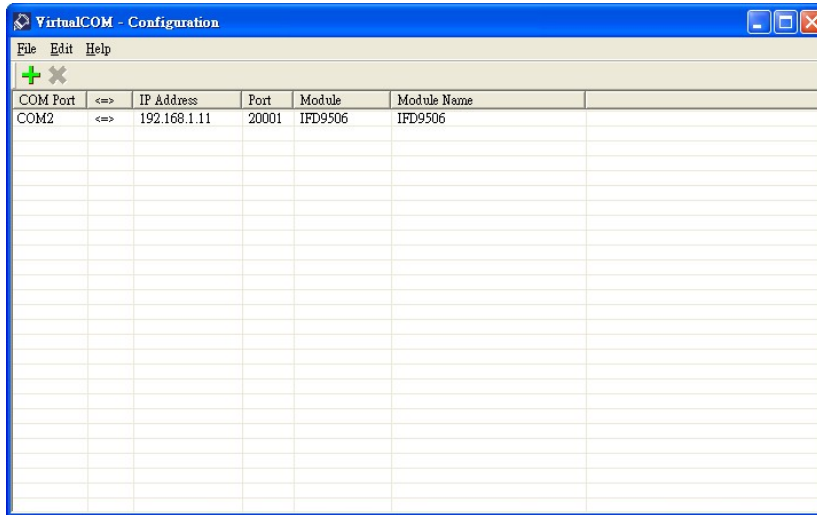
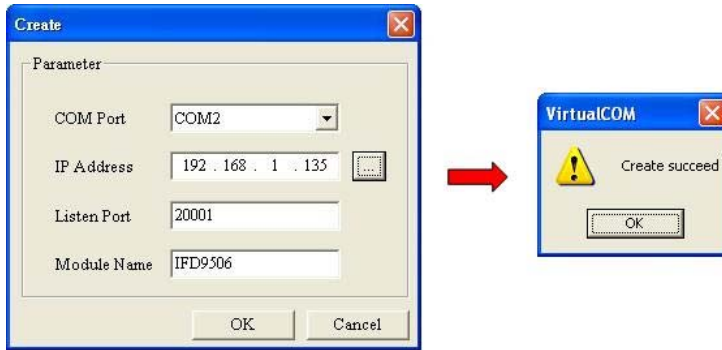
- Open Virtual COM setup page



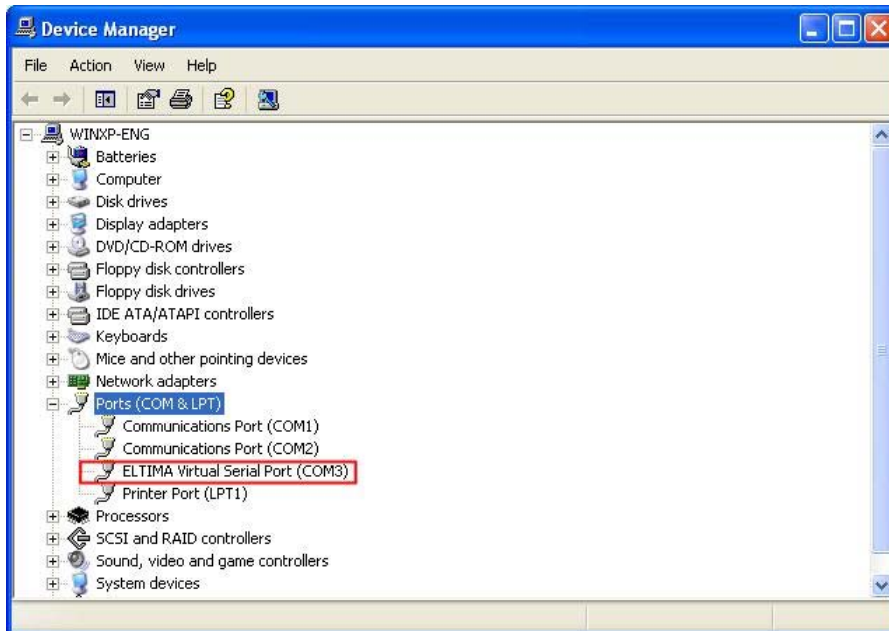
- Press “OK”, and you will see all the devices connected on the network.



- Select the module you need and press “OK”. Relevant information of the device will be imported automatically. Press “OK” to complete the setup.

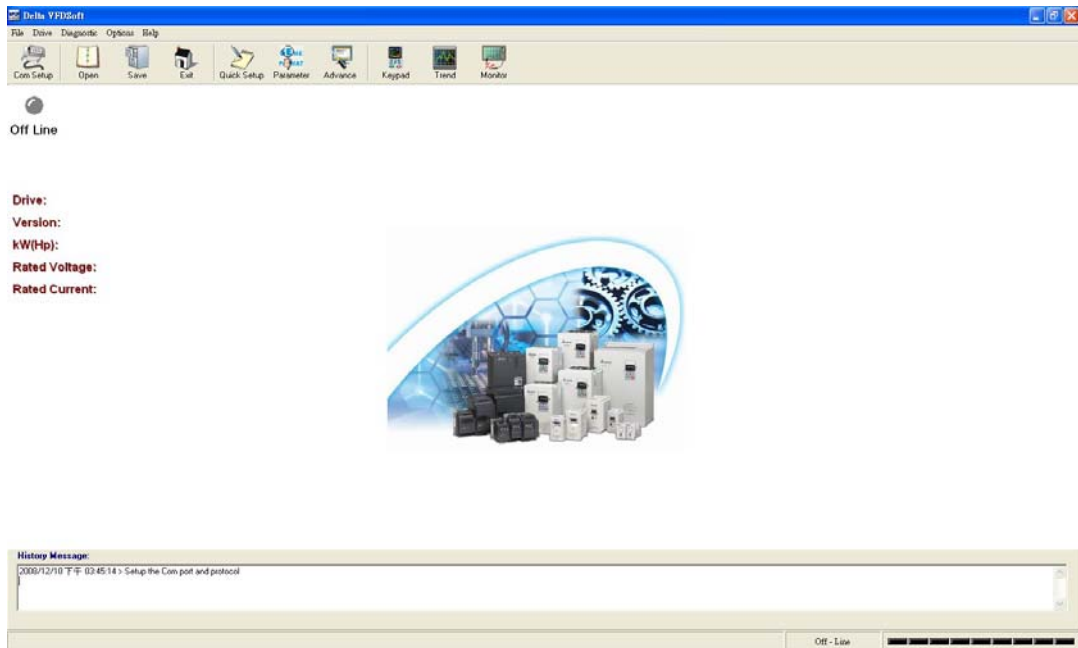


- Once the setup is successful, you can see the virtual COM you set in the Device Manger.



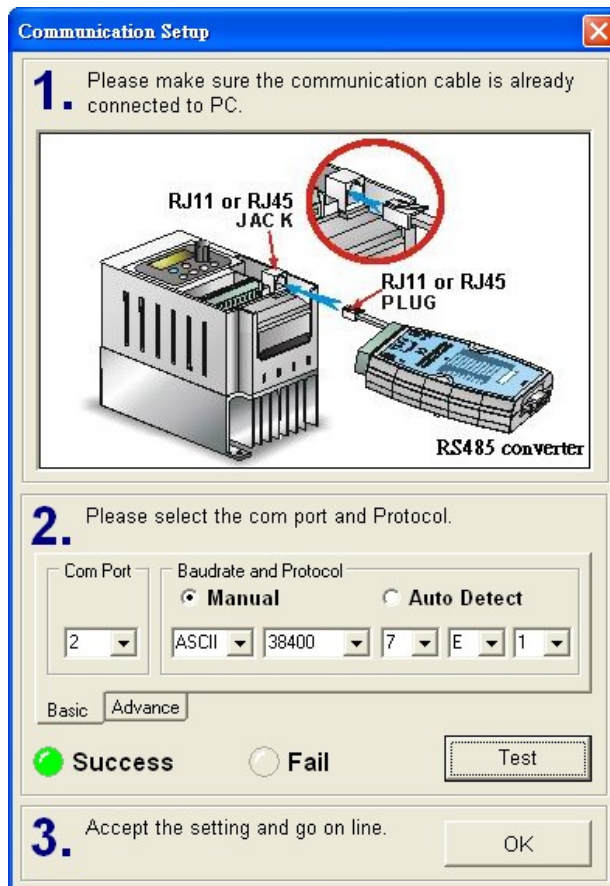
2. Using Virtual COM in Delta VFDSOft

- Open Delta VFDSOft.

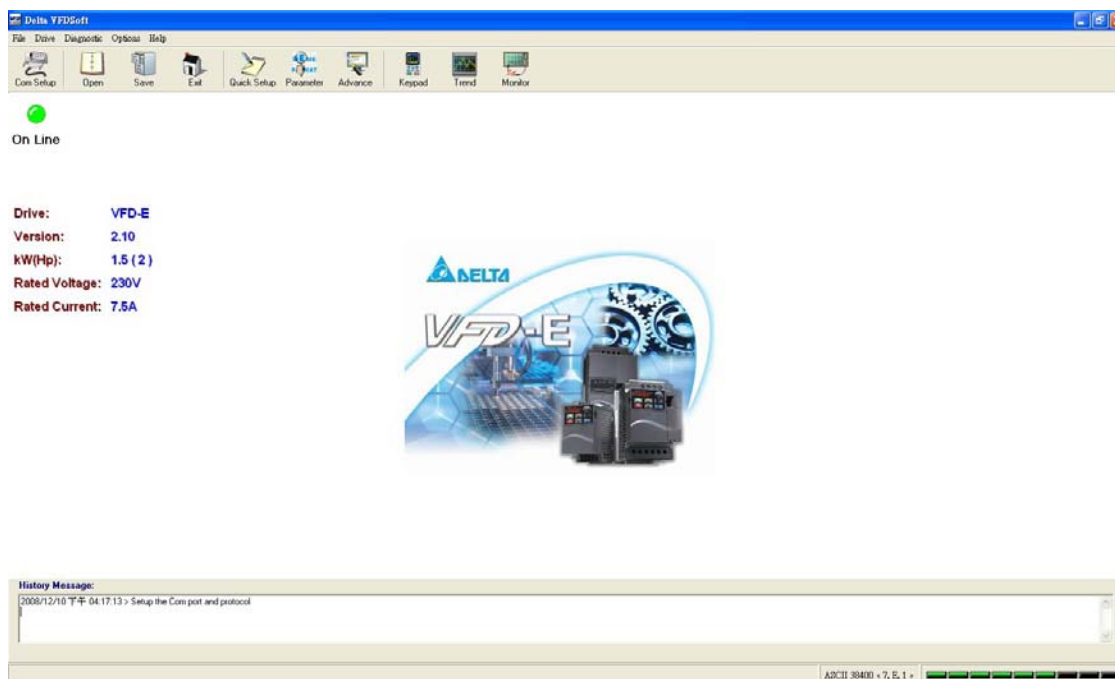


- Set up communication format (COM Setup)

Enter the virtual COM (COM2) set in the previous steps to “Com Port” column. Next, enter the communication format of VFD-E (38400, 7, E, 1) and press “Test” button. Once the “Success” light is ON, the communication test is regarded successful.



- Press “OK”, and IFD9506 will be able to communicate with VFD-E by VFDSoft.



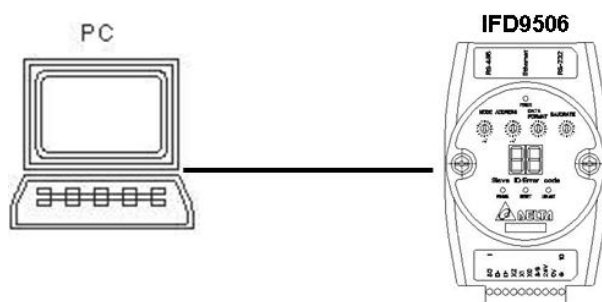
11 Application Example – WPLSoft

You can set up IFD9506 by WPLSoft software. See the examples below for how to set up the communication connection. Columns in every setup page in WPLSoft are the same as those in DCISoft. Please refer to section 10 for relevant settings.

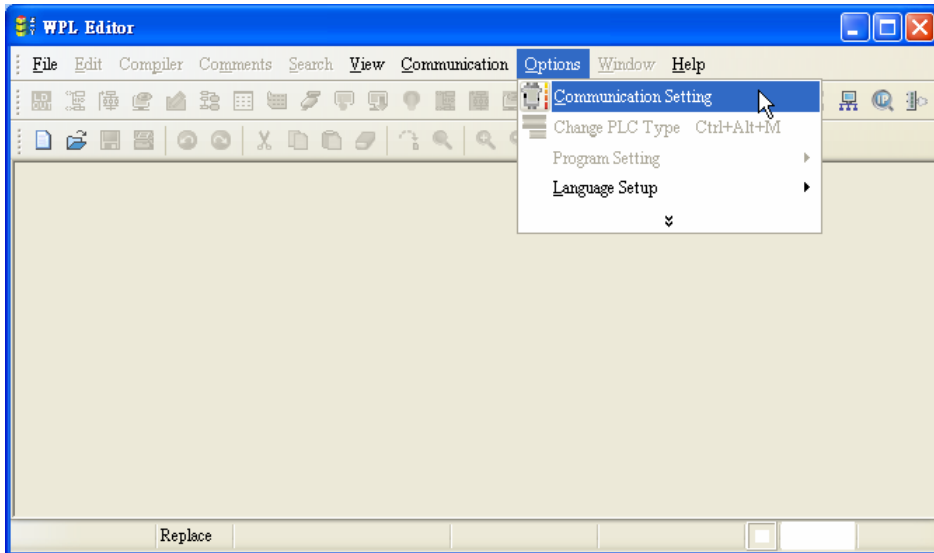
11.1 Setting up IP through WPLSoft

Application	Setting up network parameters of IFD9506 directly from the PC.
Steps	<ol style="list-style-type: none"> (1) The IP of the PLC executing WPLSoft is "192.168.1.2". (2) Subnet mask: 255.255.255.0; Gateway: 192.168.1.254 (3) Modify the network parameter of IFD9506. (4) Connecting the PC and IFD9506 by RJ-45 network cable. <p>Note: Both PC and IFD9506 cannot adopt DHCP but static IP.</p>

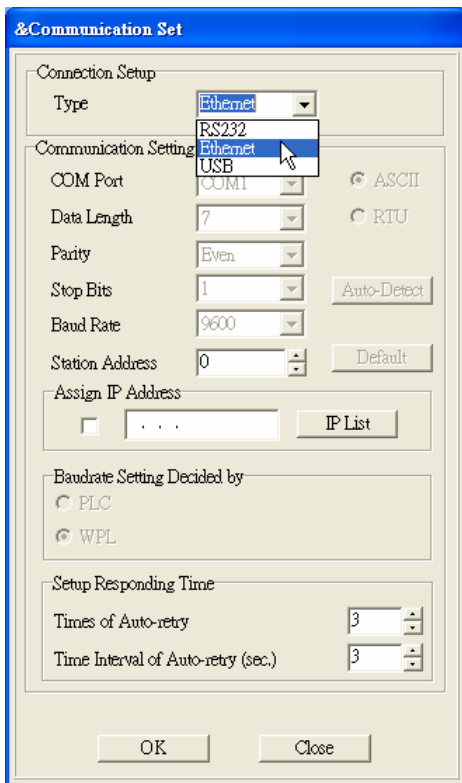
1. The connections:



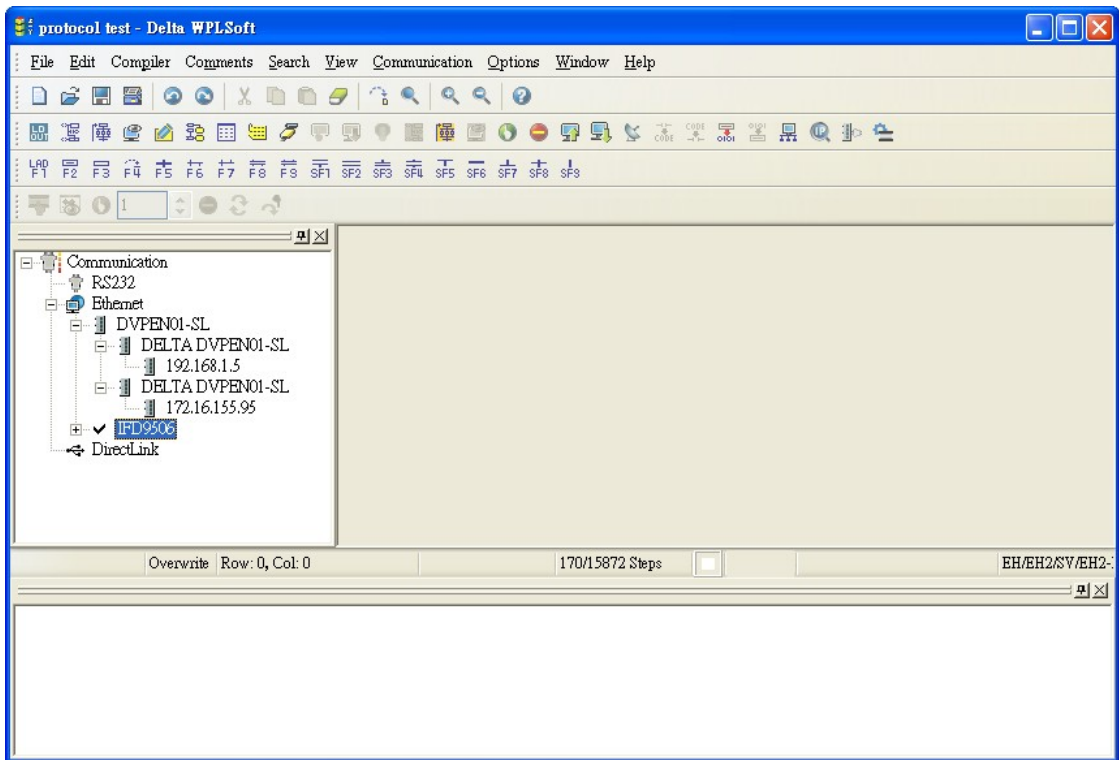
2. Open "Communication Setting" in WPLSoft.



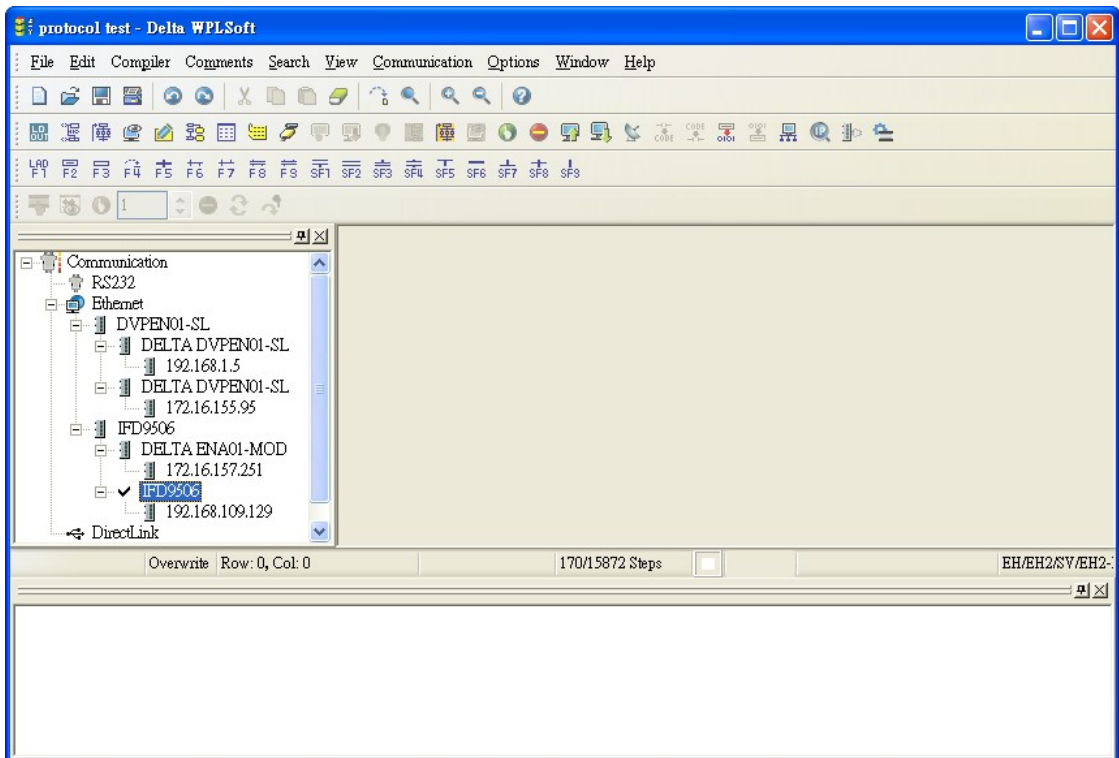
3. Select "Ethernet" and press "OK".



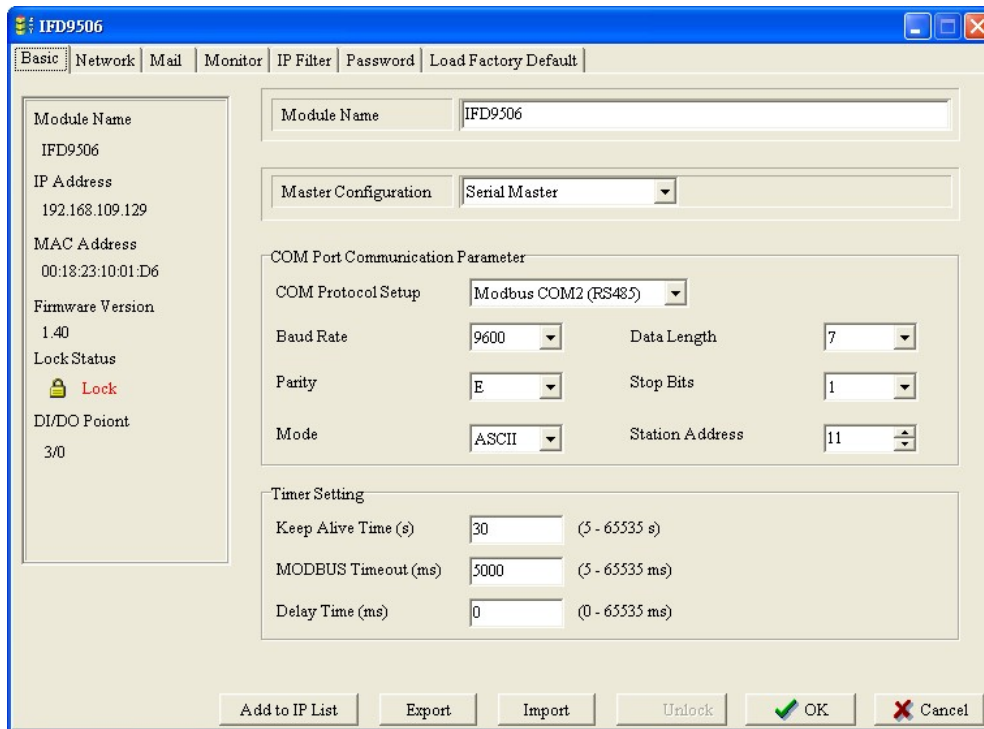
4. Press "broadcast" icon to search for all IFD9506 modules on the network.



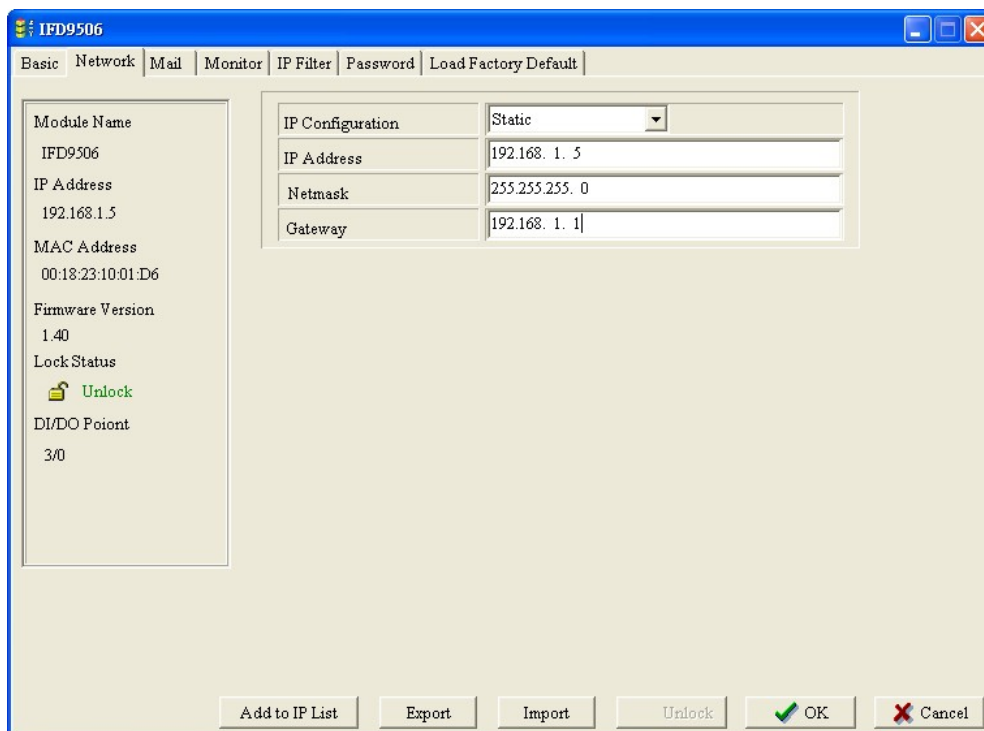
5. Designate an IFD9506 module and double click on it to open the setup page.



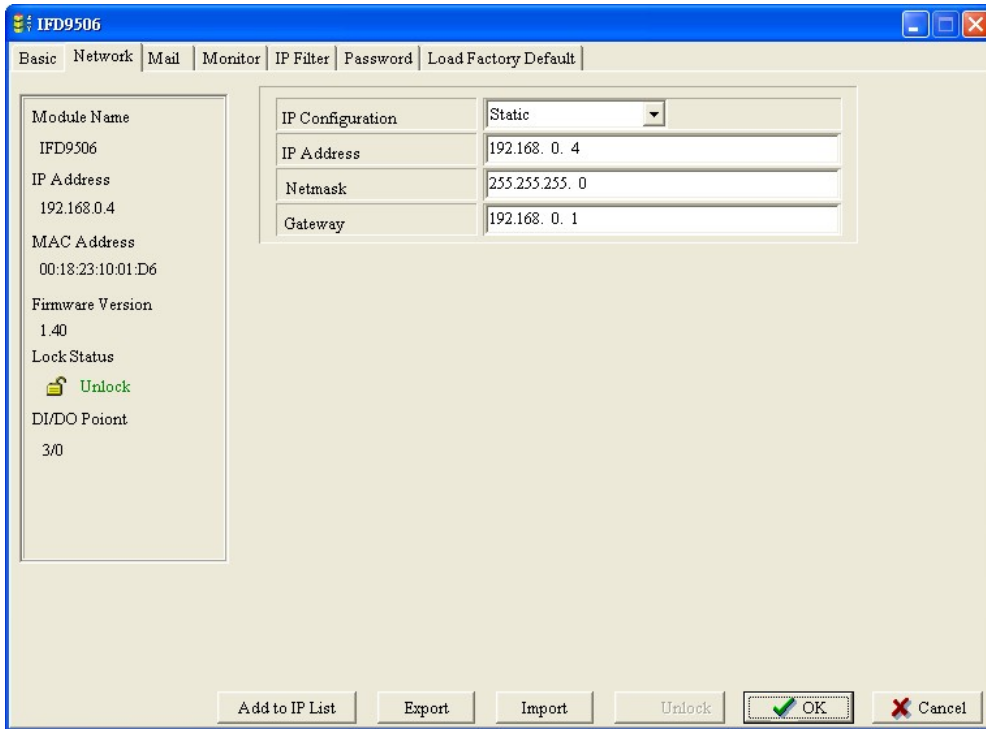
6. You will first see the “Basic” page.



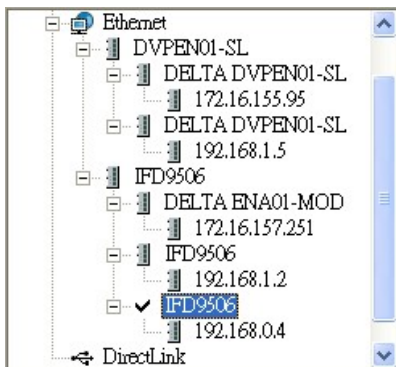
7. Switch to “Network” page.



8. Enter “IP Address: 192.168.0.4”, “Netmask: 255.255.255.0” and “Gateway: 192.168.0.1”. Press “OK” to save the settings into IFD9506, and WPLSoft will search for IFD9506 automatically again.



9. You will see the IP address of IFD9506 has been modified to 192.168.0.4.

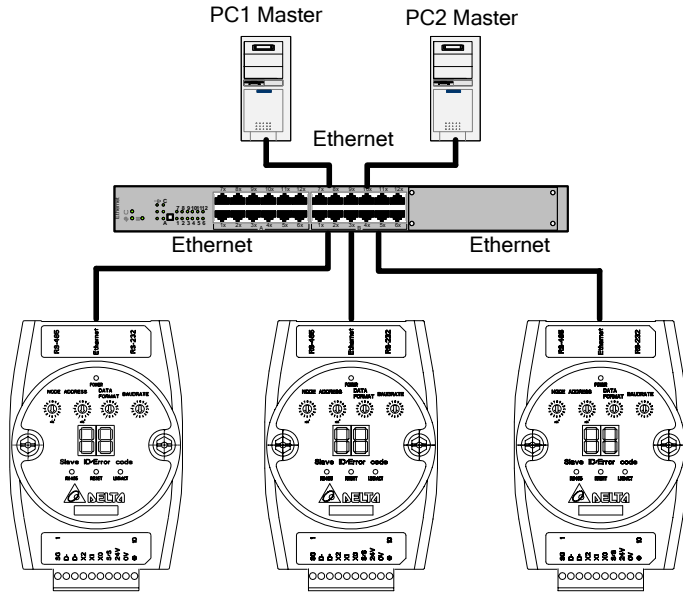


10. Click on DELTA IFD9506, and it will be able to communicate to MPU through WPLSoft.

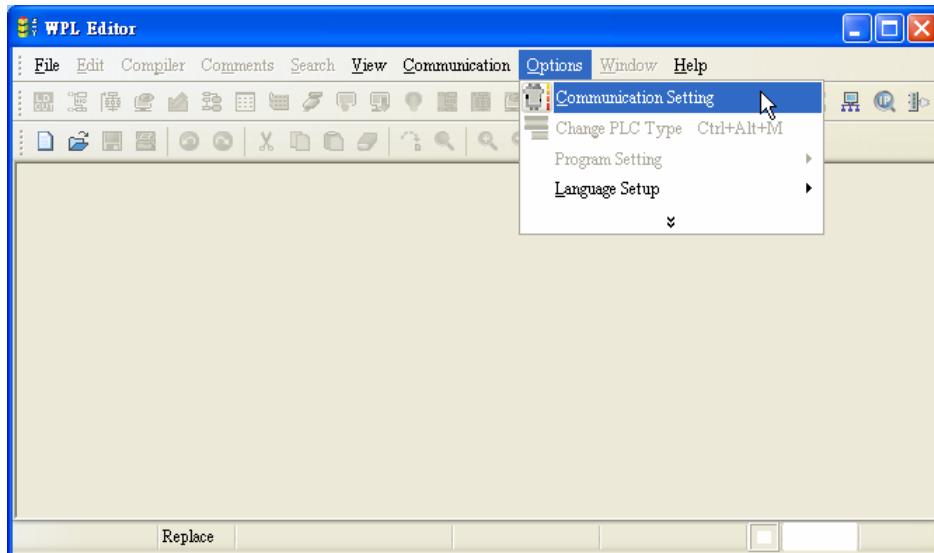
11.2 Connecting to IFD9506 through LAN in PC

Application	Setting up network parameters of IFD9506 through LAN in WPLSoft.
Steps	(1) Connect IFD9506 to PC through KAN by using DHCP server. Note: You can use RJ-45 network cable with/without jump wire.

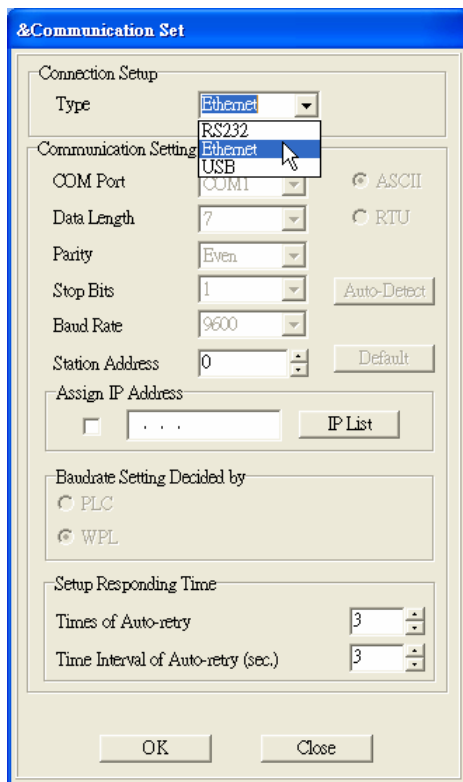
1. The connection:



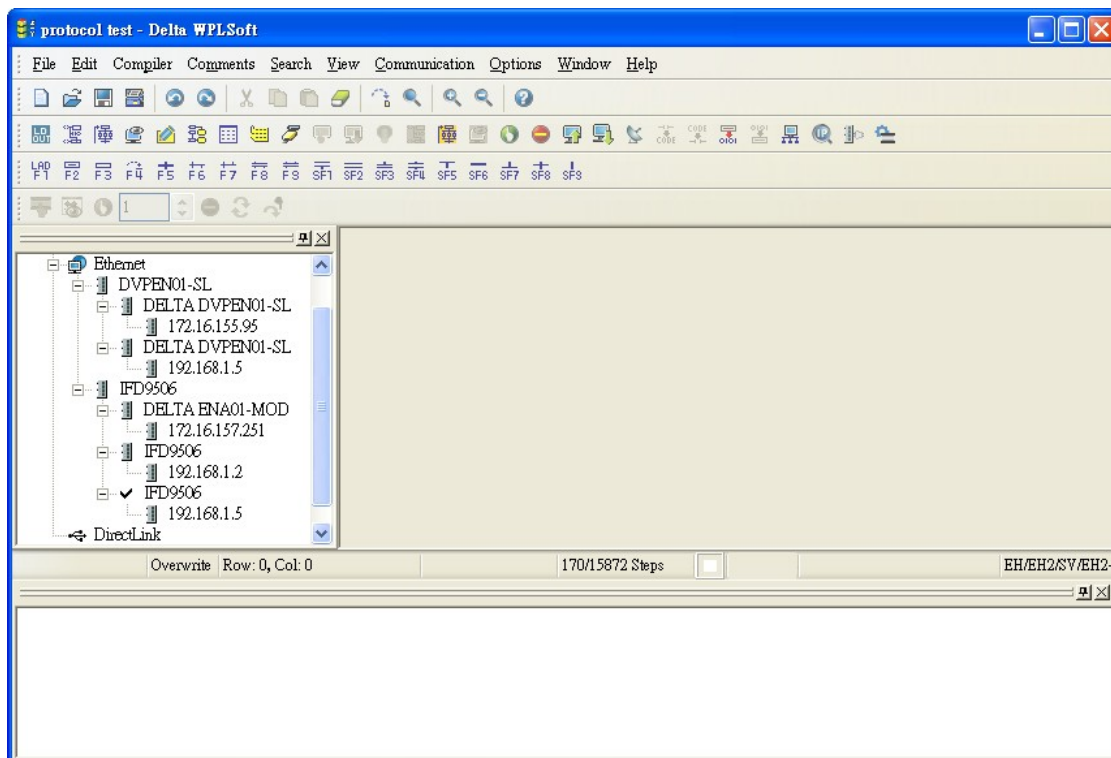
2. Open "Communication Setting" in WPLSoft.



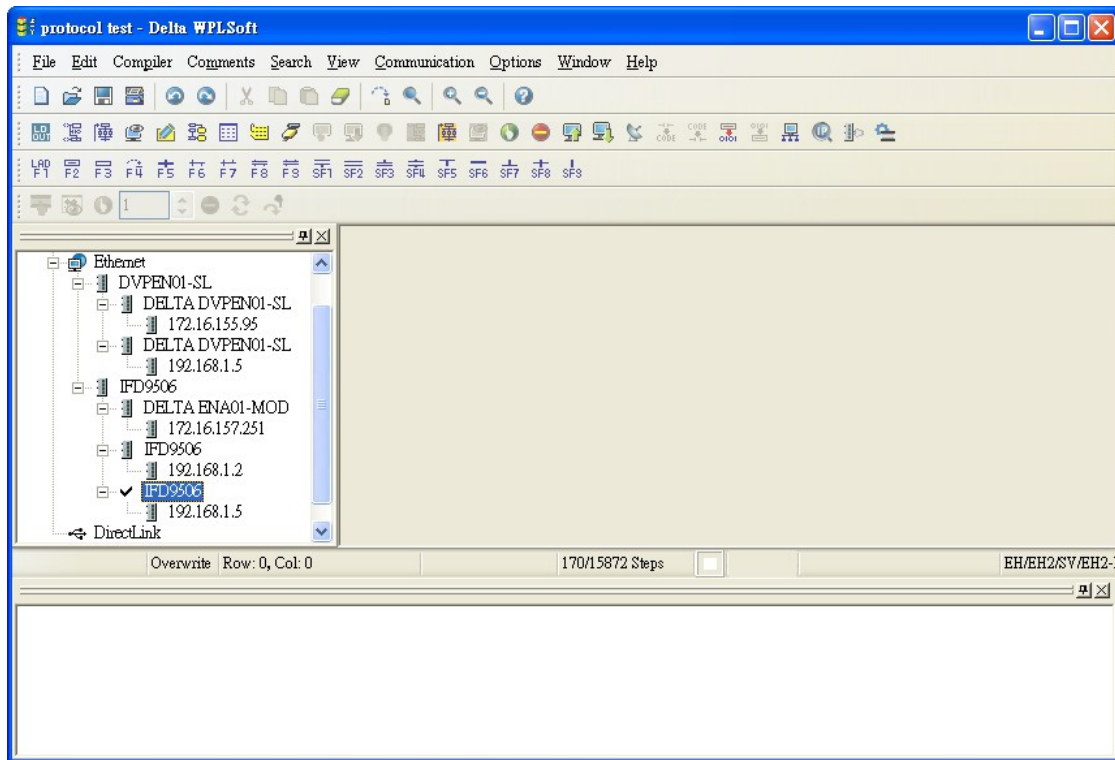
3. Select "Ethernet" and press "OK".



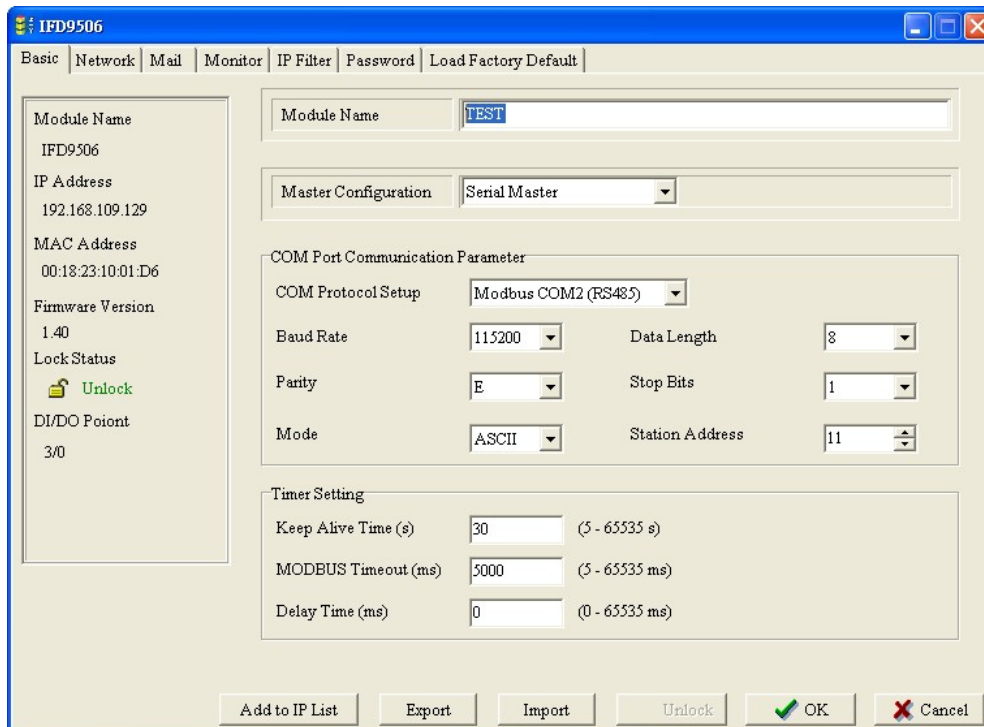
4. Press “broadcast” icon to search for all IFD9506 modules on the network. The IFD9506 module will be detected in “View → Workspace → Communication” window or “View → Workspace → Project” window. (The default module name is DELTA IFD9506, IP:192.168.1.5)



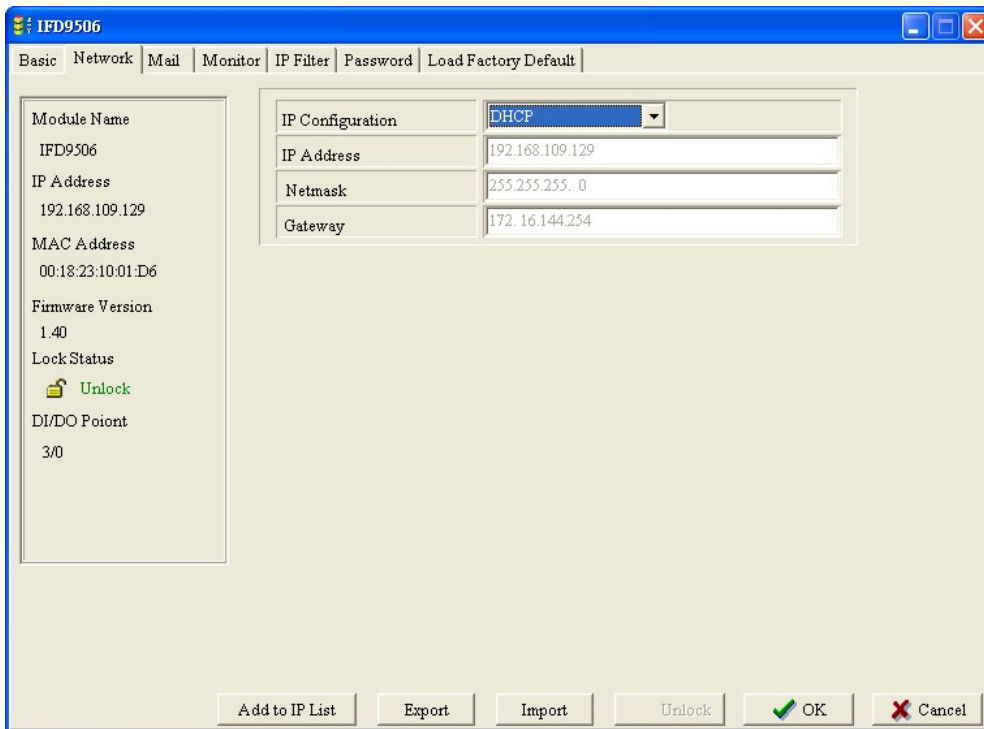
5. Designate IFD9506 module and double click on it to open the setup page.



6. In “Basic” page, you can modify the module name for easier identification.

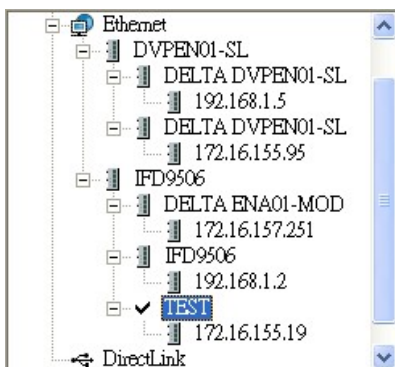


7. Next, set up the new IP address of IFD9506. In “Network” page, select DHCP in “IP Configuration” if there is DHCP server in LAN. If not, select static IP, but please be noted that the subnet mask and gateway settings have to be the same as the settings in the same LAN.



Press "OK" to save the settings into IFD9506.

- WPLSoft will search for IFD9506 automatically again. You will see the IP address of IFD9506 has been modified to 172.16.155.19.



- Click on DELTA IFD9506, and it will be able to communicate to MPU (e.g. upload/download of program, monitoring device).