

# IFD9506 *Ethernet Communication Module* Applicaton Manual



# \land 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

	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
Noise immunity	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	$0^{\circ}$ C ~ 55 $^{\circ}$ 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



⑧ RS-485 connector, digital input points, power

# 2.2 Product Profiles



⑦ Module name

9 DIN rail connector

supply points, earth point

② POWER LED	
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③ Add	lress	switch
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- ④ Data format/baud rate switch
- 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
61	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
61	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		

#### **RS-232 PIN Definition** 2.7

PIN	Signal	Definition	
1		N/C	
2		N/C	
3		N/C	/0
4	Rx	Reception data	50
5	Tx	Transmission	5
6		N/C	L L
7		N/C	
8	GND	Ground	

# 2.8 Address Switch

Switch setting	Content	6 <sup>189</sup>	6 189
01F7	Valid node address setting	×161	x16°

#### 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	7-0-1	А	7-0-2
3	8-O-1	В	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	А	38,400



5	1,200	В	57,600
6	2,400	С	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	<pre></pre>
5	X1	Digital input 1	
6	X0	Digital input 0	
7	S/S	Reference ground of digital input	_ 1 ───► 1
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. $\ensuremath{^\circ}$	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	b	3	b2 ~	~ b1	b0						
Explanation	Rese	erved	Stop bit 0: 1 stop bit 1: 2 stop bits		Parity bit 00: None p 01: Odd pa 11: Even p	parity bit arity bit arity bit	Data bit 0: 7 data bits 1: 8 data bits						
	0000 (0)	7-N-1	0011 (3)	8-O-1	1000 (8)	7-N-2	1011 (B)	8-0-2					
Content	0001 (1)	8-N-1	0110 (6)	7-E-1	1001 (9)	8-N-2	1110 (E)	7-E-2					
	0010 (2)	7-0-1	0111 (7)	8-E-1	1010 (A)	7-0-2	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 Ethernet Server 1: Serial Slave Ethernet Client	COM1 RS-232 setting 0: Delta Configuration 1: Modbus	Mode 0: ASCII 1: RTU							
Content	00000000 (0)	Disable	Disable	Serial Master	Delta configuration	ASCII							
	0000001 (1)	Disable	Disable	Serial Master	Delta configuration	RTU							

		BR4 High b	yte		
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 lov	w byte for bau	id rate of CO	M1						
	Communication interface	Explanation									
		Data	Data Baud rate (bps) Data Baud (bps)		Baud rate (bps)	Data	Baud rate (bps)				
Content		0x01	0x01 110 0x06		2,400	0x0B	57,600				
	RS-232	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	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	<ol> <li>Re-power IFD9506. If the errir still exists, try step 2.</li> <li>Reset IFD9506. If the error still exists, send the module back to the manufacturer for repair.</li> </ol>
F4	Internal error. Manufacturing error	<ol> <li>Re-power IFD9506. If the error still exists, try step 2.</li> <li>Reset IFD9506. If the error still exists, send the module back to the manufacturer for repair.</li> </ol>
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	<ol> <li>Check if IFD9506 is normally connected to RS-485.</li> <li>Make sure the transmission speed of IFD9506 is consistent with that of other nodes on the network.</li> </ol>
0B	No response from the station	<ol> <li>Check if IFD9506 is normally connected to RS-485.</li> <li>Make sure the transmission speed of IFD9506 is consistent with that of other nodes on the network.</li> </ol>

# 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	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	Settin		Attribute	Default	Latched		
	b15	Enabling the function	b15 = 1: Enabling b15 = 0: Disabling				R/W	0	Yes
	b4 ~ b14	Reserved			R/W	0	No		
				b3	b2				
			Reserved	0	0				
		Type of event	Trigger E-Mail	0	1				Yes
AI #0	b2 ~ b3	RX alarm point is triggered	Reserved	1	0		R/W	0	
,			Reserved	1	1				
			The setting will be in thealarm function is						
	b1	Reserved	Reserved						
	b0	Condition for triggering RX	b0 = 0: Triggered wh point is low b0 = 1: Triggered wh 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 devicees 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 "E	" rofor to r	and only: "P/M/" refere	to road and write		

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

#### 5.2 Monitor Word Registerss (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 monitore; 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" refer	s 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.

b1	15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Dev 1	/ice	Device														
	0	15	14	15	12	11	10	9	0	1	0	5	4	5	2	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 addresss
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.

🗒 Delta DCISoft	
Ele Yjew Iools Help	ng
Time De	escription
Ready	Ethernet BROADCAST



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.

IFD95	06		X
Overv	view Basic Mail Mo	onitor   IP Filter   User Define	Security
_ Di	evice Overview		
	Module	IFD 9506	
	IP Address	192.168.1.11	
	MAC Address	00:18:23:10:01:D6	
	Firmware Version	1.40	
	DI / DO Point	370	
		OK	Cancel Apply

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.

Module Name	IFD 9506	
Master Configuration	Serial Master 🗾 🔶 BR #4	
Network Setup		
IP Configuration	Static Network Sett	in
IP Address	192.168.1.11	
Netmask	255 . 255 . 255 . 0	
Gateway	192 168 1 BR#4 BR#5	B
Communication Parameter		
COM Protocol Setup	Modbus COM2 (RS-485)	
Baudrate	9600 💌 Data Length 7 💌	1
Parity	Even 💌 Stop Bits 1 💌	1
Mode	ASCII   Station Address	
Timer Setting		
Keep Alive Time (s)	30 (5 - 65535 s) BR#1	3
Modbus Timeout (ms)	5000 (5 · 65535 ms) BR#1	1
Delay Time (ms)	0 (0 - 65535 ms) BR#1	2

# 8.2 Basic Settings

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

The basics

FD9506	
Overview Basic Mail M	ionitor IP Filter User Define Security
Module Name Master Configuration	IFD 9506 Serial Master
IP Configuration IP Address Netmask Gateway	Static         ▼           192 . 168 . 1 . 11         1           255 . 255 . 255 . 0         1           192 . 168 . 1 . 1         1
Communication Parameter	,
COM Protocol Setup	Modbus CDM2 (RS-485)
Baudrate	9600 💌 Data Length 7 💌
Parity	Even 💌 Stop Bits 1 💌
Mode	ASCII 💌 Station Address 11 📫
Timer Setting	
Keep Alive Time (s)	30 (5 - 65535 s)
Modbus Timeout (ms)	5000 (5 - 65535 ms)
Delay Time (ms)	0 (0 - 65535 ms)
	OK Cancel Apply

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 os 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 locak 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.

- 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  $\rightarrow$  Network Connection  $\rightarrow$  click on "Local Area Connection".



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

- 🕹 Local Area Connection Status ? General Support Connection Status: Connected Duration: 00:10:59 100.0 Mbps Speed: Activity Received 55,888 Packets: 29,896 Properties Disable Close
- 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

Overview	Basic	vlail Mo	nitor   IP Fil	ter Illser Define ISer	curito		
_ Mail A	larm Setup						
	Alarm-1, X0	falling	▼ Trigg	ger			
	Alarm-2, X1	falling	Trigg	ger			
Г	Alarm-3 X2	falling	Trio	ner			
		Training		je.			
Mail S	etup						
SM1	P Server		192 . 168	. 1 . 255			
Mail	From	М	.essage@de	elta			
E-m-	ail Subject o	f Alarm					
			Su	ubject of Alarm			
1	MAIL AL	ARM1					
2	MAIL AL	ARM2					
3	MAIL AL	ARM3					
Bec	iniont E-mai	Address					
Theo	Alarm-1	Alarm-2	Alarm-3	Mail A	drass		
1				Test1@Delta.com.tw	///////////////////////////////////////		
2		X	2	Test2@Delta.com.tw	7		
3	D	D	D			-1	
	-	~	~				
				04			

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 <u>Test@delta.com.tw</u>, 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 <u>Test1@delta.com.tw</u>.

3. E-Mail of sender:

Maximum 63 Engligh 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 <u>Test1@delta.com.tw</u>. 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

IFD	950	6					×		
0	Overview Basic Mail Monitor IP Filter User Define Security								
- Serial Master Mode									
	Manitar Dit Manitar Manitar Manitar Manitar								
			Monit Station Address	OF BIL Device Address	Monito Station Address	r wora Device Address	-		
			Decimal	Hexadecimal	Decimal	Hexadecimal			
	-	1	1	500	1	1000			
		2	1	501	1	1000			
		3	1	502	1	1000			
		4							
		5							
		6							
		7					-		
	- Ser	ial SI	ave Mode						
	001								
			Station Address	s Relay IP Addr	ess				
		2							
	-	2							
	-	4							
		5							
		6							
		7							
		8			-				
_						Cancel	Applu		
							SPPR		

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.

Read cache mode → Read non cache mode → →

Master Gateway Slave PC Ethernet IFD9506 RS-485 PLC

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

IFD 9506		
Overview Bas	ic Mail Monitor IP Filter User Define Security	
🔽 Enable	e IP Filter (Only the IP address listed below are allowed to access)	
⊢ IP Filter Setu	ip	
No.	IP Address Netmask	
1.	0 . 0 . 0 . 0 . 255 . 255 . 255	
2.	0 . 0 . 0 . 0 255 . 255 . 255	
3.	0 . 0 . 0 . 0 255 . 255 . 255	
4.	0 . 0 . 0 . 0 255 . 255 . 255	
5.	0 . 0 . 0 . 0 255 . 255 . 255	
6.	0 . 0 . 0 . 0 255 . 255 . 255	
7.	0 . 0 . 0 . 0 255 . 255 . 255	
8.	0 . 0 . 0 . 0 255 . 255 . 255	
	OK Cancel A	Apply

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

Module Name	IFD 9506		
Master Configuration	Serial Master	•	
Network Setup			
IP Configuration	Static	•	
IP Address	192 . 168 .	109 . 129	
Netmask	255 . 255 .	255 . 0	
Gateway	172 . 16 .	144 . 254	
Parity Mode	Modbus COM2 ( User Define COI User Define COI ASCII	RS-485) M1 (RS-232) M2 (RS-485) Station Address	
Timer Setting			
Keep Alive Time (s)	30	(5 · 65535 s)	
Modbus Timeout (ms)	5000	(5 - 65535 ms)	
Delay Time (ms)	0	(0 - 65535 ms)	

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

IFD9506
Overview Basic Mail Monitor IP Filter User Define Security
COM1 (RS-232)
Serial Master Listen Port 20000
Serial Slave
Destination IP 0.0.0.0 Destination Port 20000
Fix Length 1 Bytes
Start Item 1 - Bytes, Start Char (Hex.) 3A 00 00
Stop Item 2 - Bytes, Stop Char (Hex.) 00 0A 00
COM2 (RS-485)           Serial Master           Listen Port           20001
Serial Slave
Destination IP 0.0.0 Destination Port 20001
Image: Fix Length         1         Bytes         1         ~ 256
✓         Start Item         1         ✓         Bytes, Start Char (Hex.)         34         00         00
Image: Stop Item         2         ■         Bytes, Stop Char (Hex.)         0D         0A         00
OK Cancel Apply

- 1. Listen Port/Destination Port: Range: 1024 ~ 65535.
- 2. Fix Length:

When this is set, IFD9506 will transmit data following the fixed length.

3. 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 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.

# 8.8 Virtual COM

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

■ Select "User Define COM".

Module Name	IFD 9506	
Master Configuration	Serial Master	-
Network Setup		
IP Configuration	Static	•
IP Address	192 . 168 . 109 .	129
Netmask	255 . 255 . 255 .	0
Gateway	172 . 16 . 144 .	254
Parity Mode	User Define COM1 (RS User Define COM2 (RS ASCII	3-232) 3-485) ion Address 11
Timer Setting		
Keep Alive Time (s)	30 (5 - 6	65535 s)
Modbus Timeout (ms)	5000 (5 - 6	65535 ms)
Delay Time (ms)	0 (0 · 0	65535 ms)

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

IFD9506
Overview Basic Mail Monitor IP Filter User Define Security
COM1 (RS-232)
Serial Master
Listen Port 20000
- Serial Slave
Destination IP 00.0 Destination Port 20000
Fix Length 1. Bytes
🔽 Start-Item 1 💌 Bytes, Start Char (Hex.) 3A 00 00
🔽 Stop Item 2 🚽 Bytes, Stop Char (Hex.) 00 04 00
CDM2 (RS-485) Serial Master Listen Port 2000 1024~65535
Serial Slave
Destination IP 0.0.0 Destination Port 20001
Fix Length T Bytes
Start Item 1 🚽 Bytes, Start Char (Hex.) 34 00 00
Stop Item 2 Bytes, Stop Char (Hex.) 00 04 00
OK Cancel Apply

Open Virtual COM setup page

🚇 Delta DCISoft		
Eile View Iools Help		
Network Type	Virtual COM	
X Time	Description	
1770 <b>8</b> .	Ethernet BROADCA	AST //

VirtualCOM - Configuration	
COM Port Parameter COM Port COM2	Select COM port to become virtual – Search device on the network or enter the IP address of the device.

Press "OK", and you will see all the devices connected on the network.

Module	Module Name	IP Address	Port	M.
IFD9506	IFD9506	192.168.1.135	20001	00
IFD9506	IFD9506	192.168.1.11	20001	00

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

Parameter				
COM Port	COM2	•		VirtualCOM
IP Address	192.168.1	. 135	-	Create succee
Listen Port	20001			(OK]
Module Name	IFD9506			

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

🚇 Device Manager	
File Action View Help	
Batteries     Computer     Disk drives	~
Display adapters     Display adapters     DVD/CD-ROM drives     DVD/CD-ROM drives     DVD/CD-ROM drives     DIDE ATA/ATAPI controllers     DIDE ATA/ATAPI controllers	
Keyboards Mice and other pointing devices Network adapters Sommunications Port (COM1) Communications Port (COM2) ELTIMA Virtual Serial Port (COM3) Printer Port (LPT1)	
Processors  SCSI and RAID controllers  Sound, video and game controllers  System devices	~

#### 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

IFD9506	
Overview Basic Mail	Monitor   IP Filter   User Define   Security
Login	
Password	Confirm
Password Setup	
Modify	
Password	
Confirm Password	
Load Factory Default	
Factory Setting	
	OK Cancel Apply

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

Overview   Basic   Mail	Monitor   IP Filter   User Define   Security
Password	Confirm
Password Setup Modify Password Confirm Password	
Load Factory Default	IFD9506 Return to factory setting Yes No
	OK Cancel Apply

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.
  - See below for the items to be set up. The block on the left hand side shows the basis status of IFD9506.

Module	Module Name		FD9506				voninguration page:
IFD9506	Module Configur	ation	Serial SI	ave	-		
IP Address	Network Setup						
192.168.1.11	IP Configuration		atic		-		
MAC Address	IP Address	19	2.168.1.1	1			
MAC AUGIESS	Netmask	25	5.255.25	5.0			
00:18:23:10:01:D6	Gateway	19	2.168.1.1				
Firmware Version	Communication P	arame	er			110 - 111	
1.40	COM Protocol Se	etup	Modt	ous COM2 (RS-485)		-	
	Baudrate 1	15200	-	Data Length	8	-	
	Parity E		•	Stop Bit	1	•	
	Mode A	SCII	•	Station Address	11		
	Timer Setting						
	Keep Alive Time	(ms)	30	(5~65535	S)		
	Delay Time (ms)	(ins)	0	(0~65535	ms)		
<u> </u>						iv.	

### 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

				(here and the second se			
Module		Module Na	me	IFD9506		-	BR4
IFD9506		Module Co	nfiguration	Serial Slave	-		
IP Address		Network Set	up				
192,168.	1.11	IP Configur	ation	Static	-		Network setting
192,100,1,11		IP Address	Idress 192.168.1.11		68.1.11		
MAC Addre	ISS	Netmask		255.255.255.0			
00:18:23	10:01:D6	Gateway	1	192.168.1.1			
		COM Proto	col Setup	Modbus COM2 (RS-4	485)	-	
1.40		COM Proto Baudrate Parity Mode	col Setup 11520 E ASCII	Modbus COM2 (RS- Data Lengt Stop Bit Station Add	485) th 8 1 dress 11	• •	BR4 BR5 BR6

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

Aodule IFD9506 P Addres:	s	Alarm-1 • X0 Falling edge  Trigger Alarm-2 • X1 Falling edge  Trigger	
192.168.	.1.11	Alarm-3 • X2 Falling edge  Trigger Mail Setup	
MAC Addr	ess	SMTP Server 192.168.1.255	
00:18:23	3:10:01:D6	Mail From Message@delta	
Firmware	Version	E-mail Subject of Event Subject of Alarm	
1.40		1 MAIL ALARM1 2 MAIL ALARM2	
		3 MAIL ALARM3	
		Recipient E-mail Address	draca
		Alarm-1     Alarm-2     Alarm-3     E-mail Adi       1         2         3	
			<b></b>

#### 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

Module IFD9506	<b>₽</b>   E	nable IP Filter Only the IP address	s listed below are allowe	to access)	
IP Address	No.	IP Address	Netmask		
192.168.1.11	1	0.0.0.0	255.255.255.255		
M0C 0ddroee	2	0.0.0.0	255.255.255.255		
MAC AUU 535	3	0.0.0.0	255.255.255.255		
00:18:23:10:01:D6	4	0.0.0.0	255.255.255.255		
Firmware Version	5	0.0.0.0	255.255.255.255		
1.40	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

lodule	-Password Set	up		
IFD9506	Password			
) Address	Confirm Pas	sword		
192.168.1.11	Load Factory	Default	8 I 1	
IAC Address	- Frankrik (	1.443		
00:18:23:10:01:D6	Factory	secong		
irmware Version		Apply		
1.40				

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

asic Mail IP Filter	Slave Mode Setting	Master Mode Setting (Monitor)	User Define	Security	
Module IFD9506 IP Address 192.168.1.11 MAC Address 00:18:23:10:01:D6 Firmware Version 1.40	Password Se Password Confirm Pa Load Factory	ztup ssword Default Setting Apply			
eturn to factory set	ing o return to factory : <u>No</u>	setting ?			

Java Applet Window 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

nitor Bit					Monitor Word				
Station Ac (Dec)	ldr. D	evice Addr. (Hex)	Bit Stat	us	Station Addr. (Dec)	Device Addr. (Hex)	Content	Digit Sele	ection
	0500		0 0		1	1000	0000	Hex Hex	
	0502	2	0		1	1002	0000	Hex	Ţ
			T			10			
				$\mathbf{X}$		10	_/	_	-
							1		Ŧ
				Present	value of r	nonitored	device	_	Ŧ
				- Coon		Tornicorec	I GEVICE	-	
	-								
						19			

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 disaplayed 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.



Read non cache mode--►



How to monitor slave

ISIC	Mail	IP Filter	Slave Mod	le Setting	Master	Mode Setting (Monitor)	User Define	Security	
				Station A	ddress	Relay IP Address			
Mode	ule		1			,			
			2						
IFD	9506		3	-					
			4	1					
IP Ac	ldress		5	-					
			6	1					
193	2.168.1.1	1	7	1					
			8						
MAC	Address	\$	9						
			10	-			_		
00:	18:23:10	:01:D6	11	-					
			12						
			13						
FILL	ware vei	rsion	14						
	_		16				-		
1.4	0		16				_		
			17						
			10				-		
			10				-		
			19	8					
			20				-		

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

ndule	Module Nam	e	DVP			
FD9506	Module Conf	iguration	Serial Master	-		
Address	Network Setur	(-				
192.168.1.10	IP Configurat	ion S	tatic	-		
AC Address	IP Address	1	92.168.1.10			
AC Address	Netmask	2	55.255.255.0			
00:18:23:10:01:D6	Gateway	0	.0.0.0			
mware Version	Communicatio	n Parame	eter			
1.40	COM Protoco	l Setup	Modbus COM2 (RS-4	185)	-	
	Baudrate	115200	Modbus COM1 (RS-2 Modbus COM2 (RS-4	(32) (85)		
	Parity	E	Viser Define COM1 (F	RS-232)		
	Mode	ASCII	User Define COM2 (F	RS-485)		
	Timer Setting					
	Keep Alive Ti	me(s)	30 (5~	65535 s )		
	Modbus Time	eout (ms)	5000 (5~	65535 ms )		
	Delay Time (r	ns)	0 (0~	65535 ms )		
					Apply	

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

Basic	Mail	IP Filter	Slave Mode S	Setting Master M	lode Setting (Monitor)	Ethernet / IP	User Define	Security
-CON	A1 (RS-23 Serial Mas Listen P	32) ster ort 200		Serial Dest.	Slave IP 0.0.0.0	Dest. Port 2		
	Fix Leng Start Ite Stop Iter	th 1 m 1 n 2	Bytes Bytes Bytes	, Start Char (Hex.) , Stop Char (Hex.)	3A 00 00 0D 0A 00			
-CON	A2 (RS-48 Serial Mas Listen P	85) ster ort 200	D1	Serial Sla Dest. IP	<b>We</b> 172.16.1.1	Dest. Port 200	001	
r N	Fix Leng Start Ite Stop Iter	th 3 m 1 n 3	Byte	es, Start Char (Hex.) es, Stop Char (Hex.)	- 1 ~ 256 3A 00 00 0D 0A 00			
		2 3					Apply	]

- 1. Listen Port/Destination Port: Range: 1024 ~ 65535.
- 5. Fix Length:

When this is sest, IFD9506 will transmit data following the fixed length.

6. Start Item:

The start item of data. Range:  $1 \sim 3$ 

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	<ul><li>(1) Set up password in IFD9506.</li><li>(2) Unlock IFD9506.</li></ul>

1. See 8.1 for the connection and how to set up the communication.

2. Open the setup page and switch to "Security" page.

IFD9506	Example 1
Overview Basic Mail	Monitor IP Filter User Define Security
Login	
Password	Confirm
Password Setup	
Modify	
Password	
Confirm Password	
Load Factory Default	
Factory Setting	
	OK Cancel Apply

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

000				
Iverview   Basic   Mail	Monitor   IP Filter	User Define	Security	
Login				
Password	<u> </u>	Confirm		
Password Setup				
🔽 Modify				
Password	xxxx			
Confirm Password	хххх			
- Load Factory Default-				
2000 r dotoly 2 ordan				
Factory Setting				

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.

IFD9506	IFD9506
Overview Basic Mail Monitor IP Filter User Define Security	Overview Basic Mail Monitor IP Filter User Define Security
Login Password Confirm	Password Confirm
Password Setup	Password Setup
I Modify	I▼ Modify
Password	Password max
	Land Extern Default
UK Cancel Mppy	
IFD9506  Configuration is successful OK	

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

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

- 1. Use DVPACAB2A30 cable to connect the PC and IFD9506. Open the setup page.
- 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> <li>Check "Enable IP Filter" box.</li> <li>Set up IP address to "192.168.0.7" and netmask to "255.255.255.255".</li> <li>Set up IP addres to "172.16.0.1" and netmask to "255.255.255.0".</li> </ol>

- 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.

0.0.0.0.255.255.255.255
0.0.0.0
0 . 0 . 0 . 0 255 . 255 . 255
0 . 0 . 0 . 0 . 255 . 255 . 255
0 . 0 . 0 . 0 255 . 255 . 255
0     .     0     .     0     .     255     .     255     .     255     .     255     .     255     .     255     .     255     .     255     .     255     .     255     .     .     255     .     .     255     .

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

IFD9506			X
Overview Basi	ic   Mail   Monitor IP Filter	User Define Security	
🔽 Enable	IP Filter (Only the IP address li	isted below are allowed to access)	
_ IP Filter Setu	p		
No.	IP Address	Netmask	
1.	192 . 168 . 0 . 7	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	
		OK Cancel	Apply

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.

IFD9506		×
Overview Basi	c   Mail   Monitor IP Filter   User Define   Security	
🔽 Enable	IP Filter (Only the IP address listed below are allowed to access)	
⊢ IP Filter Setur	p	
No.	IP Address Netmask	
1.	192 . 168 . 0 . 7 255 . 255 . 255	
2.	172 . 16 . 0 . 1 255 . 255 . 255 . 0	
3.	0 . 0 . 0 . 0 255 . 255 . 255	
4.	0 . 0 . 0 . 0 255 . 255 . 255	
5.	0 . 0 . 0 . 0 . 255 . 255 . 255	
6.	0 . 0 . 0 . 0 255 . 255 . 255	
7.		
8.		
	OK Cancel Apply	

# 10.4 Application of E-Mail

<ul> <li>Steps</li> <li>(1) Check "Alarm 1" to enable it.</li> <li>(2) Set the IP of SMTP server to "192.168.1.99" and "Mail From" to "Message@Delta"</li> <li>(3) Set the E-mail Subject of Event to "MAIL ALARM".</li> <li>(4) Set the E-mail addres of administrator to test@sample.com.</li> </ul>	Application	Sending E-Mail to notify the administrator when Alarm 1 is triggered.
	Steps	<ol> <li>Check "Alarm 1" to enable it.</li> <li>Set the IP of SMTP server to "192.168.1.99" and "Mail From" to "Message@Delta"</li> <li>Set the E-mail Subject of Event to "MAIL ALARM".</li> <li>Set the E-mail addres of administrator to <u>test@sample.com</u>.</li> </ol>

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

FD9506								Į
Overview	Basic 1	Mail Mo	nitor   IP Fil	ter User Defi	ne Seci	urity		
- Mail Al	arm Setup-							_
	Jama 1. V0.	Kallina a	Tries					
		railing		jei				
	Alarm-2, X1	falling		jer				
	Alarm-3, X2	falling	Trigg	ger				
- Mail Se	etup							
SMT	P Server	Г	192 . 168	1 . 255				
64-0	Fran							
- E mi	riulli J.C. bissta	[™ £Alarra	essage@ue	ata				
E-ma	ali subject o	r Alarm	с.					
1	MAIL AI	ARM1	31	INJECT OF AIA				
2	MAIL AI	ARM2						
3	MAIL AL	ARM3						
Reci	pient E-mail	Address						
	Alarm-1	Alarm-2	Alarm-3		Mail Ad	ldress	<u> </u>	
1	D	D	D					
2	D	D	D					
3	D	D	D					
	~	~	~					
					~	Const	1 /	L
				- U	K	Lancel	App	

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.

IFD9506				X
Overview — Mail A	Basic	Mail Mo	nitor   IP Fil	ter   User Define   Security
	iann setup			
	Alarm-1, XO	falling	▼ Trigg	ger
	Alarm-2, X1	falling	🚽 Trigg	ger
	Alarm-3, X2	falling	🖃 Trigg	ger
- Mail S	etup			
SM1	P Server	Γ	192 . 168	. 1 . 99
Mail	From	M	lessage@di	elta
E-m-	ail Subject o	of Alarm —		
			Su	ubject of Alarm
1	MAIL AI	.ARM1		
2	MAIL AI	.ARM2		
3	MAIL AI	.ARM3		
Rec	ipient E-mai	Address-		
	Alarm-1	Alarm-2	Alarm-3	Mail Address
1	2	D	D	Test@Delta.com.tw
2	D	D	D	
3	D	D		<b>-</b> 1
	<b>n</b>	5	-	
				OK Cancel Apply

# 10.5 Monitoring Mode

Application	Writing the address of the device to be monitored into the monitor table.
Steps	(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 wird 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.

	06					
)verv	view	Basic Mail M	1onitor   IP Filter   L	Jser Define   Securi	ity	
-56	erial M	Jaster Mode				
		Monit	or Bit	Monito	r Word	1
		Station Address	Device Address	Station Address	Device Address	
		Decimal	Hexadecimal	Decimal	Hexadecimal	
	1					
	2					
	4					
	5					
	6					
	7					-
_						
-Se	ərial S	lave Mode Station Address	s Relay IP Addr	ess 🔺		
- Se	erial S	lave Mode	s Relay IP Addr	ess		
Se	erial S 1 2	lave Mode	s Relay IP Addr	ess		
Se	erial S 1 2 3	lave Mode	s Relay IP Addr	ess <u> </u>		
− Se	erial S 1 2 3 4	lave Mode	s Relay IP Addr	ess <u> </u>		
Se	erial S 1 2 3 4 5	lave Mode	s Relay IP Addr	ess 🔺		
Se	erial S 1 2 3 4 5 6 7	lave Mode	s Relay IP Addr			
Se	erial S 1 2 3 4 5 6 7 9	lave Mode	s Relay IP Addr			
Se	1 2 3 4 5 6 7 8	lave Mode	s Relay IP Add			

3. The settings:

verview	Basic Mail N	1onitor   IP Filter   L	Jser Define Securi	w]	
- Corial k	daatar Mada				
Senar	vaster mode				
	Monit	or Bit	Monito	-	
	Station Address	Device Address Hevadecimal	Station Address	Device Address Hevadecimal	
1	1	100	1	150	
2	1	300	3	200	_
3	2	200	4	100	
4					
5					
6					
7					-
-Serial S	slave Mode				
	Station Addres	s Relay IP Add	ess 🔺		
1	Station Addres	s Relay IP Add	ess		
1 2	Station Addres	s Relay IP Add	ess		
1 2 3	Station Addres	s Relay IP Addı	ess		
1 2 3 4	Station Addres	s Relay IP Add	ess		
1 2 3 4 5	Station Addres	s Relay IP Add			
1 2 3 4 5 6	Station Addres	s Relay IP Add			
1 2 3 4 5 6 7	Station Addres	s Relay IP Add			
1 2 3 4 5 6 7 8	Station Addres	s Relay IP Add	ess		
1 2 3 4 5 6 7 8	Station Addres	s Relay IP Add			

# 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	<ul> <li>(1) HMI sends out the instruction.</li> <li>(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".</li> <li>(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".</li> <li>(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".</li> <li>(5) HMI master and IFD9506 slave transmit data through RS-485.</li> <li>(6) IFD9506 slave and IFD9506 master transmit data through Ethernet.</li> <li>(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".</li> </ul>

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".

Project Name	-	
HMI		
Screen Name		
Screen_1		
Screen No	10	
1		
HMI		
DOP-A57CSTD 256 Colors	*	
Base Port Controller		
Delta DVP PLC	~	-
🖃 📇 Delta	^	ОК
- Z Delta DVP PLC		Cancel
Delta DVP EH/SA ES/EX/SS(V5		
Delta Controller R TIL		
Delta DVP TCP/IP		
🚽 📝 Delta Solectria		
🗄 📄 Allen Bradley		
🖻 🧰 Cimon		
🗈 🧰 Copley		
🕀 🦳 Danfoss	1222	

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

Configuration						X			
Standard Communication	Print Default	t Othe	er						
Nu Link Nam	•	Contr	roller		Insert				
1 Base Port		Delta	Controller RTU		Delete				
					Indate				
					, paulo				
- Controller Settings									
COM Port	COM2 🗸	F	HMI Station	8	*				
Password	12345678	F	PLC Station	1	*				
Comm. Delay Time	50 😭 m	s I:	nterface	RS485	~				
Timeout	1500 🛟 m	s I	Data Bits	8 Bits	~				
Retry Count	3	S	Stop Bits	1 Bits	~				
			Baud Rate	38400	×				
✓ Optimize	Size Limit		'anty	Even					
Communication	Communication 3 🗘 times then cancel connected								
			OK		Cancel				

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.

I s	erEdit -	
file	<u>E</u> dit <u>V</u> iew Ele <u>m</u> ent <u>S</u> cree	en <u>T</u> ools <u>O</u> ptions <u>W</u> indow <u>H</u>
=	0 🖬 🕒 🤊 🕫 👌	x 🖻 🖺 🗛 🗖 😅 🖏
	<u>~</u>	✓ ← ++ → 1 3
	고 프 드 🤉 🔍 💻	i 🗗 🔽 📓 🛄 🥀 🚎
	Set	🔳 System Date Time
	Reset	Password Table Setup
	Momentary	Enter Password
	Maintained	Contrast/Brightness
	Multistate	📕 Low Security
	Set Value	🔳 System Menu
	Set Constant	🔳 Report List
	Increment	🔳 Screen Capture
	Decrement	🔳 Remove USB
	Goto Screen	Import/Export Recipe
	Previous Page	

- 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".

🗟 ScrEdit - D.\MANUAL\@應用技箭手册\PLC Application Manual\特殊模塊篇\TC\WORD_with cover\1210中文国\HMI dop 🛛 🔲 💟										
File Edit Yiew Element Screen Iools Options Window Help										
📑 🤣 🛃 🕒 🤊 🖤 😹 🖸 📓 🗛 🛄 😅 🚱 🥘 100% 🕑 🔩 🔩 🔍										
32 🗸 Arial 🗸 🗢 🕼 🗢 👔 💲 🗍 🛆 - B I U 🖉 🥻 🐼 🐼 💿 🖃 🗐 🗐										
	<b>2</b> 📾 0-0	1.00	1.000		~	0.	L. 6	4	B ∰ ≛ ≛ ⊑	2 🕎 🔳
1 - Screen_1						1		P	roperty	@ X
	1						- 13 - 13 - 13 - 13 - 13 - 13 - 13 - 13	10	Maintained_001 {0}	V 0 🗢
MODBUS MASTER									Write Address	1@RWB-0:
Input							?	ব	Read Address	None
Type									On Macro	0
	T	ink		<b>P</b>	laca P	ort	×		Off Macro	0
T U C PLC Device (Wor	d)	Dation V							Text	0
PLC Device (Bit)	Т	Device	Tan	F	WB-	8	~		Text Size	32
	(Wowl)		- 3 P						ront Test Calas	Anal
SlavelD = 1	A	Addres	s/Val	ue U	200				Blink	No
O Internal Memory	(Bit)	Гад		1					Pintona Rank Mama	None
Constant	_	• ••0							🖹 List 🗔 Preview	
		в	c	D	E	F	←	0	utput	⊌×
		6	7	8	9	A	CE		Step Action	
	016	1	2	3	4	5				
PLC Station Number		0	:	+		T	•	•	—Press it to	complete
	- Default			_	N	one			the s	setup.
	- Jonaun			-		one			Record Output	
									record   o albar	
121 121 12 12 12 12 12 12 12 12 12 12 12	1 H I H									
	Downloa	ad:USB	i.	[5	85,19	5] @2	7,76 W:11	3 H:8	9 DOP-A57CS	STD 256 Colors

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 connencting to the software supporing 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> <li>Select "User Define" protocol and set the parameters in the serial master and serial slave to the ones consistent with those in VFD-E.</li> <li>Open Delta VFDSoft, set up the communication format (COM Setup) and establish the connection.</li> </ol>

- 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.

Module Name	IFD 9506				
Master Configuration	Serial Master		•		
Vetwork Setup					
IP Configuration	Static		•		
IP Address	192 . 168	. 109 .	. 129		
Netmask	255 . 255	. 255 .	. 0		
Gateway	172 . 16	. 144 .	. 254		
Baudrate Parity Mode	Modbus COM User Define C User Define C ASCII	2 (RS-4) OM1 (R OM2 (R Sta	85) S-232) S-485) tion Address	1.	• •
Fimer Setting					
Keep Alive Time (s)	30	(5 -	65535 s)		
Modbus Timeout (ms)	5000	(5 -	65535 ms)		
Delay Time (ms)	0	(0 -	65535 ms)		

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

COM1 (RS-232)-		
- Serial Master		
Listen Port	20000	
- Serial Slave		
Destination IP	0.0.0.0 Destination Port 20000	1
Fix Length	1. Bytes	
□ Start Item	1 🚽 Bytes, Start Char (Hex.) 3A 00	00
COM2 (RS-485)	2 Bytes, Stop Char (Hex.) DD DA	00
COM2 (RS-485) Serial Master Listen Port	2 Bytes, Stop Char (Hex.) 00 0A	
COM2 (RS-485) Serial Master Listen Port Serial Slave	2 yetes, Stop Char (Hex.) DD DA	
CM2 (RS-485) Serial Master Listen Port Serial Slave Destination IP	2 Bytes, Stop Char (Hex.) 00 0A 2000 1024~65535	
Stop (term Stop (term COM2 (RS-485) Serial Master Listen Port Serial Slave Destination IP Fix Length	2 Bytes, Stop Char (Hex.) DD DA 1024~65535 0.0.0 Destination Port 20001 Bytes	
Stop (tem) COM2 (RS-485) Serial Master Listen Port Serial Slave Destination IP Fix Length Start (tem)	2         Bytes, Stop Char (Hex.)         0D         0A           20001         1024~65535           0.0.0         Destination Port         20001           1         Bytes         3A         00	

Open Virtual COM setup page

📇 Delta DCISoft	
Ele Yiew Iools	
Time	Description
	Ethernet BROADCAST
VirtualCOM - Co File Edit Help	Create         Parameter         COM Port       COM2       Select COM port to become virtual         IP Address       Search device on the network or enter the IP address of the device.         Module Name       OK       Cancel

Press "OK", and you will see all the devices connected on the network.

odule				
Node List				
Module	Module Name	IP Address	Port	M.
IFD9506	IFD9506	192.168.1.135	20001	00
IFD9506	IFD9506	192.168.1.11	20001	00
•				•
		OK	] Can	.cel

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

Create					$\mathbf{\overline{X}}$	
Parame	ter					
CON	/I Port	COM2		•		VirtualCOM
IP A	.ddres	s 192.1	68.1	. 135		Create succeed
List	en Por	t 20001				
		IFFORM				
Moo	iule N	ame  IFD9506				
			or	L Canca		
			UK	Cance.	<u>.</u>	
	UM -	Configuration				
	Teth					
COM Port	<=>	IP Address	Port	Module	Module Name	
COM2	<=>	192.168.1.11	20001	IFD9506	IFD9506	

■ 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> <li>The IP of the PLC executing WPLSoft is "192.168.1.2".</li> <li>Subnet mask: 255.255.255.0; Gateway: 192.168.1.254</li> <li>Modify the network parameter of IFD9506.</li> <li>Connecting the PC and IFD9506 by RJ-45 network cable.</li> <li>Note: Both PC and IFD9506 cannot adopt DHCP but static IP.</li> </ol>

1. The connections:



2. Open "Communication Setting" in WPLSoft.

Si WPL Editor	
File Edit Compiler Comments Search View Communication Options Window Help	
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D 🛱 📰 🛛 💿 X D D 🦪 🖧 Q Q Three PLC Type Ctrl+Alt+M	
Program Setting	
Language Setup	
×	
Replace	

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

&Communication Set					
Connection Setup					
Туре	Ethernet	-			
Communication Settin	g Ethemet				
COM Port	IOSB ICOMI	- V	🖲 ASCII		
Data Length	7	-	C RTU		
Parity	Even	-			
Stop Bits	1	-	Auto-Detect		
Baud Rate	9600	-			
Station Address	0	÷	Default		
Assign IP Address			TD T in 1		
			IP LIST		
Baudrate Setting De	Baudrate Setting Decided by				
C PLC					
© WPL					
Setup Responding T	lime				
Times of Auto-retry	Times of Auto-retry 3				
Time Interval of Auto-retry (sec.)					
OK Close					
		0100	-		

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

Sf protocol test - Delta WPLSoft	
Eile Edit Compiler Comments Search View Communication Options Window Help	
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Overwrite Row: 0, Col: 0 170/15872 Steps EH/EH2/	SV/EH2-:
	<u>-#1</u>

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

😫 protocol test - Delta WPLSoft	
<u>File Edit</u> Compiler Comments Search <u>V</u> iew <u>Communication</u> <u>Options Window H</u> elp	
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: [約 尼2 F3 臼 F5 F6 F7 F8 F8 F5 F5 F8 F8 F8 F8 F8 F8 F8 F8	
······································	
RS232	
E-1 DELTA DVPENOI-SL	
192168.1.5	
□ - 11 FD9306	
E-1 DELTA ENAOI-MOD	
172.16157.251	
A DirectLink	
Overwrite Row: 0, Col: 0 170/15872 Steps EH/EH2	/SV/EH2-:
2	= 뫼뇌

6. You will first see the "Basic" page.

😫 IFD9506			
Basic Network Mail Monito	r   IP Filter   Password   Los	d Factory Default	
Module Name IFD9506	Module Name	IFD9506	
IP Address 192.168.109.129	Master Configuration	Serial Master	
MAC Address 00:18:23:10:01:D6 Firmware Version 1.40 Lock Status Clock Status Lock DI/DO Poiont 3/0	COM Port Communication COM Protocol Setup Baud Rate Parity Mode	Parameter Modbus COM2 (RS485) 9600 Data Length E Stop Bits ASCII Station Address	7 V 1 V 11 <del>V</del>
	Timer Setting Keep Alive Time (s) MODBUS Timeout (ms) Delay Time (ms)	30       (5 - 655335 s)         5000       (5 - 655335 ms)         0       (0 - 655335 ms)	
A	dd to IP List Export	Import Unlock	🖌 OK 🛛 🗶 Cancel

7. Switch to "Network" page.

💐 IFD9506			
Basic Network Mail Mo	onitor   IP Filter   Password   Load	Factory Default	
	r		
Module Name	IP Configuration	Static	
IFD9506	IP Address	192.168. 1. 5	
IP Address	Netmask	255.255.255. 0	
192.168.1.5	Gateway	192.168. 1. 1	
MAC Address	Caronay	li .	
00:18:23:10:01:D6			
Firmware Version			
1.40 LookStatua			
- Unlock			
DI/DO Poiont			
3/0			
5/0			
	Add to IP List Emer	Import	OK Canad
_	Add to IF List Export	Import Offick	V OK

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.

\${ IFD9506			
Basic Network Mail Monito	r   IP Filter   Password   Load	Factory Default	
Module Name	IP Configuration	Static	
IFD9506	IP Address	192.168. 0. 4	
IP Address	Netmask	255.255.255. 0	_
192.168.0.4	Gateway	192.168. 0. 1	
00:18:23:10:01:D6			
Firmware Version			
1.40			
Lock Status			
DI/DO Poiont			
3/0			
Ac	ld to IP List Export	Import Unlock	OK X Cancel

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	<ol> <li>Connect IFD9506 to PC through KAN by using DHCP server.</li> <li>Note: You can use RJ-45 network cable with/without jump wire.</li> </ol>

1. The connection:



2. Open "Communication Setting" in WPLSoft.

ë‡ WPL Editor	
Eile Edit Compiler Comments Search View Communication Options Window Help	
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L Change PLC Type Ctrl+Alt+M	
Language Setup	
*	
Replace	

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

&Communication Set				
Connection Setup				
Туре	Ethernet	•		
Communication Setting	RS232 g Ethernet			
COM Port	USB MODE	s ©A	SCII	
Data Length	7	- OR	TU	
Parity	Even	-		
Stop Bits	1	- Auto-J	Detect	
Baud Rate	9600	~		
Station Address	0	- Def	ault	
Assign IP Address				
		IP List		
Baudrate Setting Decided by				
C PLC				
© WPL				
Setup Responding T	ime			
Times of Auto-retry 3				
Time Interval of Auto-retry (sec.)				
OK Close				
		CIOBE		

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.

🛢 🕴 IFD9506					
Basic Network Mail Monito	r   IP Filter   Password   Loa	d Factory Defau	lt		
Module Name	Module Name	TEST			-
IFD9506					
IP Address 192.168.109.129	Master Configuration	Serial Master	•		
MAC Address 00:18:23:10:01:D6	COM Port Communication	Parameter			
Firmware Version 1.40	COM Protocol Setup Baud Rate	Modbus CON	A2 (RS485) ▼ Data Length	8 💌	
Lock Status	Parity	E 💌	Stop Bits	1 -	
DI/DO Poiont 3/0	Mode	ASCII 💌	Station Address	11 +	
	Timer Setting				
	Keep Alive Time (s)	30	(5 - 65535 s)		
	MODBUS Timeout (ms)	5000	(5 - 65535 ms)		
	Delay Time (ms)	0	(0 - 65535 ms)		
A	dd to IP List Export	Import	Unlock	🖊 ОК 🛛 🗶 Са	ancel

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.

\$† IFD9506			
Basic Network Mail   Monitor   IP Filter   Password   Load Factory Default			
Module Name	IP Configuration	DHCP	-
IFD9506	IP Address	192.168.109.129	
IP Address 192.168.109.129	Netmask	255.255.255. 0	
	Gateway	172.16.144.254	
MAC Address			
Firmware Version 1.40 Lock Status 🖆 Unlock DI/DO Poiont 3/0			
	Add to IP List Export	t Import Unlock 🗸 OK	Cancel

Press "OK" to save the settings into IFD9506.

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



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