



# SYRIS 2.45 GHz RFID Network Reader User Manual

[Home](#) » [SYRIS](#) » SYRIS 2.45 GHz RFID Network Reader User Manual 

## Contents

- 1 SYRIS 2.45 GHz RFID Network Reader User Manual
- 2 1. Product Specification
- 3 2. The Diagram of the System Connection
- 4 4. Setup MDNET-2
- 5 Operating Mode:
- 6 5. TCP Server Mode
  - 6.1 1. Setting Operating Mode
  - 6.2 4. Field Introduction:
- 7 7. TCP Client Mode
  - 7.1 1. Setting Operating Mode
- 8 8. UDP mode
  - 8.1 1. Setting Operating Mode
- 9 FCC Statement
- 10 Documents / Resources
- 11 Related Posts

## SYRIS 2.45 GHz RFID Network Reader User Manual

SYRD245-1N-N

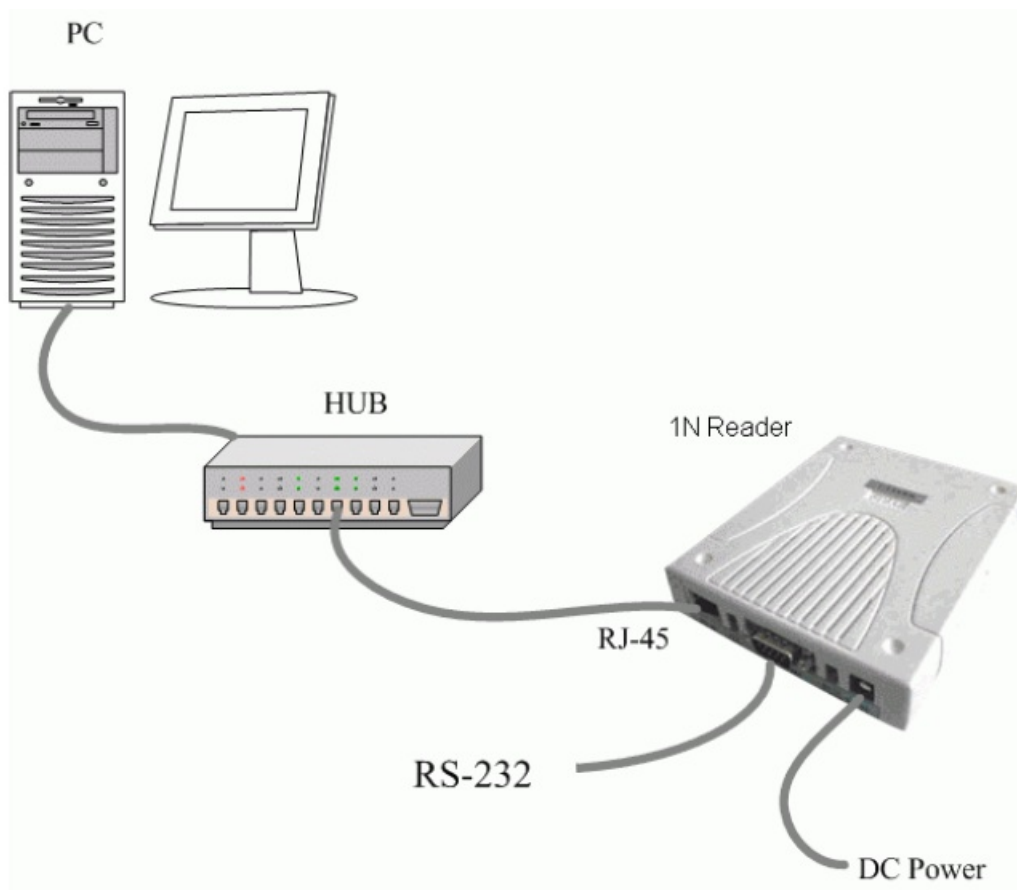


Version 1.3  
2019/01/22

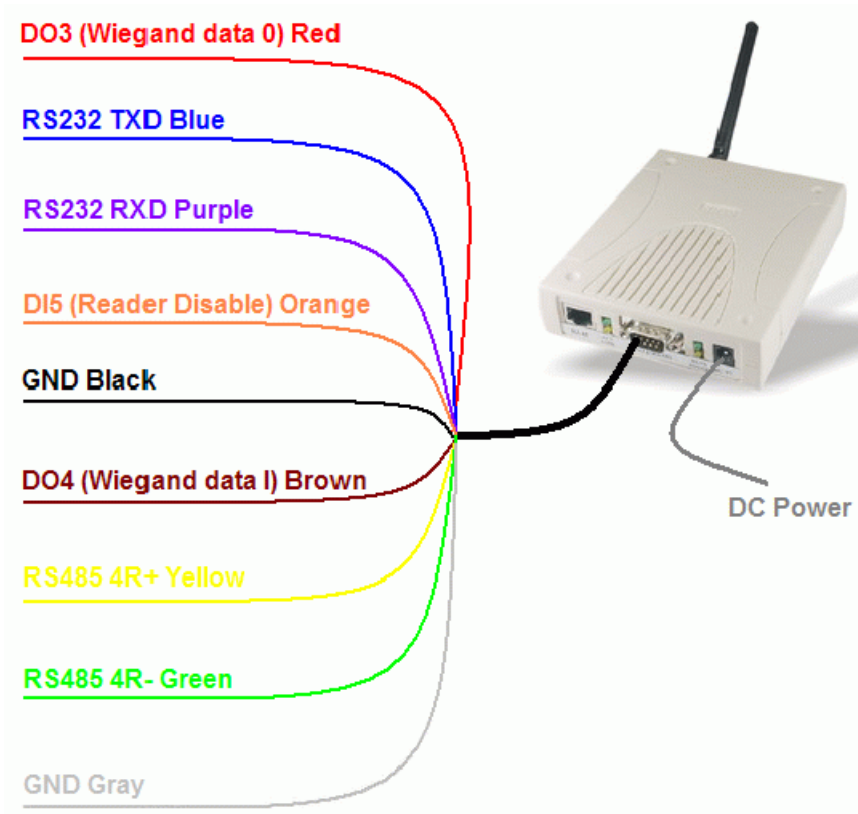
## 1. Product Specification

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)

## 2. The Diagram of the System Connection

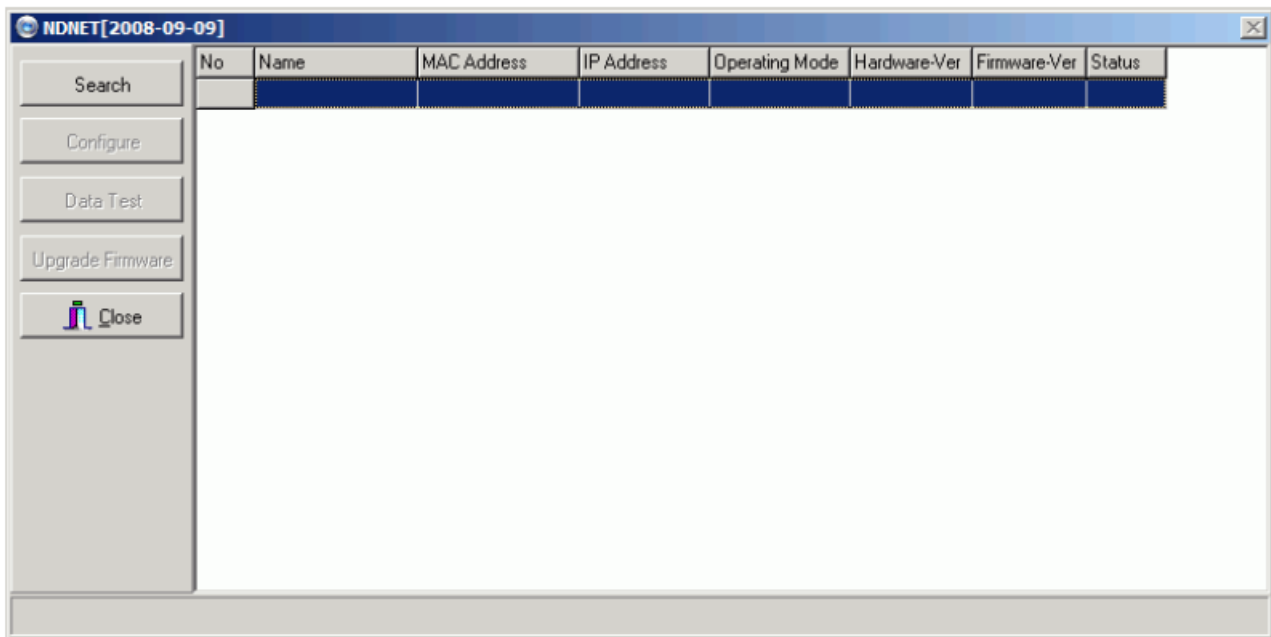


SYRD245-1N-N connection to PC

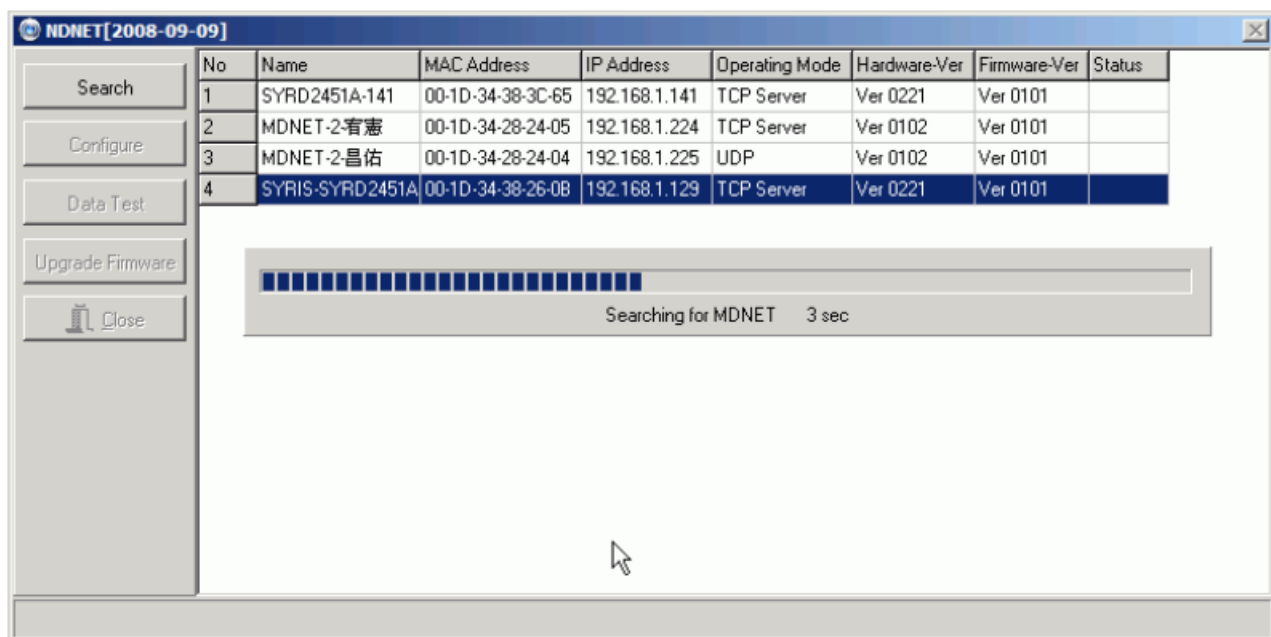


SYRD245-1N-N connection to RS-485

## 4. Setup MDNET-2



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



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.

MDNET[2008-09-09]								
Search	No	Name	MAC Address	IP Address	Operating Mode	Hardware-Ver	Firmware-Ver	Status
	1	SYRD2451A-141	00-1D-34-38-3C-65	192.168.1.141	TCP Server	Ver 0221	Ver 0101	
Configure	2	MDNET-2宥憲	00-1D-34-28-24-05	192.168.1.224	TCP Server	Ver 0102	Ver 0101	
Data Test	3	MDNET-2昌佑	00-1D-34-28-24-04	192.168.1.225	UDP	Ver 0102	Ver 0101	
Upgrade Firmware	4	SYRIS-SYRD2451A	00-1D-34-38-26-08	192.168.1.129	TCP Server	Ver 0221	Ver 0101	
Close								

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

Configuration	
<b>Information</b> MAC Address : 00-1D-34-38-3C-65 Serial Number : 08600101 Firmware Version : Ver 0101 Hardware Version : Ver 0221	<div> <div>Basic</div> <div>Network</div> <div>Operating Mode</div> <div>Accessible IPs</div> <div>Password</div> <div>Serial</div> </div> <div>           Device Name : <input type="text" value="SYRD2451A-141"/>            Device ID : <input type="text" value="0001"/> </div> <div> <b>RS485 Setup</b>            RS485 START DELAY: <input type="text" value="1"/> 100 ~ 9999 us            RS485 END DELAY: <input type="text" value="1"/> 100 ~ 9999 us         </div> <div> <input type="button" value="OK (Write)"/> <input type="button" value="Cancel"/> </div>

**4. The Configuration window has 6 tabs:** Basic, Network, Operating Mode, Accessible IPs, Password and Serial.

**5. Basic:** You can set Device Name here.

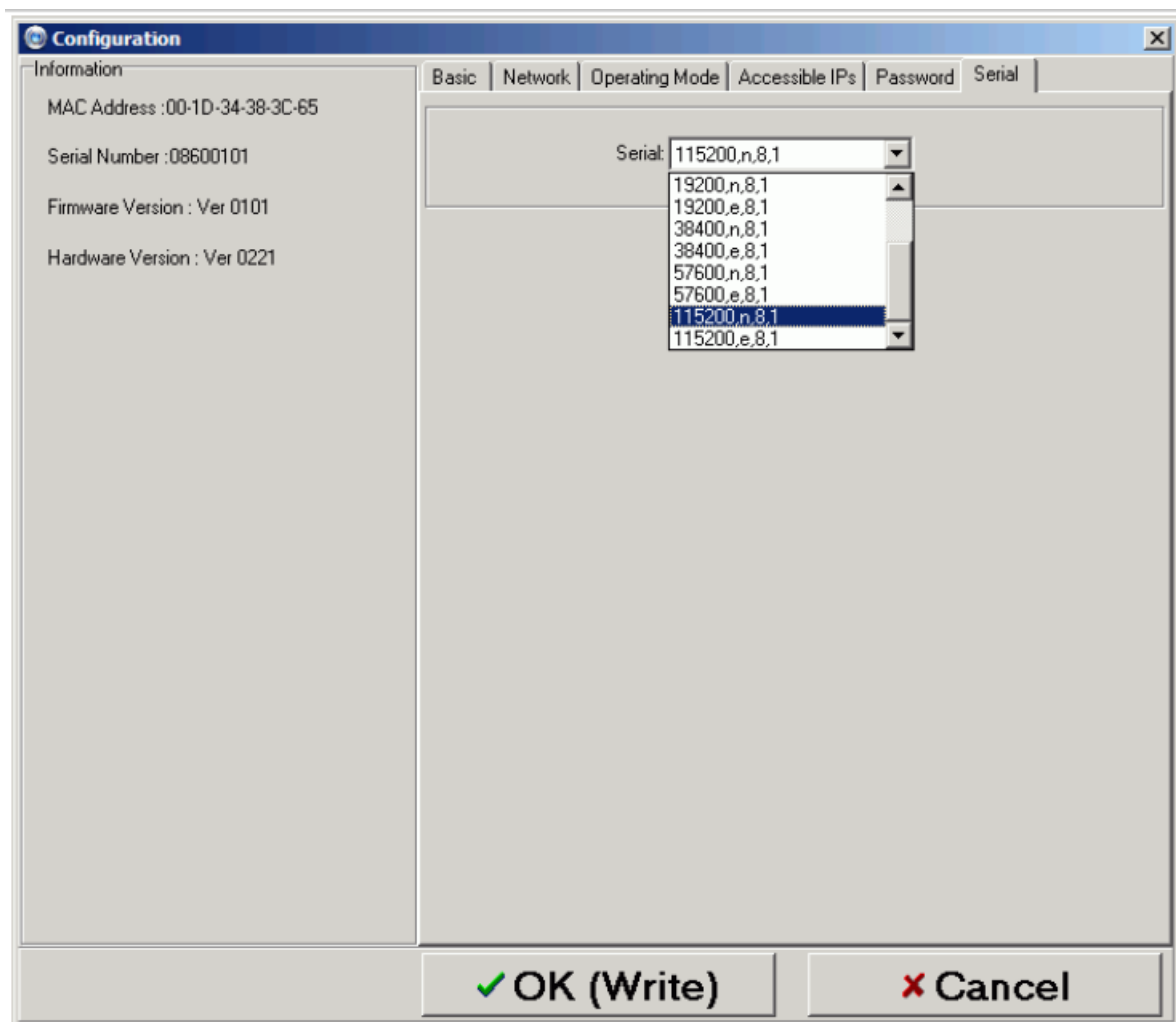
**6. Network:** You must assign a valid IP address to network module before it will work in your network environment. Your network system administrator should provide you with an IP address and related settings for

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

The screenshot shows a 'Configuration' window with a blue title bar and a close button. It has a sidebar on the left labeled 'Information' containing: MAC Address :00-1D-34-38-3C-65, Serial Number :08600101, Firmware Version : Ver 0101, and Hardware Version : Ver 0221. The main area has tabs: Basic, Network (selected), Operating Mode, Accessible IPs, Password, and Serial. Under the 'Network' tab, there is a checkbox for 'DHCP' which is unchecked. Below it is a 'Static IP' section with input fields for: IP Address (192, 168, 1, 141), Netmask Address (255, 255, 255, 0), Gateway Address (192, 168, 1, 254), DNS Server1 (0, 0, 0, 0), and DNS Server2 (0, 0, 0, 0). At the bottom are two buttons: 'OK (Write)' with a green checkmark and 'Cancel' with a red X.

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



### 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

MAC Address :00-1D-34-38-3C-65

Serial Number :08600101

Firmware Version : Ver 0101

Hardware Version : Ver 0221

Basic | Network | Operating Mode | Accessible IPs | Password | Serial

TCP Server Mode

Local TCP Port: 4001    Max Connection: 1

TCP Client Mode

Connect Mode: Startup

Destination IP 01: 0 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

UDP Mode

Local TCP Port: 5001

Destination IP 01: 0 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)

Delimiter 1

0D

(0 - ff,Hex)

Delimiter 2

00

(0 - ff,Hex)

Force Tx Timeout:

0

(0 - 65535 ms)

Miscellaneous(Optional)

TCP Alive Check Timeout

7

(0 - 255 min)

Inactivity Timeout

0

(0 - 65535 ms)

OK (Write)

Cancel

## 5. TCP Server Mode

The diagram shows a host computer (desktop) connected to a cloud labeled 'TCP/IP Ethernet'. This cloud is connected to a SYRD245-1N-N reader (a small white device with an antenna). An orange arrow labeled ① points from the host towards the reader, representing data being sent to the reader. A green arrow labeled ② points from the reader back towards the host, representing data being received from the reader.

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.

### 1. Setting Operating Mode



Basic

Network

Operating Mode

Accessible IPs

Password

Serial

☒ TCP Server Mode
 Local TCP Port: 4001
 Max Connection: 1

☐ TCP Client Mode
 Connect Mode: StartUp
 

☐ Destination IP 01: 0 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

☐ UDP Mode
 Local TCP Port: 5001
 

☐ Destination IP 01: 0 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)

☒ Delimiter 1 0D (0 - ff,Hex)
 ☐ Delimiter 2 00 (0 - ff,Hex)
 Force Tx Timeout: 0 (0 - 65535 ms)

Miscellaneous(Optional)

TCP Alive Check Timeout 7 (0 - 255 min)
 Inactivity Timeout 0 (0 - 65535 ms)

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)

Winbox V1.05 (2008.04.10)

Set Reader Read IAG

View All TAG View Select TAG

NO	UID	RSSI	LQI	DI	I1	I2	Count
----	-----	------	-----	----	----	----	-------

Select TAG ID (Double Click)

COM: UDP TCP Server TCP Client

☒ 192.168.1.228  
☐ 192.168.1.229  
☐ 192.168.1.100  
☐ 192.168.1.104  
☐ 192.168.1.105  
☐ 192.168.1.106  
☐ 192.168.1.107  
☐ 192.168.1.108  
☐ 192.168.1.109  
☐ 192.168.1.110

☐ 192.168.1.111  
☐ 192.168.1.112  
☐ 192.168.1.113  
☐ 192.168.1.114  
☐ 192.168.1.115  
☐ 192.168.1.116  
☐ 192.168.1.117  
☐ 192.168.1.118  
☐ 192.168.1.119  
☐ 192.168.1.120

Destination Port: 4001

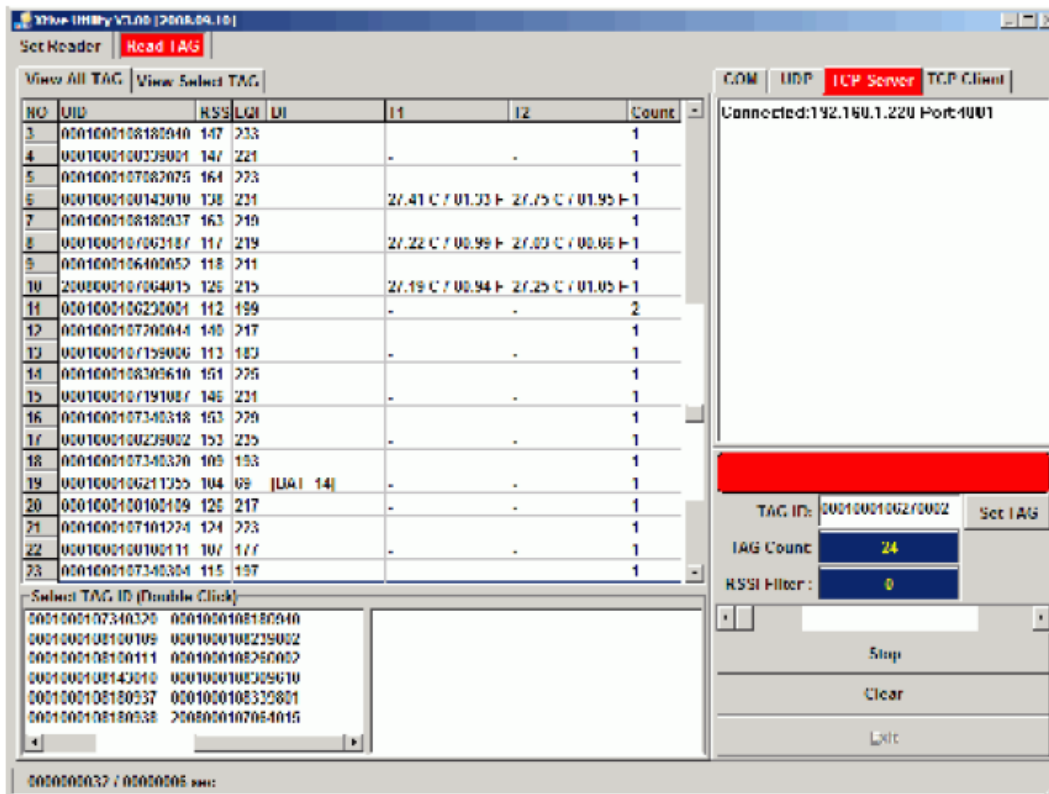
TAG ID: 00000000000000 Set IAG

IAG Count: 0

RSSI Filter: 0

Start Clear Exit

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



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.

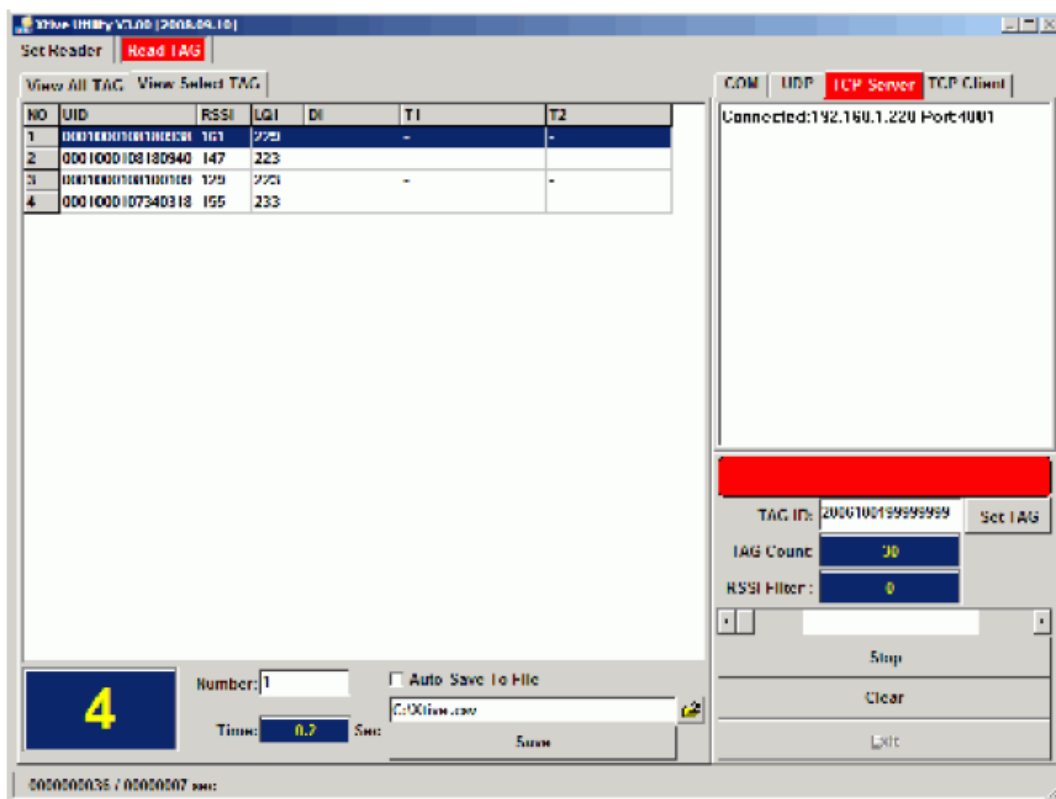
#### NOTE:

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.

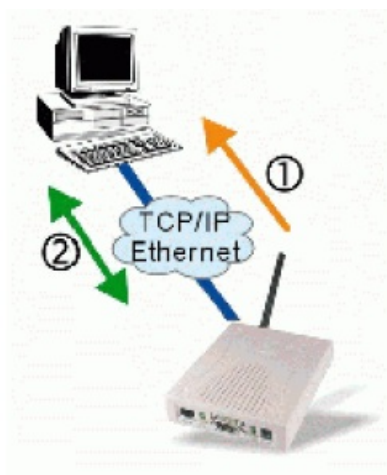
Select TAG ID (Double Click)			
0001000107340301	0001000107439002	0001000107439003	0001000107340318
0001000107340304	0001000108100109	0001000108100110	0001000107340320
0001000107340318	0001000108100111	0001000108100112	0001000108100109
0001000107340320	0001000108143010	0001000108143011	0001000108180938
0001000107340328	0001000108180937	0001000108180938	0001000108180940
0001000107340482	0001000108180938	2006100108180938	

6. Select “View Select TAG” tab to get target TAG information.



## 7. 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.



## 1. Setting Operating Mode

Basic | Network | **Operating Mode** | Accessible IPs | Password | Serial

☐ TCP Server Mode  
Local TCP Port: 4001 Max Connection: 1

☒ 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

☐ UDP Mode  
Local TCP Port: 5001

☐ Destination IP 01: 0 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)  
☒ Delimiter 1: 0D (0 - ff,Hex)  
☐ Delimiter 2: 00 (0 - ff,Hex)  
 Force Tx Timeout: 0 (0 - 65535 ms)

Miscellaneous(Optional)  
 TCP Alive Check Timeout: 7 (0 - 255 min)  
 Inactivity Timeout: 0 (0 - 65535 ms)

Select "TCP Client Mode" and set up "Destination Host" IP address than 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)

SYRIS Xtive V1.00 (2008.09.10)

Set Header | **Read TAG**

View All TAG | View Select TAG

NO	UID	RSSI	LO	HI	Count

Select TAG ID (Double Click)

COM | UDP | TCP Server | **TCP Client**

Local Listen Port: 5001

TAG ID: 0000000000000000 Set TAG

TAG Count: 0

RSSI Filter: 0

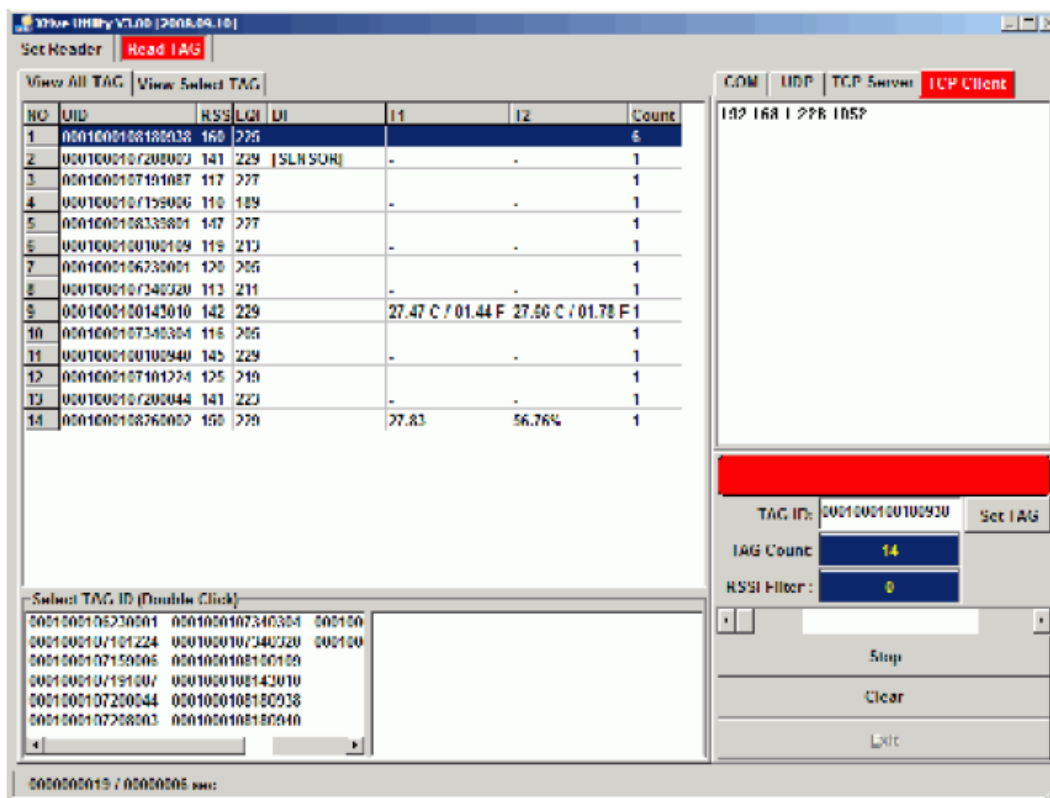
Start

Clear

Exit

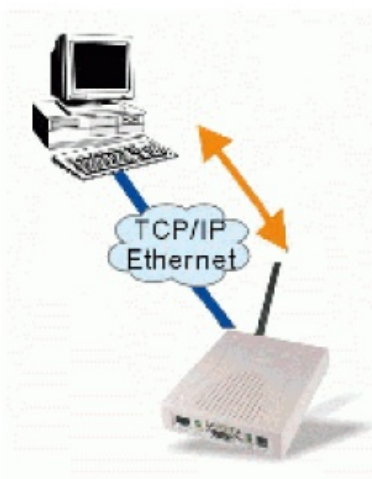
00000000 / 00000000

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



## 8. 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	Accessible IPs	Password	Serial
-------	---------	----------------	----------------	----------	--------

☒ TCP Server Mode
 

Local TCP Port: 
 Max Connection:

☐ TCP Client Mode
 

Connect Mode:

☐ Destination IP 01:     Port:

☐ Destination IP 02:     Port:

☐ Destination IP 03:     Port:

☐ Destination IP 04:     Port:

☒ UDP Mode
 

Local TCP Port:

☒ Destination IP 01:     Port:

☐ Destination IP 02:     Port:

☐ Destination IP 03:     Port:

☐ Destination IP 04:     Port:

Data Packing(Optional)
 

☒ Delimiter 1  (0 - ff,Hex)
 

☐ Delimiter 2  (0 - ff,Hex)

Force Tx Timeout:  (0 - 65535 ms)

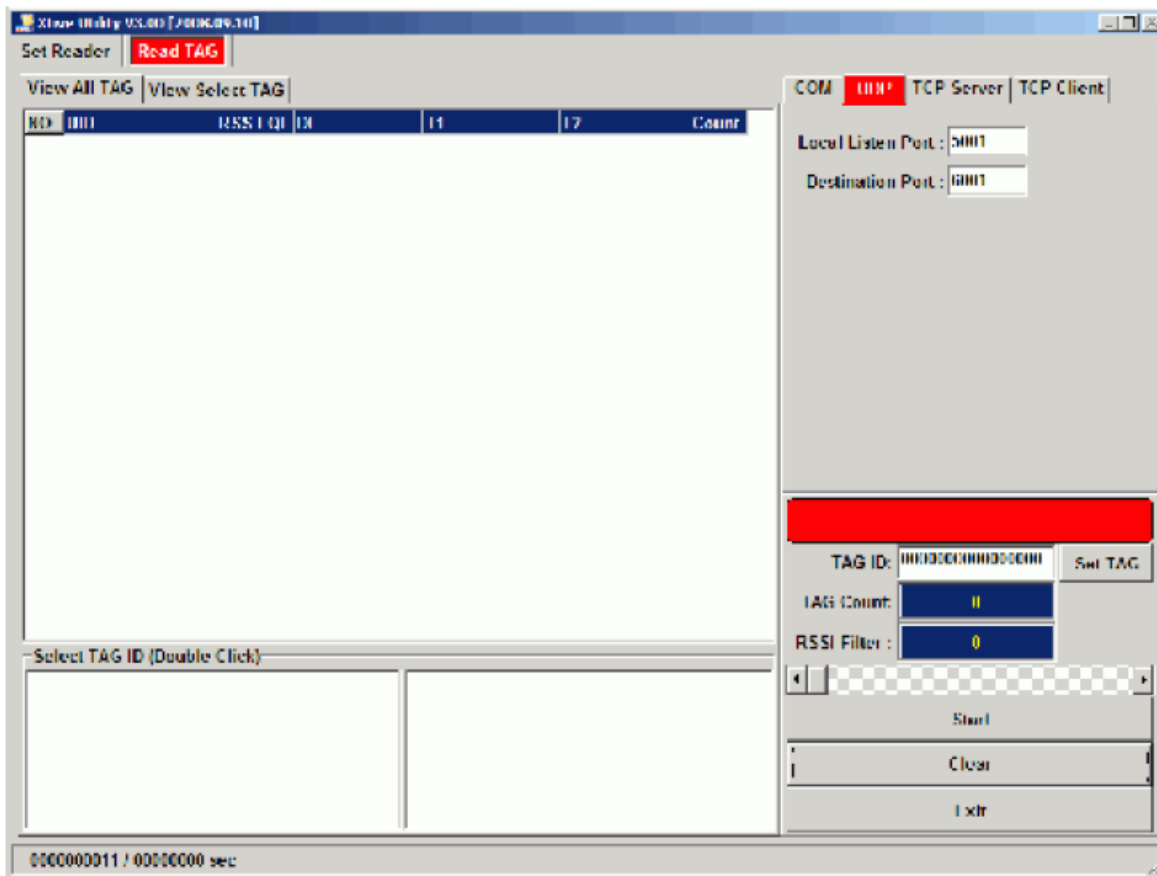
Miscellaneous(Optional)
 

TCP Alive Check Timeout  
 (0 - 255 min)

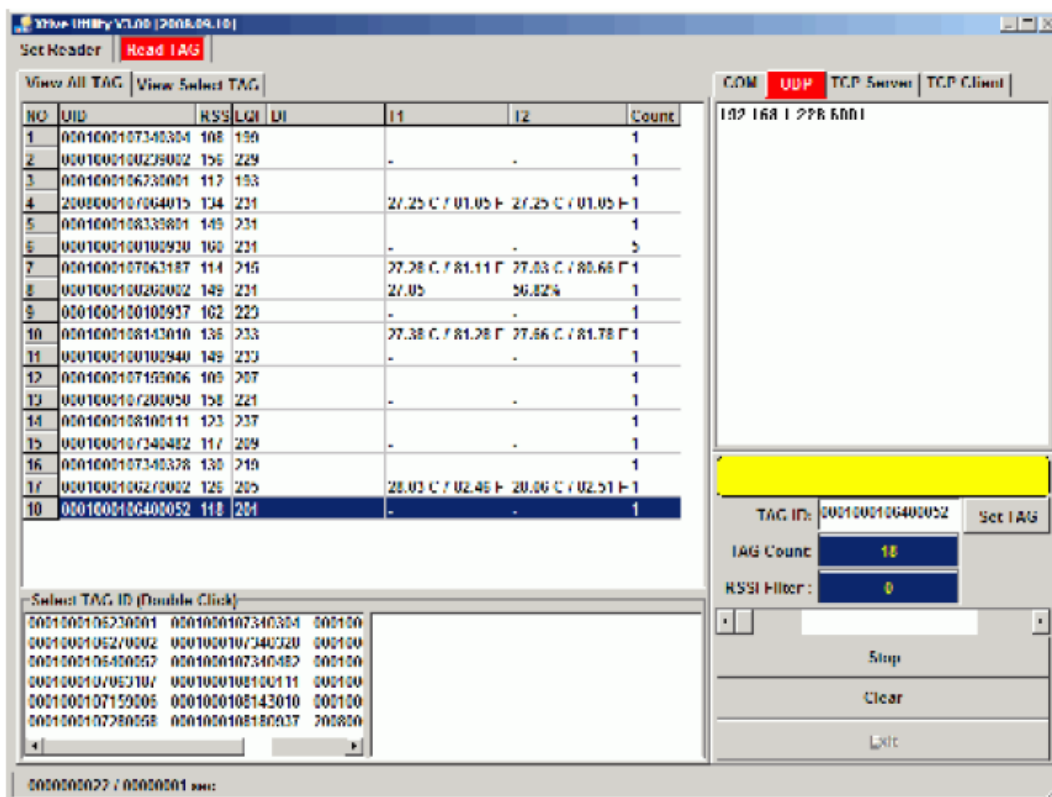
Inactivity Timeout  
 (0 - 65535 ms)

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

2. 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)



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




## 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.

**Documents / Resources**

<div><div><div>SYRD245-1N-N 2.45 GHz RFID Network Reader User Manual</div><div></div><div>Revised 1.0 01/2010-02</div></div></div>	<div><div><a href="#">SYRIS 2.45 GHz RFID Network Reader</a> [pdf] User Manual</div><div>2.45 GHz RFID Network Reader, SYRD245-1N-N</div></div>
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