MDNET-5W Wi-Fi/Ethernet/RS485 Converter Operation Manual



Version 01.00 2016/03/24



I. Features & Specification

Features:

- Connect RS485 devices to Ethernet or Wi-Fi network
- Connect Ethernet device to Wi-Fi network
- Multi-Controller connection
- Remote firmware upgradable

Specification:

	Ethernet ←→ RS485
Convert mode	Wi-Fi ←→ RS485
	Ethernet ←→ Wi-Fi
Interface	Wi-Fi / Ethernet / RS485
Wi-Fi	802.11 b/g/n
Ethernet	10/100BaseT, RJ45 connector
Operating Mode	TCP Server, TCP Client, UDP
Connector port	4 PIN (RS485 + DC power)
RS485 Baud Rate	300 ~ 115,200 bps
Parity	None/ Even/ Odd
Parity Data bits	None/ Even/ Odd 8 / 7
Parity Data bits Stop bits	None/ Even/ Odd 8 / 7 1 / 2
Parity Data bits Stop bits Configuration tool	None/ Even/ Odd 8 / 7 1 / 2 Web Browser, Windows utility.
Parity Data bits Stop bits Configuration tool Reset function	None/ Even/ Odd 8 / 7 1 / 2 Web Browser, Windows utility. Initial button
Parity Data bits Stop bits Configuration tool Reset function Status Indicator	None/ Even/ Odd 8 / 7 1 / 2 Web Browser, Windows utility. Initial button 4 LED
Parity Data bits Stop bits Configuration tool Reset function Status Indicator Operating Temperature	None/ Even/ Odd 8 / 7 1 / 2 Web Browser, Windows utility. Initial button 4 LED -20°C ~ 70°C
Parity Data bits Stop bits Configuration tool Reset function Status Indicator Operating Temperature Power	None/ Even/ Odd 8 / 7 1 / 2 Web Browser, Windows utility. Initial button 4 LED -20°C ~ 70°C 8V ~ 15V DC / 1W ~ 2W



II. Wiring Diagram





III. Network Parameters Setting

1. Execute "NET_Discover_V0110.exe" and press

Discover to seal

to search MDNET-5W product.

2. Factory default IP is "192.168.1.101". User can check the MAC address from product sticker with IP to confirm the device.

🏭 NET	_Discover Versio	n 1.1			
NUM	IP	MAC	INFO		Discover
3	192,168,1,221	44:33:4C:C4:8A:26	HLK-RM04(V1.78(1ul 23 2013))		LISCOVCI
2	192.168.1.101	AC:A2:13:B5:5A:71	HLK-RM04(V1.78(Jul 23 2013))		
1	192.168.1.181	AC:A2:13:85:5A:D9	HLK-RMU4(V1.78(Jul 23 2013))		



Double click IP (192.168.1.101) to open the web configure page(<u>http://192.168.1.101</u>)
 Default login ID / Password : admin / admin



4. Default Net Mode is the same as the following. User can modify Net Mode and other parameters. If device cannot communicate properly after setting, user can reset MDNET-5W with initial button.

HLK-RM04 Se	rial2Net Settii	ngs
NetMode:	ETH-SERIAL	•
IP Туре:	STATIC V	
IP Address:	192.168.1.101	
Subnet Mask:	255.255.255.0	
Default Gateway:	192.168.1.254	
Primary DNS Server:		
Secondary DNS Server:		
	Current	Updated
Serial Configure:	230400,8,n,1	230400,8,n,1 *
Serial Framing Lenth:	1050	1050
Serial Framing Timeout:	10 milliseconds	10 milliseconds (< 256, 0 for no timeout)
Network Mode:	server	Server 🔻
Remote Server Domain/IP:	192.168.11.245	192.168.11.245
Locale/Remote Port Number:	5001	5001
Network Protocol:	tcp	TCP V
Network Timeout:	0 seconds	0 seconds (< 256, 0 for no timeout)
		Apply Cancel

Communication Parameters	Factory Default
Serial Configure	230400,8,n,1
Serial Framing Length	1050
Locale/Remote Port Number	5001

IV.Ethernet / RS485 converter (Default)

1. Network module setting:

Default Ethernet (DHCP) + Wi-Fi AP mode		HLK-RM04 Serial2Net Settings			
ETH-SERIAL	Ethernet only (Factory Default)	NetMode:	Default •		
WIFI(CLIENT)-SERIAL	Wi-Fi client mode	SSID:	ETH-SERIAL		
WIFI(AP)-SERIAL	Wi-Fi AP mode	Password:	WIFI(AP)-SERIAL		

ETH-SERIAL : Factory default is ETH-SERIAL.

When user modify the IP and click on Apply button, device will reboot and apply the setting after 30 seconds.

HLK-RM04 Serial2Net Settings				
NetMode:	ETH-SERIAL V			
IP Type:	STATIC V			
IP Address:	192.168.1.206			
Subnet Mask:	255.255.255.0			
Default Gateway:	192.168.1.254			
Primary DNS Server:				
Secondary DNS Server:				

2. Initial button:

Press initial button 15 seconds until Link status (Ethernet) LED blinking.



Wait 2 minutes, MDNET-5W will reset to factory default.



3. RS485 baud rate setting

Execute V7 tools to connect MDNET-5W with correct IP and port.

🔞 V7 Tools V0780 <u>F</u> ile <u>L</u> anguage <u>A</u> bout			- 🗆 X
COM NET			Close
IP: 192.168.1.101	Port: 5001		Connect
I Response □ ID 1	▼ S/N 00000000 □ PIN 0	000 🔽 CRC 🗆 BCC Encrypt(None) Direct
COMMON COMM. 86 Seri	al BT Card Controller CARD LOG SEC	URITY COMMAND APDU MIFARE BLC	оск
Get S/N	Model:	S/N:	
Get ID	ID: Special:	Set ID	ID: 1
Get Version	Name:	F/W version:	
Warm Start			
Initial			
		Port close	Default

Click Get S/N, and select "COMM." Tab to configure RS485 parameters.

🕢 V7 Tools V0780		– 🗆 X
<u>F</u> ile <u>L</u> anguage <u>A</u> bout		
COM NET		Close
IP: 192.168.1.101	Port 5001	Connect
Response □ ID 1	Image: S/N 16080005 Image: PIN 0000 Image: PIN Encrypt(None) Direct
COMMON COMM. DI/DO F	READER KEYPAD 86 Serial BT Card Controller CARD LOG = CLOCK/MASTEF	
Set Baudrate	19200, E, 8, 1 115200, N, 8, 1 Speed: 115200 ▼ No Parity ▼ 8 Data Bits ▼ 1 Stop Bits	Get
Set Comm. Delay	Time-out: 10 ms TX Delay: 20 x0.1ms RX Delay: 10 x0	1.1ms 00 Get
Auto Mode Engineer Mode	Scan Device	
	Mode: EN DID S/N PIN ASC	√7
Auto Mode	Encrypt None	Get
	Delay: 10 x100ms Heartbeat: 0 x100ms	
	Connect IP: 192.168.1.101:5001	Default

V. Wi-Fi / RS485 converter

1. Execute "NET_Discover_V0110.exe" and press

Discover

to search MDNET-5W product.

2. Factory default IP is "192.168.1.101". User can check the MAC address from product sticker with IP to confirm the device.

	NET_	Discover Version	1.1		
1	NUM	IP	MAC	INFO	Discover
3	1	192,168,1,221	44:33:4C:C4:8A:26	HLK-RM04(V1.78(Jul 23.2013))	
2		192.168.1.101	AC:A2:13:B5:5A:71	HLK-RM04(V1.78(Jul 23 2013))	
1		192.168.1.181	AC:A2:13:B5:5A:D9	HLK-RMU4(V1.78(Jul 23 2013))	
					1



Double click IP (192.168.1.101) to open the web configure page(<u>http://192.168.1.101</u>)
 Default login ID / Password : admin / admin



4. Change net mode to "Default" to enable Wi-Fi scan function.

HLK-RM04 Serial2Net Settings				
NetMode:	Default 🔹			
SSID:	HI-LINK_0508			
Password:	12345678			

5. Execute "NET_Discover_V0110.exe" to search MDNET-5W again.



6. Change net mode to Wi-Fi client mode.

HLK-RM04 Serial2Net Settings				
NetMode:	WIFI(CLIENT)-SERIAL ▼			
SSID:	HI-LINK_0508	* Scan		
Encrypt Type:	WPA2 AES 🔹			
Password:	12345678			
IP Type:	DHCP V			

7. Click "Scan" button to scan AP in range of MDNET-5W and select one to connect.

	Ch	SSID	BSSID	Security	Signal(%)	W-Moe	ExtCh	NT
0	1	SY-INT-1	04:8d:38:a4:02:39	WPA1PSKWPA2PSK/TKIPAES	100	11b/g/n	ABOVE	In
0	1	HI-LINK_5A95	ac:a2:13:b5:5a:94	WPA1PSKWPA2PSK/AES	65	11b/g/n	NONE	In
0	1	HI-LINK_5AAF	ac:a2:13:b5:5a:ae	WPA1PSKWPA2PSK/AES	50	11b/g/n	NONE	In
0	1	P880	cc:5d:4e:e5:2d:2d	WPA2PSK/AES	29	11b/g/n	NONE	In
0	6	RC-INT-1	c8:3a:35:5b:93:90	WPAPSK/AES	10	11b/g/n	NONE	In
0	6	Chance-HTC-E9+	82:01:84:11:e2:fc	WPA2PSK/AES	29	11b/g/n	ABOVE	In
\bigcirc	9	SY-INT-2	04:8d:38:a4:02:42	WPA1PSKWPA2PSK/TKIPAES	96	11b/g/n	ABOVE	In
0	9	HI-LINK_5A87	e8:de:27:40:4d:3e	WPA1PSKWPA2PSK/TKIPAES	100	11b/g/n	BELOW	In
0	11	SY-GUEST-2	04:8d:38:a4:02:81	WPA1PSKWPA2PSK/TKIPAES	70	11b/g/n	BELOW	In
0	11	SY-GUEST-1	04:8d:38:a4:02:30	WPA1PSKWPA2PSK/TKIPAES	91	11b/g/n	BELOW	In
		Cancel		Rescan		Apply		

- 8. Click apply and wait 30 seconds to reboot MDNET-5W
- 9. Check Wi-Fi status LED is blinking.



10. Try to communicate RS-485 device with Wi-Fi network.

PS: Wi-Fi MAC address is Ethernet MAC subtract 1. Ex. Ethernet MAC : AC:A2:13:B5:5A:B5 · Wi-Fi MAC : AC:A2:13:B5:5A:B4



VI.Wi-Fi / Ethernet converter

1. Set MDNET-5W to factory default first.

Press initial button 15 seconds until Link status (Ethernet) LED blinking.



Wait 2 minutes, MDNET-5W will reset to factory default.

- 2. Execute "NET_Discover_V0110.exe" and press Discover to search MDNET-5W product.
- 3. Factory default IP is "192.168.1.101". User can check the MAC address from product sticker with IP to confirm the device.

NET_Discover Version 1.1						
NUM	IP	MAC	INFO		Discover	
3	192,168,1,221	44:33:4C:C4:8A:26	HLK-RM04(V1.78(Jul 23 2013))			
2	192.168.1.101	AC:A2:13:B5:5A:71	HLK-RM04(V1.78(Jul 23 2013))			
1	192.168.1.181	AC:A2:13:85:5A:D9	HLK-RMU4(V1.78(Jul 23 2013))			
					_	



Double click IP (192.168.1.101) to open the web configure page(<u>http://192.168.1.101</u>)
 Default login ID / Password : admin / admin



📄 HLK-RM04 Web Configure 🗙 🔽	2	
← → C ▲ 192.168.1.1	01/Serial2Net.asp	
Hi-Linl	k™	WIRELESS-N ROUTER IEEE 802.
English 简体中文	HLK-RM04	Serial2Net Settings
HLK-RM04 Serial2Net Settings Advance Settinos	NetMode:	ETH-SERIAL •
Serial2Net UART 2 Settings	IP Type:	STATIC •
 Administration 	IP Address:	192.168.1.101
	Subnet Mask:	255.255.255.0



5. Click "Hi-Link" logo to open "http://192.168.1.101/home.asp"

HLK-RM04 Web Configu	_	_	_	
← → C ♠ 🗋 192.168.1.10	1/Serial2Net.asp			☆ 〓
Hi-Link	TM V	VIRELESS-N	I ROUTER IEEE 8	802.11N
English 简体中文	HI K-RM04 S http://192.168.	erial2Net Setti 1.101/home.as		
HLK-RM04	NetMode:	ETH-SERIAL		
Advance Settings Serial2Net UART 2 Settings	IP Type:	STATIC V		
Administration	IP Address:	192.168.1.101		
	Subnet Mask:	255.255.255.0 192.168.1.254 192.168.1.254		
	Default Gateway:			
	Primary DNS Server:			
	Secondary DNS Server:	8.8.8.8		
		Current	Updated	
	Serial Configure:	230400,8,n,1	230400,8,n,1	***
	Serial Framing Lenth:	1050	1050	
	Serial Framing Timeout:	10 milliseconds	10 milliseconds (timeout)	< 256, 0 for no
	Network Mode:	server	Server ▼	
	Remote Server Domain/IP:	192.168.11.245	192.168.11.245	
	Locale/Remote Port Number:	5001	5001	
	Network Protocol:	tcp	TCP V	
	Network Timeout:	0 seconds	0 seconds (< 25 timeout)	6, 0 for no
			Apply Cancel	
192.168.1.101/home.asp				



6. Setup operation mode to "Bridge" mode and "enable AP Client"

Click apply and wait 30 seconds to reboot MDNET-5W



 MDNET-5W's Ethernet IP address will change to "192.168.16.254" Please configure computer's IP address to "192.168.16.75"

網際網路通訊協定第 4 版 (TCP/IPv4) - 內	容	×						
一般								
如果您的網路支援這項功能,您可以取得自動指派的 IP 設定。否則,您必須 詢問網路系統管理員正確的 IP 設定。								
○ 自動取得 IP 位址(○)								
● 使用下列的 IP 位址(S):								
IP 位址():	192 . 168 . 16 . 75							
子網路遮罩(<u>U</u>):	255 . 255 . 255 . 0							
預設閘道(<u>D</u>):	192.168.16.254							
○ 自動取得 DNS 伺服器位址(B)								
● 使用下列的 DNS 伺服器位址(E):		-						
慣用 DNS 伺服器(P):								
其他 DNS 伺服器(<u>A</u>):	· · ·							
□ 結束時確認設定(L)	進階⊘							
	確定 取消							



- Execute "NET_Discover_V0110.exe" and press Discover to search MDNET-5W(192.168.16.254)
 Double click IP to open the web configure page.
- 9. Click "Hi-Link" log to open "http://192.168.16.254/home.asp"
- 10. Go to "Internet Settings" \ "LAN" to Disable DHCP.

Click Apply to finish setting.

English 简体中文 繁体中文	繁体中文 Local Area Network (LAN) Settings							
Wizard	wish.	wish.						
Operation Mode	LAN Setup							
 Internet Settings WAN LAN DHCP clients VPN Passthrough Advanced Routing Wireless Settings 								
	IP Address	192.168.16.254						
	Subnet Mask	255.255.255.0						
	LAN 2	🗢 Enable 💿 Disable						
	LAN2 IP Address							
 Firewall Administration 	LAN2 Subnet Mask							
	MAC Address	20:F4:1B:92:CD:18						
	DHCP Туре	Disable 🔻						
	802.1d Spanning Tree	Disable ▼						
	LLTD	Disable ▼						
	IGMP Proxy	Disable ▼						
	UPNP	Disable ▼						
	PPPoE Relay	Disable ▼						
	DNS Proxy	Disable ▼						
		Apply Cancel						



11. Go to "Wireless settings" \ "AP Client" to setup AP's SSID, password.

🕒 HLK-RM04 Web Configu 🗙		_	_	_	_	-	dia	ddia (c		23
← → C ㎡ 🗋 192.168.1	16.254	/home.asp							5	Ξ
	k ™	Client For	WIRELE	SS-N ROUTER IE	EE 80)2.11	N			
2 HLK-RM04	You	could configure	AP Client parame	ters here.						
Operation Mode	AP CI	ient Parameters								
Internet Settings	SSID		SY-INT-1							
DHCP clients	MAC A	Address (Optional)								
 VPN Passthrough Wireless Settings 	Security Mode		WPA2PSK V	WPA2PSK V						
Basic	Encryption Type		TKIP •				-			
→ Security	Pass Phrase		12345678	12345678						
WDS WPS	Apply Cancel SCAN									
AP Client	Cite C.		572	5.0° 272 83						
Station List Statistics	Ch	SSID	BSSID	Security	Signal(%)	W-Moe	ExtCh	NT		
Administration	1	SY-INT-1	04-8d-38-a4-02-39	WPA1PSKWPA2PSK/TKIPAES	96	11h/a/n	ABOVE	In		
append the second second second second	1	HI-LINK 5AAF	ac:a2:13:b5:5a:ae	WPA1PSKWPA2PSK/AES	55	11b/a/n	NONE	In		
	1	HI-LINK 8A27	44:33:4c:c4:8a:26	WPA1PSKWPA2PSK/AES	39	11b/g/n	ABOVE	In		
	9	HI-LINK 5A87	e8:de:27:40:4d:3e	WPA1PSKWPA2PSK/TKIPAES	100	11b/g/n	BELOW	In		
	9	SY-INT-2	04:8d:38:a4:02:42	WPA1PSKWPA2PSK/TKIPAES	100	11b/g/n	ABOVE	In		
	11	SY-GUEST-2	04:8d:38:a4:02:81	WPA1PSKWPA2PSK/TKIPAES	55	11b/g/n	BELOW	In		
	11	SY-GUEST-1	04:8d:38:a4:02:30	WPA1PSKWPA2PSK/TKIPAES	91	11b/g/n	BELOW	In		
	11	CAP300-guest	80:1f:02:bd:74:8a	WPAPSK/TKIP	10	11b/g	NONE	In		

Click Apply to finish setting.

12. Try to communicate Ethernet device with Wi-Fi network.