# SYRD245-1N-N 2.45 GHz RFID Network Reader User Manual



Version 1.3 2019/01/22



# I . Product Specification

Communication	2.45 GHz Support read and write
Frequency	2.40~2.48 GHz
Channel	316
RSSI	0-255
LQI	0-255
Programmable	Set Parameters
LED	Multi-LED visual indication
Ethernet	10/100 base-T Ethernet (RJ-45)
RS-232	RX, TX
Protocols	ICMP, ARP, IP, TCP(Server/Client), UDP, DHCP,
	HTTP
Baud Rate	2,400 bps ~ 115,200 bps
Power Input	7 VDC ~ 15 VDC
Action Current	MAX 500 mA @ 12 VDC
Operating Temperature	-20 °C to 65 °C, 5 to 95%RH
Storage Temperature	-30 °C to 85 °C, 5 to 95%RH
Dimension	107W x 138H x 30D (mm)



# ${\rm I\hspace{-1.5mm}I}$ . The Diagram of the System Connection

SYRD245-1N-N Network Reader can connect with 3 different interfaces : RJ-45 ,RS-232 and RS-485.



# SYRD245-1N-N connection to PC





### SYRD245-1N-N connection to RS-485

# IV. Setup MDNET-2

NDNET[2008-09-	09]								>
	No	Name	MAC Address	IP Address	Operating Mode	Hardware-Ver	Firmware-Ver	Status	
Search									
Configure									
Data Test									
Upgrade Firmware									
<u>I</u> lose									

1. Click on Search Button, showing that the program is searching for network module connected to this network.

NDNET[2008-09-	·09]							
1	No	Name	MAC Address	IP Address	Operating Mode	Hardware-Ver	Firmware-Ver	Status
Search	1	SYRD2451A-141	00-1D-34-38-3C-65	192.168.1.141	TCP Server	Ver 0221	Ver 0101	
Configuro	2	MDNET-2-宥憲	00-1D-34-28-24-05	192.168.1.224	TCP Server	Ver 0102	Ver 0101	
comguie	3	MDNET-2-昌佑	00-1D-34-28-24-04	192.168.1.225	UDP	Ver 0102	Ver 0101	
Data Test	4	SYRIS-SYRD2451A	00-1D-34-38-26-0B	192.168.1.129	TCP Server	Ver 0221	Ver 0101	
Data rost								
Upgrade Firmware								
<u> </u>				Searching for	MDNET 3 sec			
				N				
				43				
	,							



2. After the search is finished, all network module found will be shown in the right panel of the window. If you locate more than one module connected to this network, refer to the MAC address on the module(s) to determine which modules are the ones you wish to configure.

(C) NDNET[2008-09-	-09]								×
I	No	Name	MAC Address	IP Address	Operating Mode	Hardware-Ver	Firmware-Ver	Status	
Search	1	SYRD2451A-141	00-1D-34-38-3C-65	192.168.1.141	TCP Server	Ver 0221	Ver 0101		
C	2	MDNET-2-宥憲	00-1D-34-28-24-05	192.168.1.224	TCP Server	Ver 0102	Ver 0101		
	3	MDNET-2-昌佑	00-1D-34-28-24-04	192.168.1.225	UDP	Ver 0102	Ver 0101		
Data Text	4	SYRIS-SYRD2451A	00-1D-34-38-26-0B	192.168.1.129	TCP Server	Ver 0221	Ver 0101		
	L								
Upgrade Firmware	L								
	L								
<u> </u>	L								
	L								
	L								
	L								
	L								
	L								
	L								
	L								
J.									

3. Double click selected network module you wish to configure, the Configuration window will open.

Configuration		×
Information	Basic Network Operating Mode Access	sible IPs Password Serial
MAC Address :00-1D-34-38-3C-65		
Serial Number :08600101	Device Name : SYRD2451A-1	41
Firmware Version : Ver 0101	Device ID: 0001	
Hardware Version : Ver 0221	RS485 Setup RS485 START DELAY: 1 1	100 ~ 9999 us
	RS485 END DELAY: 1	00 ~ 9999 us
	✓OK (Write)	× Cancel

- 4. The Configuration window has 6 tabs: Basic, Network, Operating Mode, Accessible IPs, Password and Serial.
- 5. Basic: You can set Device Name here.
- 6. Network: You must assign a valid IP address to network module before it will work in your network environment. Your network system administrator should provide you with an IP address and related settings for your network. The IP address must be unique within the network. You can choose from 2 possible IP Configuration modes: Static, DHCP.

Method	Function Definition
Static	User defined IP address, Netmask, Gateway.
DHCP	DHCP Server assigned IP address, Netmask,
	Gateway and DNS

Configuration		×
Information	Basic Network Operating Mode Access	sible IPs Password Serial
MAC Address :00-1D-34-38-3C-65		
Serial Number :08600101	Static IP	
Firmware Version : Ver 0101	IP Address: 192 168	141
Hardware Version - Ver 0221	Netmask Address: 255 255 2	255 0
	Gateway Address: 192 168	254
	DNS Server1: 0 0 0	
	DNS Serverz: 10 10 10	
	✓ OK (Write)	× Cancel



7. Serial: You should set up network module serial parameters as below diagram.

Configuration			×
Information	Basic Network Operating Mode Acces	sible IPs Password Ser	ial
MAC Address :00-1D-34-38-3C-65			
Serial Number :08600101	Serial: 115200,n,8,1	<b>•</b>	
Firmware Version : Ver 0101	19200,e,8,1 38400,n,8,1		
Hardware Version : Ver 0221	38400,e.8.1 57600,e.8.1 115200,e.8.1 115200,e.8.1 115200,e.8.1		
	✓ OK (Write)	× Car	ncel



### 8. Operating Mode:

Three different Socket Modes are available: TCP Server, TCP Client, and UDP mode. The main difference between the TCP and UDP protocols is that TCP guarantees delivery of data by requiring the recipient to send an acknowledgement to the sender. UDP does not require this type of verification, making it possible to offer speedier delivery. UDP also allows multicasting of data to groups of IP addresses.

🕲 Configuration		×
Information	Basic Network Operating Mode Acce	ssible IPs Password Serial
MAC Address :00-1D-34-38-3C-65	C TOD C H L	
Serial Number :08600101	Local TCP Port:	4001 Max Connection: 1
Firmware Version : Ver 0101		
Hardware Version : Ver 0221	C TUP Ulient Mode Connect	Mode: Starup
	🗖 Destination IP 01: 0	0 0 Port: 5001
	🗖 Destination IP 02: 🚺 🚺	0 0 Port: 5001
	🗖 Destination IP 03: 🚺 🚺	0 0 Port: 5001
	🗖 Destination IP 04: 0	0 0 Port: 5001
	C UDP Mode	
	Local TCP Port: 5001	
	Destination IP 01: 0	0 0 Port: 5001
	Destination IP 02: 0	0 0 Port: 5001
	🗖 Destination IP 03: 🚺 🛛	0 0 Port: 5001
	Destination IP 04: 0	0 0 Port: 5001
	Data Packing(Optional)	Miscellaneous(Optional)
	Delimiter 1 OD (0 - ff,Hex)	TCP Alive Check Timeout
	Delimiter 2 00 (0 - ff,Hex)	7 (0 - 255 min)
	Force Tu Timocuti 0 (0 CEE2E ma)	Inactivity Timeout
		U (0 - 65535 ms)
	✓OK (Write)	× Cancel

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# VI. TCP Server Mode

In TCP Server mode, SYRD245-1N-N reader provides a unique IP:Port address on a TCP/IP network. SYRD245-1N-N reader wait passively to be contacted by the host computer, allowing the host computer to establish a connection with and get data from the serial device.



#### Basic Network Operating Mode Accessible IPs Password Serial TCP Server Mode Local TCP Port: 4001 Max Connection: 1 -Connect Mode: Starup C TCP Client Mode -🔲 Destination IP 01: 🚺 Port: 5001 0 0 0 🔲 Destination IP 02: 🚺 Port: 5001 0 0 0 Destination IP 03: 0 0 0 0 Port: 5001 🔲 Destination IP 04: 🚺 0 0 0 Port: 5001 C UDP Mode Local TCP Port: 5001 🔲 Destination IP 01: 🚺 Port: 5001 0 0 0 Destination IP 02: 0 0 0 0 Port: 5001 🔲 Destination IP 03: 🚺 Port: 5001 0 0 0 🔲 Destination IP 04: 🚺 0 0 0 Port: 5001 Data Packing(Optional) Miscellaneous(Optional) TCP Alive Check Timeout OD Delimiter 1 (0 - ff,Hex) 17 (0 - 255 min) 00 Delimiter 2 (0 - ff,Hex) Inactivity Timeout Force Tx Timeout: 0 (0 - 65535 ms) 0 (0 - 65535 ms)

# 1. Setting Operating Mode

Select "TCP Server Mode" and press "OK" to submit the settings.

2. When you finished change operating mode, you can execute SYRIS Xtive demo program to read TAG.

(SYRIS Xtive CD-ROM\SYRD245-1\Utility\Xtive.exe)

and the United Vision	[2008.09.10]					
Set Reader Rea	Id TA/S					
View All TAG Vi	ew Select TAG				COM UDP ICP	Server TCP Client
NO UID	RSS[LGF DI	11	12	Count	₩ 192.168.1.228	192.168.1.111
					E 192.160.1.220	E 192.160.1.112
					197.168.1.100	E 192.160.1.113
					□ 192.160.1.104	E 192.168.1.114
					197.168.1.105	197.168.1.115
					197.168.1.105	T 192.160.1.116
					E 192.160.1.107	E 192.160.1.117
					197.168.1.108	E 192.160.1.118
					192.160.1.109	E 192.160.1.119
					E 192.160.1.110	F 192.160.1.120
					Destinution	Port : 4001
					1	l l
						000000000 0.44 1.842
						Sectivo
					TAG Counc	0
L _Select TAG ID (D	ouble Click)				RSSI Filter :	0
					•	· .
					1	Start
					(	llear
						Lait
<u>r</u>		-				

3. Select and modify correct IP address to communicate with Reader. (You can communicate multi-reader at the same time)

.∦m.	* UHINY VILOO (2008.	99.10	I									_ <b>=</b> ×
Set R	eader Read IAG	5										
Viev	v All TAG View Se	dect T	FAG							COM UDP	TCP Server TCP	Client
NO	UID	RSS	LOI	וט	11		12	Count	•	Connected:1	92.160.1.220 Port/	1001
3	0001000108180940	147	233					1				
4	0001000400309004	147	Z21		-			1				
5	0001000107082075	164	223					1				
6	0001000100143010	138	234		27.41 C	/ 01.33 F	27.75 C 7 01.95 F	1				
7	0001000108180937	163	219					1				
8	0001000407063487	117	219		27.22 C	/ 00.99 F	27.03 C 7 00.05 H	1				
9	0001000106400052	118	211					1				
10	2008000107064015	126	215		27.19 C	/ 00.94 F	27.25 C 7 01.05 F	1				
11	0001000106230001	112	199		-			2				
12	0001000107200044	140	217					1	- 1			
10	0001000107159006	113	180		-			1	- 1			
14	0001000108309610	151	225					1	- 1			
15	0001000107191087	145	231		-			1	- 1			
16	0001000107340318	153	279					1				
16	0001000100209002	153	235		-			1	- 1	<u> </u>		
18	0001000107340320	109	193					1	- 1	(		
19	0001000106211355	104	09	DAT 14	-			1	- 1			
20	0001000100100100109	126	217		-			1		TAC ID	0001000100270002	1.00.000
71	0001000107101224	124	273					1		DIGTUR		Set TAG
22	00010001001001	107	1//		-			1		IAG Count	24	
73	0001000107340304	115	197					1	-1			
Sel	ect TAG ID (Double	Click	-						=	RSSI Hilten:	0	
0001	000107340320 000	10001	08180	940					-1	•		•
0001	000108100109 000	10001	08239	002					- 1			_
0001	000108100111 000	10001	08260	002					- 1		5top	
0001	000108143010 000	10001	08009	610					- 1		11	
0001	000108180937 000	10001	08339	801							clear	
0001	000108180938 200	80001	07064	015							Invite	
1					• ]				1		Exit	
0000	000000037 / 0000005 wei:											
									-			

Starting read TAG will receive Tag information from reader.



- 4. Field Introduction:
  - a. UID: Tag's identification number.

b. RSSI: Received Signal Strength Indication (0-255). Reading range

and RSSI are inverse proportion.

- c. LQI: Link quality indicator (0-255).
- d. DI: TAG status and indicator.

[BAT] means TAG battery was low.

[MO] means vibration switch alarm

[SW] means TAG call button was clicked.

[SENSOR] means light sensor have detect light.

[START] means TAG restart.

- e. T1: Ambient temperature sensor
- f. T2: Skin temperature sensor or humidity sensor.

### NOTE:

Light sensor and Temperature Sensor only for SYTAG245-TM series Humidity sensor only for SYTAG245-HT series

5. Select TAG ID to shift the target TAG from left window to right window.

Select TAG ID (Double Click)										
0001000107340301	0001000107439002	000100	0001000107340318							
0001000107340304	0001000108100109	000100	0001000107340320							
0001000107340318	0001000108100111	000100	0001000108100109							
0001000107340320	0001000108143010	000100	0001000108180938							
0001000107340328	0001000108180937	000100	0001000108180940							
0001000107340482	0001000108180938	200610								
•		F								



6. Select "View Select TAG" tab to get target TAG information.

Set F	Set Read 1 AG										
View	View All TAG View Select TAG COM UDP ICP Server TCP Client										
NO	UID	RSSI	LQI	DI	TI	T2	Connected:192.160.1.220 Port4001				
1	0001000100100030	161	2753			-					
2	0001000108180940	147	223								
3	0001000100100100	129	223		-	-					
4	0001000107340318	155	233								
							TAG ID: 2006100199999999 Set LAG				
							IAG Count 30 RSSI Filter : 0				
				_	Auto Save Lo Elle		Stop				
		numbe	n p		Careful and the first file		Clear				
	4	Time	H: <b>(</b> ),	.7 Sec	San	IM	Lat				
000	000000036 / 0000007 ant:										

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# VII. TCP Client Mode

In TCP Client mode, SYRD245-1N-N reader can actively establish a TCP connection to a pre-defined host computer when serial data arrives.

	TCP		D
2	Ether		
		- Marcan	K

Basic Network Operating	Mode	Acce	ssible I	Ps   Pa	ssword Serial					
C TCP Server Mode										
Local TUP Port: 4001 Max Connection:										
TCP Client Mode Connect Mode: Starup										
Destination IP 01:	192	168	1	100	Port: 5001					
Destination IP 02:	0	0	0	0	Port: 5001					
🔲 Destination IP 03:	0	0	0	0	Port: 5001					
Destination IP 04:	0	0	0	0	Port: 5001					
C UDP Mode										
Local TCP Port:	5001									
Destination IP 01:	0	0	0	Port: 5001						
Destination IP 02:	0	0	0	0	Port: 5001					
Destination IP 03:	0	0	0	0	Port: 5001					
Destination IP 04:	0	0	0	0	Port: 5001					
Data Packing(Optional)			ПГМ	iscellan	eous(Optional)					
Delimiter 1 OD (I	D - ff,He	ex)		CP Alive	Check Timeout					
Delimiter 2 00 (0 - ff,Hex) (0 - 255 min)										
Force Tx Timeout: 0 (	) - 655:	35 ms)		0 (0 - 65535 ms)						

Select "TCP Client Mode" and set up "Destination Host" IP address than press "OK" to submit the settings.

# 1. Setting Operating Mode

2. When you finished change operating mode, you can execute SYRIS Xtive demo program to read TAG.

(SYRIS Xtive CD-ROM\SYRD245-1\Utility\Xtive.exe)

👷 XRive UHBBY VILO	0 [2008-09.10]				
Set Reader Re	ad TAG				
View All TAG	iew Select TAG	COM UDP TCP Server TCP Client			
NO UID	RSS LOF DI	11	12	Count	Local Listen Port : 2001
					TAG ID: 000000000000 Set LAG
					IAG Count 0
Select TAG ID (F	Double Click)				RSSI Filter : 0
					· · · · · · · · · · · · · · · · · · ·
					Shart
					Clear
					Lxit
0000000427.000	00008 and				

3. Select "TCP Client" Tab and starting read TAG will receive Tag information from reader.

SEENERGEF I REND AVE I	
View All TAG View Select TAG COM [ UDP   TCP Server 10	P Client
NO UID RSSLOT DI 11 12 Count 192 168 1 228 1052	
1 0001000108180938 160 225 6	
Z 0001000107208003 141 229 [SLN SON] 1	
3 0001000107191087 117 227 1	
4 000100010/159006 110 189 1	
5 0001000108339801 147 227 1	
5 0001000100100109 119 213 - · · 1	
7 0001000106230001 120 205 1	
8 000100010/340320 113 211 1	
9 00010001400140010 142 229 27.47 C / 01.44 F 27.66 C / 01.78 F 1	
10 0001000107340304 116 205 1	
11 0001000100100940 145 229 1	
12 0001600107101274 125 219 1	
13 0001000107200044 141 223 1	
14 0001000108260002 150 229 27.83 56.76% 1	
TAG ID: 200100010010230	Set TAG
IAG Count 14	
	-
- Salard TAC ID (Durdels Clink) RSSI Filter: 0	
	-
000100010715005 000100108100100 5000 5000 5000	
000100010/19100/ 0001000100143010	
0001000107200044_000100108180938 Clear	
0001000107208003 000100108180940	
Litt	
000000019 / 0000005 xm;	



# VIII. UDP mode

Compared to TCP communication, UDP is faster and more efficient. In UDP mode, you can multicast data from the SYRD245-1N-N to multiple host computers, and the serial device can also receive data from multiple host computers, making this mode ideal for message display applications.



# 1. Setting Operating Mode

Basic Network Operating	Mode Acces	sible IPs 🗍 Pa	assword Serial					
C TCP Server Mode Local TCP Port: 4001 Max Connection: 1								
C TCP Client Mode Connect Mode: Starup								
Destination IP 01:	192 168	1 100	Port: <mark>5001</mark>					
🔲 Destination IP 02:	0 0	0 0	Port: 5001					
🔲 Destination IP 03:	0 0	0 0	Port: 5001					
Destination IP 04:	0 0	0 0	Port: 5001					
UDP Mode								
Local TCP Port:	6001							
Destination IP 01:	192 168	1 62	Port: 5001					
Destination IP 02:	0 0	0 0	Port: 5001					
Destination IP 03:	0 0	0 0	Port: <mark>5001</mark>					
🔲 Destination IP 04:	0 0	0 0	Port: <mark>5001</mark>					
Data Packing(Optional)		Miscellar	neous(Optional)					
Delimiter 1 0D (0 - ff,Hex) TCP Alive Check Timeout								
Delimiter 2 00 (0 - ff,Hex) 7 (0 - 255 min)								
Force Tx Timeout: 0 (0 - 65535 ms) 0 (0 - 65535 ms)								
elect "LIDP Mode" a	nd "Destir	nation" IP	address than press "(					

Select "UDP Mode" and "Destination" IP address than press "OK" to submit the settings.



 When you finished change operating mode, you can execute SYRIS Xtive demo program and setup communication port to read TAG. (SYRIS Xtive CD-ROM\SYRD245-1\Utility\Xtive.exe)

Externe undry www.com(/venk.ev.no) Set Reader Read TAG	
View All TAG View Select TAG	COM TOP Server TOP Client
NO 100 RSS1 QL DI 11 17 Cauer	Local Listen Port : MIII Destination Port : GIIII
-Select TAG ID (Double Click)	TAG ID: 00000000000000000000000000000000000

3. Select "UDP" Tab and starting read TAG will receive Tag information from reader.

	2 370x+ 1010xy V1.00 (2008.09.10)									
Set Keader Head 1AG										
Viev	View All TAG View Select TAG								TCP Server   TCP	Client
NO	UID	RSS	LOI DI		11	12	Count	192 168 1 221	8 6001	
1	0001000107340304	108	199				1			
2	0001000100209002	155	229		-		1			
3	0001000106230001	112	193				1			
4	2008000107064015	134	234		27.25 C 7 01.05 F	27.25 C 7 01.05 F	-1			
5	0001000108339801	149	231				1			
6	0001000100100930	100	234		-	•				
1	0001000107063187	114	215		27.28 C. / 81.11 F	77.03 C / 80.66 F	1			
-	0001000100260002	149	231		27.05	56.82%	1			
9	0001000100100937	162	223		-		1			
10	000100010814.9010	1.55	233		77.581.781.781	77.8h C 7 81.78 I	1			
11	0001000100100940	192	233		-	•	- 1			
17	Internetional Controls	151	200				÷ 1			
10	0001000107200050	100	221		-	•	+ 1			
15	0001000407140402	117	200				÷ 1			
16	0001000107340432	130	219		-	•	<u>i</u>	1		
16	0001000406270002	125	205		20.03 C / 02.45 F	20.00 C / 02.51 F	-i			
10	0001000406400052	110	204				1	745.00	0004000400400052	
1×-	0001000100400002	110			-			DATE ID:	001000100400032	Set TAG
								IAG Count	18	
Sel	ect TAG ID (Double	Click	J					RSSI Filter :	0	
000	000106230001 000	10001		4 000100				•		•
000	0001052/0002 000	10001	0704002	0 000100						
0001	000106400052 000	10001	10734048	2 000100					5top	
000	0001000107063107 0001000108100111 000100								171.0.00	
0001	000107159005 000	10001	0614301	0 000100					crear	
	000107260056 000	1000		- 7008000 -					Exit	
0000	000000027 / 0000001 HHI:									

### FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by SYRIS Technology Corp. Could void the user's authority to operate this equipment.