SYUR86N-H1 TCP/IP UHF+HF RFID standard Reader Manual



Version 01.12 2022/03/10



I. Features & Specification

Feature:

- Standard 86.0(W)x86.0(H) mm
- Multi-mode access control
- Support for full 840 to 960 MHz UHF RFID carrier frequency range to accommodate worldwide regulations
- Compatible with EPC Class 1 Gen 2;ISO-18000-6C
- Support ISO15693 / ISO14443A (Mifare) / ISO14443B / DESFire / NTAG203
- Provide protocol to develop.

Specification:

Frequency	840~960MHz + 13.56MHz			
Interface	RS485 / Wiegand / RS485 modbus			
Wiegand	Wiegand (support 26/32/34/35/37/42/66 bits)			
RS485 baud rate	19,200 bits/sec (4,800~460,800)			
Status Indicator	Tricolor LED(RGB) & Beeper			
IR Sensor	1 IR sensor for waving hand to access door (adjustable range 0~10cm)			
Digital Input	Up to 3			
	(1 DI+2 no-voltage DI share the same port with Wiegand)			
Digital Output	Up to 4			
	(2 Relay output+ 2 open collector DO share the same port with Wiegand)			
UHF Protocols	EPC Class 1 Gen 2; ISO 18000-6C			
UHF Read range	Up to 60 cm (depends on tag's antenna)			
HF Protocols	ISO15693 / ISO14443A / ISO14443B / DESFire / NTAG203			
HF Read range	Up to 5 cm			
ID	0001~9999			
Power Supply	9 ~28 VDC (12 VDC)			
Power consumption	1W~6W			
Operating temperature	-10°C to 60°C			
Dimensions (mm)	86 x 86 x 41.6mm			

II. Wiring Diagram



III. Network Parameter Setting

1. Execute "NET_Discover_V0110.exe" and press

to search SY86N series 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	in.	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>) 3. Default login ID / Password : admin / admin

登入 http://192.16 你国谅伺细好	58.1.101 ;之間的連線不晃私人連線
使用者名稱	admin
密碼	
	登入 取消



IP Туре	Static	Static 🗸
IP Addr	192.168.1.101	192.168.1.101
Mask	255.255.255.0	255.255.255.0
Gateway	192.168.1.254	192.168.1.254
Dns	192.168.1.254	192.168.1.254
AP Enable	Enable	Enable 🗸
AP SSID	SerialWiFi_0EA0	SerialWiFi_0EA0
AP EncType	WPA2AES	WPA2AES 🗸
AP Passwd	12345678	12345678
LAN IP Addr	192.168.16.254	192.168.16.254
LAN Mask	255.255.255.0	255.255.255.0
DHCP Server	Enable	Enable 🗸

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 NET module via Micro USB.

Settings	Network	Serial 0	Serial 1	
			Curren	t Updated
Baudrate			230400	230400
Data Widt	h		8	8 🗸
Parity			NONE	NONE 🗸
Stop Bit			1	1 🗸
Flow Cont	rol		Disable	Disable 🗸
Socket Pro	otocol Type		Tcp Se	Tcp Server 🗸
Locale Por	rt		5001	5001
Packet Fra	ming Lenth		1050	1050
Packet Fra	ming Timeout		3	3
Packet Fra	ming Interval		3	3
TCP Timed	out		0	0
Reconnect	t Interval		200	200
ТСР Кеер	Alive		1	1
TCP Max (Connect		100	100
Without d	ata Timeout		60	60

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

IV. Network Mode Switch

86N series device support 4 network modes: Default
 ETH(Ethernet)
 Wi-Fi(STA)

Default	Ethernet (DHCP) +Wi-Fi AP mode		
ETH	Ethernet only		
WIFI(STA)	Wi-Fi client mode		

1. ETH : Factory default is ETH-SERIAL. (Standard TCP/IP Reader)



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

	Current	Updated
Network Mode	Default	ETH 🗸
IР Туре	Static	Static 🗸
IP Addr	192.168.1.101	192.168.1.101
Mask	255.255.255.0	255.255.255.0
Gateway	192.168.1.254	192.168.1.254
Dns	192.168.1.254	192.168.1.254

2. WIFI(STA) : 86N can be set to communicate via Wireless AP without Ethernet.



Settings	Network	Serial 0	Serial 1	
		Current		Updated
Network N	lode	Default		WIFI(STA) 🗸
STA SSID		Delta-lo	Т	Delta-loT Scan
STA EncTy	pe	Open		Open 🗸
STA Passw	′d			
IP Type		Static		Static 🗸
IP Addr		192.168	1.101	192.168.1.101
Mask		255.255.	255.0	255.255.2
Gateway		192.168.	1.254	192.168.1.254
Dns		192.168	1.254	192.168.1.254

STA SSID: Enter the SSID from AP you will connect to network.

Scan: User can scan AP in range of 86N and select one to connect. But user cannot scan the AP after changing default network mode (Ethernet only) to Wi-Fi (Client). 86N need to power off / on to enable the scan function.

STA EncType : Select Encrypt type for AP connection.

Password: Enter password for AP.

IP Type: DHCP is default mode. If user has to setup a static IP, please select Static.

```
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
```

Default mode : Ethernet (DHCP) +Wi-Fi AP mode.
 It's Dual-Mode (Ethernet and Wi-Fi AP · but Ethernet only support DHCP.)





Settings	Network	Serial 0	Serial 1	
		Current		Updated
Network Mo	ode	Default		Default 🗸
IP Туре		Static		Static 🗸
IP Addr		192.168.1	.101	192.168.1.101
Mask		255.255.2	55.0	255.255.255.0
Gateway		192.168.1	.254	192.168.1.254
Dns		192.168.1	.254	192.168.1.254
AP Enable		Enable		Enable 🗸
AP SSID		SerialWiF	i_0EA0	SerialWiFi_0EA0
AP EncType)	WPA2AES	5	WPA2AES ~
AP Passwd		12345678	}	12345678
LAN IP Add	r	192.168.1	6.254	192.168.16.254
LAN Mask		255.255.2	55.0	255.255.255.0
DHCP Serve	er	Enable		Enable 🗸

AP SSID: Setup 86N device's SSID.

AP Passwd: 86N device's Wi-Fi password. (Default is 12345678)

V. USB Connection

Setup 86N parameter via Micro USB.



- 1. Install USB driver "CDC_USB_Driver_VCP_V1.4.0_Setup.exe"
- 2. System will generate a virtual COM port.

For example. Check port in device manager.(below picture is COM 3)



User also can update driver manually. The driver is saved in the folder that is same as following.

], 🗋 [], ≑		Virtual comport driver				×
File Home Share	e View					~ 🕜
🔄 🄄 🔹 🕆 🚺 C:\P	Program Files (x86)\STMicroelec	tronics\Software\Virtual comport driver	v C	Search Virtual c	comport driver	Q
				X G 🗋 🕽	K 🗸 🖃	
☆ Favourites	Name	Date modified	Туре	Size		
Desktop	🍌 Win7	7/27/2015 9:43 AM	File folder			
퉳 Downloads	退 Win8	7/27/2015 9:43 AM	File folder			
🖳 Recent places	version	10/19/2014 12:13	TXT File	3 1	(B	
✓ 3 items 1 item selected	2.31 KB					
Type: TXT File, Size: 2.31 KB, I	Date modified: 10/19/2014 12:13	PM		2.31 KB 🛛 👰	Computer	â

3. Get device Model information and serial number by using V8 Tools with correct COM port or Ethernet connection.

🔞 V8 Tools V0871				– 🗆 🗙
<u>File Language About</u>				
COM NET				Close
IP: 152.168.1.101	NET Search	Web Config Password =	dmin Port: 5001	2 Connect
I Response □ ID 1	□ S/N 20470011	PID/CID: 00000000	□ CRC-16 □ AES-128	Direct
COMMON COMM. DI/DO	READER CPU CARD Q	RCode KEYPAD SY86/	'SY2 BT Card CARD LOG	
3 Get S/N	4 Model: 06D6	SYQR86N-H1	S/N: 20470011	
Get ID	ID:	Special:	Set ID	ID: 1
Get Version	Name: SY	QR86N-H1	F/W version: 0861	
Warm Start				FLASH:
Initial	NET Initial(10 Sec)	NET IP:101	NET DHCP	Memory
			Connect IP: 192.168.1.101:50	01 Default

VI. V8 Tools Tool Parameter Setting

1. Basic:

🕢 V8 Tools V0871				– a ×			
<u>File Language About</u>							
COM NET				Close			
IP: 192.168.1.101	NET Search	Web Config Account = a Password =	admin admin Port: 5001	Connect			
🔽 Response 🗆 ID 🗍	S/N 20470011	PID/CID: 00000000	□ CRC-16 □ AES-128	Direct			
COMMON COMM. DI/DO	READER CPU CARD C	RCode KEYPAD SY86,	/SY2 BT Card CARD LOG				
Get S/N	Model: 06D0	6 SYQR86N-H1	S/N: 20470011				
Get ID	ID:	Special:	Set ID	ID: 1			
Get Version	Name: S	YQR86N-H1	F/W version: 0861				
Warm Start			FRAM:	FLASH:			
Initial	NET Initial(10 Sec)	NET IP:101	NET DHCP	Memory			
			Connect IP: 192.168.1.101:5(001 Default			

Basic: Get device serial number \ device ID and firmware version

Warm Start: Reboot 86N

Initial: Restore 86N to factory default (It is NOT including network setting).

NET Initial (6 sec): Restore network parameter of 86N to Default mode.



2. Reader

🖸 V8 Tools V0871	– 🗆 X
Eile Language About	Close
IP: 192.168.1.101 NET Search Web Config Account = admin Port: 5001 Password = admin Port: 5001	Connect
Response ID I S/N 20470011 PID/CID: 00000000 IC CRC-16 I AES-128 COMMON COMM. DI/DO READER CPU CARD QRCode KEYPAD SY86/SY2 BT Card CARD LOG C	Direct
Set Interface Interface: RS485 VIEGAND: 26 bits RS485: 64 bits	R-UID Get
Set Message Mode Active Blue(Power) LED Card LED: 30 x10ms Card BEEP: 30	x10ms Get
ISO14443A/B/ISO15693 Card test Same Card Delay: 10 x100ms Image: Green Mode Image: Green Mode Card Type: Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Card Type: Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Card Type: Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Card Type: Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Card Type: Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Card Type: Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode Image: Green Mode <td></td>	
Image: Use 7 Byte Image: CPU Set Card Mode Get Delay: 100 ms A Image: None Image: CPU Set Card Mode Get Image: CPU Image: CPU Image: CPU	uto Read
Command ok. Connect IP: 192.168.1.101:5001	Default

Set Interface: Setup reader's communication interface. Default is "RS485".

Set Message Mode: Click on the option active to enable message mode setting. User can setup 86N message display on panel.

Card LED: Time for read card LED ON, default is 30 x 10ms

Card Beep: Time for read card beep on, default is 30 x 10ms

ISO14443A/B/ISO15693 :

Same Card Delay: Setup time gap for reading the same card, default is 10 x100ms (1 second)

Green Mode: Slow down the card read speed to power saving.

Reset: Reset RF IC after read card.

Card Type: Choose card type to enable 86N read specific card.

UID(A): Read ISO14443A Card UID.

Block: Read Block data (Must disable other card type).

UID(B): Read ISO14443B Card UID.

GUID(B): Read the China second generation of resident identification card.

ISO15693: Read ISO15693 Card UID

7 byte: Read 7byte format Card UID

Card Test: Test the reader function.

Auto send reader mode

1. Un- Select "Controller Mode" and then click "Set DI/DO Mode" to disable controller mode.

<u>Language</u> <u>A</u> bout					
M NET					Close
IP: 192.168.1.241	NET Search	Web Config	Account = admin Password = admin	Port: 5001	Connect
⁷ Response 🗖 ID	1 I S/N 20470003	PID/CID:	00000000	IC-16 🔲 AES-128	Direct
MMON COMM. DI/E	00 READER CPU CARD C	RCode KEY	PAD SY86/SY2 B	Card CARD LOG	
ouch IR Sensor			-Xtive TAG/BT		
HF/LF Read: Auto	•		BT Xtive		
Touch Key: CALL	•		Xtive TAG: K	ey 💌 Exciter	ID: 0 0 I Mute
Touch Key: CALL	▼ IR Power: 10%	•	Xtive TAG: K	ey v Exciter) Gain: 13	ID: 0 0 □ Mute RSSI: 120
Touch Key: CALL IR Sensor: DI4 Set To	IR Power: 10%	Get	Xtive TAG: K	ey Exciter Gain: 13 Set Xtive TAG/BT	ID: 0 0 I Muta RSSI: 120
Touch Key: CALL IR Sensor: DI4 Set To /DO Mode	▼ IR Power: 10% uch IR Sensor	Get	Xtive TAG: K Same: 50	ey 💽 Exciter) Gain: 13 SetXtive TAG/BT	ID: 0 0 Mute RSSI: 120
Touch Key: CALL IR Sensor: DI4 Set To /DO Mode	IR Power: 10% uch IR Sensor	Get	Xtive TAG: K Same: 50	ey Exciter Gain: 13 SetXtive TAG/BT	ID: 0 0 Mute RSSI: 120
Touch Key: CALL IR Sensor: DI4 Set To /DO Mode Set DI/DO Mode	▼ IR Power: 10% uch IR Sensor RS485 Mode WIEGAND M □ Controller Mode	Get Get fode Control	Xtive TAG: K Same: 50	ey Exciter Gain: 13 Set Xtive TAG/BT DO Time (Unit0.1 Se	ID: 0 0 □ □ Mute RSSI: 120 Get
Touch Key: CALL IR Sensor: DI4 Set To /DO Mode Set DI/DO Mode		Get Get fode Control E BCard C Xtive	Ative TAG: K Same: 50	ey Caain: 13 Caain: 13 Set Xtive TAG/BT DO Time (Unit0.1 Se D01:50 D03	ID: 0 0 □ □ Mute RSSI: 120 Get
Touch Key: CALL IR Sensor: DI4 Set To /DO Mode Set DI/DO Mode Get	■ IR Power: 10% uch IR Sensor RS485 Mode WIEGAND M □ Controller Mode □ Patrol Mode □ RS485 Master Mode	Get Get fode Control BCard C Xtive Wieg	Xtive TAG: K Same: 50	ey Cain: Exciter Gain: 13 Set Xtive TAG/BT DO Time (Unit0.1 Se DO1: 50 D03 D02: 50 D04	ID: 0 0 □ I Mute RSSI: 120 Get ec) : 50 DO5: 50 DO6: 50

2. Select "EN" (means enable), "S/N", "CLR", "CRC" and set heartbeat to 50 (means 5 sec) and then click "Auto Mode" to finish configure.

🚺 V8 Tools V0871			– 🗆 🗙
ile <u>L</u> anguage <u>A</u> bout			12292000
COM NET			Close
IP: 192.168.1.241	NET Search Web Config Password = admir	n Port: 5001	Connect
I Response □ ID 1	S/N 20470003 PID/CID: 00000000	CRC-16 🗖 AES-128	Direct
COMMON COMM. DI/DO	READER CPU CARD QRCode KEYPAD SY86/SY2	BT Card CARD LOG C	ONTROLLER C
Set Baudrate	19200, E, 8, 1 115200, N, 1 Speed: 115200 ▼ No Parity ▼ 8 De	8,1 ata Bits 💽 1 Stop Bits	Get
Set Comm. Delay	Time-out: 10 ms TX Delay: 20 x0).1ms PX Delay: 10 x	0.1ms 00 Get
Auto Mode Engineer Mod	ə Scan Device NET Reboot		
Auto Mode	Mode: VEN LID VS/N LASC		V7 Get
	Delay: 10 x100ms Heartbe	at 50 ×100ms	∨5
	c	Connect IP: 192.168.1.241:5001	Default

3. **Execute "SYRIS TCP reader utility" to connect reader and start to read.**

(This software only work with <u>auto send reader mode</u>.)

Header's IP address								
192 . 100 . 1	241							
Port: 5001	e							
192.168.1.241 Dr: 111	L, DC: 0000-Last co	mmunication time: 2021	05/2411:58:59	5				Stup
P	Serial Nun	nber Carc type	DI	DO	Tag UID		 Time	-
192.168.1.241	20470003	0264	11111	1000	000000000078	5A	2021/05/24 11:57:53	
92168.1.241	20470003	0264	1111	1000	000000000078	55A	2021/05/24 11:57:48	
92.168.1.241	20475003	0263	1111	1000	000000000000011	234	2021/05/24 11.42.52	
192.168.1.241	20470003	0263	1111	1000	0000000000001	234	2021/05/24 11:34:52	
92.168.1.241	20470003	0263	1111	1000	00000000000011	234	2021/05/24 11:34:45	
92.168.1.241	20470003	0263	1111	1000	0000000000001	234	2021/05/24 11:34:43	
92.168.1.241	20473003	0263	1111	0000	00000000000001	254	2021/05/24 11:14:41	

Card type:

0101	EM tag UID	0211	Desfire tag UID
0201	Mifare tag UID	0261	QR code (DEC)
0202	Mifare block data	0262	QR code (HEX)
0203	ISO 14443B tag UID	0263	QR code (SID)
0204	ISO15693 tag UID	0264	QR code (SID date)
0241	UHF tag UID		