UHF RFID 機器人讀寫器 AT Command

Model : WS-RFIDBY



Installation Direction (安裝在牆壁上時)



100mm 100mm 100mm INF RFID UHF RFID READER Design in Taiwan INF RFID

兩個螺絲孔之間的距離為 47.5mm



WS-RFIDBY-TCP (網線插入、電源插入)

1. DC 12V 2A



RS-232 及 RS-485 接線方式 (WS-RFIDBY-RS232 及 WS-RFIDBY-RS485)



燈號指示說明

連接指示燈:有連接網路時燈號恆亮 狀態指示燈:待機狀態=綠燈恆亮 讀取 Tag=藍燈恆亮 2 秒 設備異常=紅燈恆亮 更新模式=綠燈閃爍



網路設定方式 (WS-RFIDBY-TCP Only)

- 1. 將 WS-RFIDBY-TCP 插入電源及網路線 (連接電腦或區域網路)。
- 2. 執行"Wenshing All in one NET tools" , 開啟後畫面如下:

meters:			Setup via COM		
ork mode:	MOD-SERVER-RTU 🔻	Enable DHCP	Read via COM	Setup via COM	
efault Gateway:	192.168.001.001	Get Device IP	Read Factory	Set Factory	
ubnet mask:	255.255.255.000	Get Gateway IP	Restore Factory	Factory Setting	
Device IP:	192.168.001.002	Get DNS Server	Setup via NET		
Device port:	10006		Search in LAN	Setup via NET	
Mac Address:	00-A5-89-C2-61-63	Enable DNS	Read Factory	Set Factory	
Destination IP:	192,168.001.003	First DNS server	Restore Factory	Factory Setting	
Destination Port:	10006	202,096.123.223	Opline Device		
Baud Rate(bps):	115200 👻 💟	Second DNS server	Device IP Mac Addr	ess Version Type	
Data/Parity/stop:	8 🔻 NONI 🔻 🛛 🐨	202.096.123.223			
Delay Send(ms):	50 🔻 ms (毫秒) 📝	DNS Website			
D: 01 🗖 🕬	nnect 🔲 data 🔲 reset 🔲	sha.iejy.net			
Version : V42	Type NNZN				
	Land Defende	Cours Da fault			

3. 搜尋區域網路內的設備,點選"Search in LAN"按鍵:

ameters:				Setup via COM			
ork mode:	MOD-SERVER-RTU 🔻	Enable DHCP		Read via COM Setup via COM			
fault Gateway:	192.168.001.001	Get Device IP		Read Factory Set Factory			
bnet mask:	255.255.255.000	Get Gateway IP		Restore Factory Factory Setting			
vice IP:	192.168.001.002	Get DNS Server		Setup via NET			
vice port:	10006			Search in LAN Setup via NET			
ac Address:	00-A5-89-C2-61-63	Enable DNS		Read Factory Set Factory			
stination IP:	192,168.001.003	First DNS server		Restore Factory Factory Setting			
stination Port:	10006	202.096, 123, 223		Online Device			
ud Rate(bps):	115200 👻 📝	Second DNS server		Device IP Mac Address Version Type 192, 168.003.080 00-A6-9C-A0-0B-08 V20 NNZN-TCP232			
ata/Parity/stop:	8 🕶 NONI 🕶 🛛 👻	202.096.123.223					
ay Send(ms):	50 🔻 ms (毫秒) 📝	DNS Website					
: 01 🗖 ca	onnect 🔲 data 📄 reset 📄	sha.iejy.net					
	Type NNZN						

4. 搜尋到設備後會在下面顯示出該設備的 IP 位置:

(Online Device				
	Device IP	Mac Address	Version	п Туре	
	192.168.003.080	00-A6-9C-A0-0B-08	V20	NNZN-TCP232	

5. 讀取網路設定參數,點擊兩次搜尋到的設備 IP 後會自動讀取目前的設定並在左邊 "Parameters"顯示:

arameters:					Setup	via COM	2
work mode:	TCP-CLIENT -		Enable DHCP			Read via COM	Setup via COM
Default Gateway:	192.168.003.250	1	Get Device IP			Read Factory	Set Factory
Subnet mask:	255.255.255.000		Get Gateway IP	[V]		Restore Factory	Factory Setting
Device IP:	192.168.003.080		Get DNS Server		Setup	via NET	
Device port:	08080	1				Search in LAN	Setup via NET
Mac Address:	00-A6-9C-A0-0B-08		Enable DNS			Read Factory	Set Factory
Destination IP:	192.168.003.100	7	First DNS server			Restore Factory	Factory Setting
Destination Port:	08080	v 00	0.000.000.000		Online	Device	
Baud Rate(bps):	115200 👻	2	Second DNS server		De	vice IP Mac Addre	ss Version Type
Data/Parity/stop:	8 🕶 NONI 🕶 1 💌		00.000.000.000	$[\hspace{15cm} / \hspace{15cm}]$	192.1	68.003.080 00-A6-9C-	A0-0B-08 V20 NNZN-TCP23
Delay Send(ms):	50 v ms (毫秒)		DNS Website				
ID: 1 🗖 🔿	onnect 🕅 data 🕅 reset		er				
Version: V20	Type NNZN-TCP232						
	D i load Defa	ult l	Save Default				

6. 修改網路設定參數,直接在左邊"Parameters"修改適合的設定,並按"Setup via NET"進行修改(不可使用 Port 5978):

ameters:				Setup via COM	
ork mode:	TCP-CLIENT	Enable DHCP		Read via COM	Setup via COM
efault Gateway:	192.168.003.250	Get Device IP		Read Factory	Set Factory
ubnet mask:	255,255.255.000	Get Gateway IP	$\boxed{\checkmark}$	Restore Factory	Factory Setting
evice IP:	192.168.003.099	Get DNS Server		Setup via NET	
Device port:	5678	2		Search in LAN	Setup via NET
Mac Address:	00-A6-9C-A0-0B-08	Enable DNS		Read Factory	Set Factory
Destination IP:	192.168.003.100	First DNS server		Restore Factory	Factory Setting
estination Port:	5678	000.000.000		Online Device	
Baud Rate(bps):	115200 👻 [7 Second DNS server		Device IP Mac Addr	ess Version Type
Data/Parity/stop:	8 🔻 NONI 🔻 1 🔻	000.000.000	\bigtriangledown	192,168.003.080 00-A6-90	-A0-08-08 V20 NNZN-TCP2
Delay Send(ms):	50 ▼ ms (毫秒) [DNS Website			
ID: 1	onnect 🔲 data 🔲 reset 🛽	eer			
/ersion: V20	Type NNZN-TCP232				
	Ludorful				

7. 修改成功則會跳出下列提示:



8. 重新啟動,將 WS-RFIDBY-TCP 設備拔除電源再重新插上,再次點選 "Search in LAN"按鍵並點擊兩次搜尋到的設備 IP 以讀取網路設定參數,確認網路設定是否正確:

arameters:					Setup via COM	
work mode:	TCP-CLIENT	•	Enable DHCP		Read via COM	Setup via COM
Default Gateway:	192.168.003.250		Get Device IP		Read Factory	Set Factory
Subnet mask:	255,255,255,000		Get Gateway IP	$[\mathcal{J}]$	Restore Factory	Factory Setting
Device IP:	192.168.003.099		Get Subnet Mask		Setup via NST	
Device port:	05678				Search in LAN	Setup via NET
Mac Address:	00-A6-9C-A0-0B-08		Enable DNS		Read Factory	Set Factory
Destination IP:	192.168.003.100	\checkmark	First DNS server		Restore Factory	Factory Setting
Destination Port:	05678		000.000.000.000		Online Device	
Baud Rate(bps):	115200	- 1	Second DNS server		Device IP Mac Add	ress Version Type
Data/Parity/stop:	8 - NONI - 1	- 🗸	000.000.000.000	$\overline{\vee}$	192.168.003.099 00-A6-9	C-A0+0B+08 V20 NNZN-TCP2
Delay Send(ms):	50 🔻 ms (毫秒)	[]	DNS Website			
ID: 1	onnect 🔲 data 🔲 res	et 📃	eer			
Version: V20	Type NNZN-TCP232	Ĩ				
		c 11				

PC 有線網路設定方式 (WS-RFIDBY-TCP Only)

1. 設定 PC 網路參數,依照所設定的參數修改 PC 端對應的設定:

🕒 Wenshing All in	one NET tools			Internet Protocol (TCP/IP) 內容	<u>? ×</u>
Parameters:			Setup via C	一般	
work mode:	TCP-CLIENT 🗾 📈	Enable DHCP	Re	如果您的網路支援這項功能,您可以取得E	自動指派的 IP 設定。否
Default Gateway:	192.168.003.250	Get Device IP	Ri	則,您必須詢問網路系統管理員正確的 IP	設定。
Subnet mask:	255.255.255.000	Get Gateway IP	7 Rei	C 自動取得 IP 位排(0)	
Device IP:	192.168.003.099	Get Subnet Mask		● 使用下列的 IP 位址(2):	
Device port:	05678	I decidido perver	Secop no ni	IP 位址①: 192	. 168 . 3 . 100
Mac Address:	00-A6-9C-A0-0B-08	Enable DNS	R	子網路遮罩(U): 255	. 255 . 255 . 0
Destination IP:	192.168.003.100	First DNS server		預設閘道①): 192	. 168 . 3 . 250
Destination Port:	05678	000.000.000.000		€ 自動取得 DNS 伺服器位址(B)	
Baud Rate(bps):	115200	Second DNS server	Online Device Device IF	● 使用下列的 DNS 伺服器位址(E):	
Data/Parity/stop:		000.000.000	192.168.00	慣用 DNS 伺服器(P): 192	. 168 . 3 . 250
Delay Send(ms):	「」」」」 「」」」 「」」」 「」」」	TRIC ULLERS		其他 DNS 伺服器 (<u>A</u>):	
					進階(∀) ┃
Version : V20	Type NNZN-TCP232				確定取消
📕 Updata All Onlin	Load Default	Save Default			

2. 測試通訊, PC 端執行"TCP Server"軟體並設定對應的 Port 號,發送 AT 指令測試通訊是否正確 (不可使用 Port 5978):

				LOLAIL REPRESENT (A.2.9)	
			Settings	-Data Receive	
			卫 1	⊽Receive from 192.168.3.99 : 5678▼⊔	
🕒 Wenshing All in	one NET tools		TCP Server	+WenShing RFIDMini Host Reader 1.00	
Parameters:			卫 2 年 Local host IP		
, and motor bit		1-	192.168.3.100		
work mode:			卫 3 Local host por		
Default Gateway:	192.168.003.250		5678		
Subnet mask:	255.255.255.000		l l l l l l l l l l l l l l l l l l l		
Device IP:	192.168.003.099		Disconnect		
Device port:	05678		Recv Options		
porteo porte	100070	IX.	🗖 Receive to file		
Mac Address:	00-A6-9C-A0-0B-08		🥅 Add line return		
Destination IP:	192.168.003.100	N	🔲 Receive As HEX		
Destination Port:	05678	3	🗖 Receive Pause		
Baud Rate(bps):	115200	ସ [Save Clear	ь.	
Data/Parity/stop:	8 • NONE • 1 •		Send Options		
Delay Sand(ma)		17	🗖 Data from file		
Delay Send(ms):	150 ms (4249)	IV	Auto Checksum		
	onnect 🔽 data 🗖 res	et 🗖	Auto Clear Input		
Version : V20	Type NNZN-TCP232		Send As Hex	Peers: All Connections	
Lindata All Onlin	e Device Load De	fault	Totornal 1000		
			Load Clear	AT+VER	Send
			💣 Ready!	Send : 8 Recv : 37	Reset

Output Data Format

Byte1 = 0x53 Suggesting output data is Tag TID; Data format reference as below :

Byte 0	Byte 1	Byte 2	Byte 3~N	Byte N+1
0x02	0x53	Length of data being read	Tag TID	0x03

Byte1 =0x54 Suggesting output data is Tag EPC ; Data format reference as below :

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4~6	Byte 7	Byte 8~9	Byte 10~N	Byte N+1
0.02	0254	Length of data being	RSSI value being	Frequency being received and	PC+EPC	PC	Tag EDC	0v02
0702	0734	read	received	Antenna port	Length	(Tag assortment)	Idg LFC	0x03

Byte 4 is frequency low byte

Byte 5 is frequency middle byte

Byte 6 is frequency high byte and antenna port

When bit 7=1 the frequency value is 0E, bit 7=0 the frequency value is 0D

Bit 0~5 is received antenna port, antenna 1=0 0000 · antenna 2=0 0001 · antenna 3=0 0010 · antenna 4=0 0011

AT Command

"Newline" for each Command (請注意:發送所有指令之前必須先停止掃描)

指令中 0001 代表設備的 ID Address,由此 ID 可設定指定設備的資料或指定該設備傳回資料,參數範圍從 0001~9999:

#	AT Command	RFID Reader Return
1	AT+0000-FindDeviceID	
T		+0000-FindDeviceID:0001
C	AT+0001-DeviceID:0002	
Z		+0001-DeviceID:0002
3	AT+0001-Scan:0	
		+0001-Scan:0
Л	AT+0001-VER	
4		+WenShing RFIDBY4 Reader 1.00
5	AT+0001-BuzzTime:3	
		+0001-BuzzTime:3
6	AT+0001-BuzzONOFF:0	
		+0001-BuzzONOFF:0
7	AT+0001-Reset	
		+0001-Reset

0	AT+0001-SetPower:30dBm	
8		+0001-SetPower:30dBm
9	AT+0001-Mode:S0	
		+0001-Mode:S0
1 0	AT+0001-SetQuery:SL=0,SS=0,TG=0,Q4	
		+0001-SetQuery:SL=0,SS=0,TG=0,Q4
1		
1	AT+0001-ReadDeviceMessage	+0001-ReadDeviceMessage
		+SeI=U

		+Session=1
		+Qbegin=4
12	AT+0001-Read:1,02,0000000,06,201309248726030001020022	
		+0001-Read:1,02,0000000,06,201309248726030001020022<00> →201309248726030001020022 或 +0001-Read:1,02,00000000,06,201309248726030001020022<09>

1 3 AT+0001-Write:3,00,0000000,201309248726030001020022,098765432109 87654321

AT+0001-Write:3,00,00000000,201309248726030001020022,09876543210987654321

Internet Updata

1. 執行"Wenshing All in one NET tools",開啟後畫面如下:

arameters:				Setup via COM		
work mode:	MOD-SERVER-RTU 🔻 🗸	Enable DHCP		Read via COM	Setup via COM	
Default Gateway:	192.168.001.001	Get Device IP		Read Factory	Set Factory	
Subnet mask:	255.255.255.000	Get Gateway IP		Restore Factory	Factory Setting	
Device IP:	192.168.001.002	Get DNS Server		Setup via NET		
Device port:	10006			Search in LAN	Setup via NET	
Mac Address:	00-A5-89-C2-61-63	Enable DNS		Read Factory	Set Factory	
Destination IP:	192.168.001.003	First DNS server		Restore Factory	Factory Setting	
Destination Port:	10006	202.096.123.223		Online Device		
Baud Rate(bps):	115200 🔻 💟	Second DNS server		Device IP Mac Address Version Type		
Data/Parity/stop:	8 🕶 NONI 🕶 🛛 💌	202.096.123.223				
Delay Send(ms):	50 🔻 ms (毫秒) 📝	DNS Website				
ID: 01 🗖 🕬	onnect 🔲 data 🔲 reset 🔲	sha.iejy.net				
Version: V42	Type NNZN					
	e Device	Save Default				

2. 搜尋區域網路內的設備,點選"Search in LAN"鍵:

rameters:					Setup via COM	· · · · · · · · · · · · · · · · · · ·	
work mode:	MOD-SERVER-RTU		Enable DHCP		Read via COM	Setup via COM	
Default Gateway:	192.168.001.001	V	Get Device IP Get Gateway IP Get Subnet Mask Get DNS Server		Read Factory	Set Factory	
Subnet mask:	255.255.255.000			V	Restore Factory	Factory Setting	
Device IP:	192.168.001.002	V			Setup via NET		
Device port:	10006	V			Search in LAN	Setup via NET	
Mac Address:	00-A5-89-C2-61-63		Enable DNS		Read Factory	Set Factory	
Destination IP:	192.168.001.003	1	First DNS server		Restore Factory	Factory Setting	
Destination Port:	10006	$\overline{\mathbf{v}}$	202.096.123.223		Online Device		
Baud Rate(bps):	115200	•	Second DNS server		Device IP Mac Address	s Version Type	
Data/Parity/stop:	8 • NONI • 1 •		202.096.123.223		192.168.003.080 00-A5-89-C2-61-65 V20 NNZN-TCP23		
Delay Send(ms):	50 🔻 ms (毫秒)	2	DNS Website				
ID: 01 🗖 co	nnect 🔲 data 🕅 rese	et 🕅	sha.iejy.net				
Version : V42	Type NNZN	T)					
	a i load Da	fault	Save Default				

3. 搜尋到設備後會在下面顯示出該設備的 IP 位置:

4	Online Device				
	Device IP	Mac Address	Version	n Type	
	192.168.003.080	00-A5-89-C2-61-65	V20	NNZN-TCP232	

4. 讀取網路設定參數,點擊兩次搜尋到的設備 IP 後會自動讀取目前的設定並在左邊 "Parameters"顯示出來:

Parameters:					Setup	via COM	
work mode:	TCP-CLIENT		Enable DHCP			Read via COM	Setup via COM
Default Gateway:	192,168,003,250	$\overline{\mathbf{v}}$	Get Device IP	V		Read Factory	Set Factory
Subnet mask:	255.255.255.000		Get Gateway IP			Restore Factory	Factory Setting
Device IP:	192.168.003.080	V	Get Subnet Mask		Setup via NET		
Device port:	08080	$\overline{\vee}$				Search in LAN	Setup via NET
Mac Address:	00-A5-89-C2-61-65		Enable DNS			Read Factory	Set Factory
Destination IP:	192.168.003.100		First DNS server			Restore Factory	Factory Setting
Destination Port:	08080		000.000.000.000		Opline	Device	
Baud Rate(bps):	115200	- 2	Second DNS server		De	vice IP Mac Addre	ss Version Type
Data/Parity/stop:	8 • NONI • 1		000.000.000.000	\square	192.1	68.003.080 00-A5-89-	C2-61-65 V20 NNZN-TCP232
Delay Send(ms):	50 🔻 ms (毫秒)	$\boxed{\checkmark}$	DNS Website				
	onnect 🔲 data 🕅 res	et 🔳	eer				
Version : V20	Type NNZN-TCP232						
		24 200					

5. 修改更新主機的工作模式、IP 位置、Device port,並按"Setup via NET"鍵進行修改:

	N.	10				0.1
work mode:	UDP-CLIENT	1	Enable DHCP		Read via COM	Setup via COM
Default Gateway:	192.168.003.250		Get Device IP		Read Factory	Set Factory
Subnet mask:	255,255,255,000		Get Gateway IP	\square	Restore Factory	Factory Setting
Device IP:	192.168.003.080		Get DNS Server		Setup via NET	
Device port:	5978				Search in LAN	Setup via NET
Mac Address:	00-AC-FB-16-71-55		Enable DNS		Read Factory	Set Factory
Destination IP:	60.251.71.55		First DNS server 000.000.000		Restore Factory	Factory Setting
Destination Port:	5978			Online Device		
Baud Rate(bps):	115200		Second DNS server		Device IP Mac Addres	s Version Type
Data/Parity/stop:	8 ~ NONI ~ 1 ~	/ 🗹	000.000.000.000		192.168.003.080 00-AC-FB-1	6-71-55 V22 NNZN-TCP2
Delay Send(ms):	50 ~ ms (毫秒)		DNS Website			
	nnect 🗌 data 🗌 rese	et 🗌	eer			
Version : V22	Type NNZN-TCP232					
Version : V22	Type NNZN-TCP232					

6. 修改成功則會跳出下列提示:



- 7. 重新啟動,將 WS-RFIDBY 設備拔除電源再重新插上,開始更新時燈號由綠紅藍反覆交替變換並有聲音提示,更新成功後會重新啟動並進入待機 模式。
- 8. 使用"Wenshing All in ont NET tools"修改適合的網路設定,參考 PC 有線網路設定方式。

表1: Read/Write Error code

#	Туре	Code	Description
1	Command Error	0x17	命令幀中指令代碼錯誤
2	FHSS Fail	0x20	跳頻搜索頻道超時。所有頻道在這段時間內都被佔用
3	Inventory Fail	0x15	輪詢操作失敗。沒有標籤返回或者返回資料 CRC 校驗錯誤
4	Access Fail	0x16	Access 標籤失敗,有可能是 Access password 不對
5	Read Fail	0x09	讀標籤數據存數區失敗。標籤沒有返回或者返回資料 CRC 校驗錯誤
6	Read Error	0xA0 Error code	讀標籤資料存儲區錯誤。返回的代碼由0xA0及表3 Error Code得到。Error code信息詳見下表
7	Write Fail	0x10	寫標籤數據存數區失敗。標籤沒有返回或者返回資料CRC 校驗錯誤
8	Write Error	0xB0 Error code	寫標籤資料存儲區錯誤。返回的代碼由0xB0及表3 Error Code得到。Error code信息詳見下表
9	Lock Fail	0x13	鎖定標籤資料存數區失敗。標籤沒有返回或者返回資料CRC 校驗錯誤
10	Lock Error	0xC0 Error code	鎖定標籤資料存儲區錯誤。返回的代碼由0xC0及表3 Error Code得到。Error code信息詳見下表
11	Kill Fail	0x12	Kill 標籤失敗。標籤沒有返回或者返回資料 CRC 校驗錯誤
12	Kill Error	0xD0 Error code	Kill標籤錯誤。返回的代碼由0xC0及表3 Error Code得到。Errorcode信息詳見下表
例如]錯誤代碼回傳 <b3> 代表影</b3>	是表1第8項及表3	第2項,Write Error 寫標籤資料存儲區錯誤,指定的標籤資料存儲區不存在;或者該標籤不支援指

定長度的 EPC,比如 XPC

表 2:NXP G2X 標籤特有指令錯誤代碼

#	Туре	Code	Description
1	ReadProtect Fail	0x2A	ReadProtect指令失敗,標籤沒有返回資料或者返回資料CRC校驗錯誤
2	Reset ReadProtect Fail	Ox2B	Reset ReadProtect指令失敗,標籤沒有返回資料或者返回資料CRC校驗錯誤
3	Change EAS Fail	Ox1B	Change EAS指令失敗,標籤沒有返回資料或者返回資料CRC校驗錯誤
4	NXP 特有指令標籤返回 的錯誤代碼	0xE0 Error code	NXP特有指令標籤返回的錯誤代碼,錯誤代碼由0xE0及表3 Error Code得到



表 3: EPC Gen2 協定中標籤返回錯誤代碼

#	Туре	Code	Description			
1	Error-specific	0	其他所有錯誤			
2		3	指定的標籤資料存儲區不存在;或者該標籤不支援指定長度的EPC,比如XPC			
3		4	指定的標籤資料存儲區被鎖定並且/或者是永久鎖定,而且鎖定狀態為不可寫或不可讀			
4		В	標籤沒有收到足夠的能量來進行寫操作			
5	Non-specific	F	標籤不支持 Error-code 返回			