SYRD245-1N-M

2.45 GHz RFID Network Reader

User Manual

Version 1.7

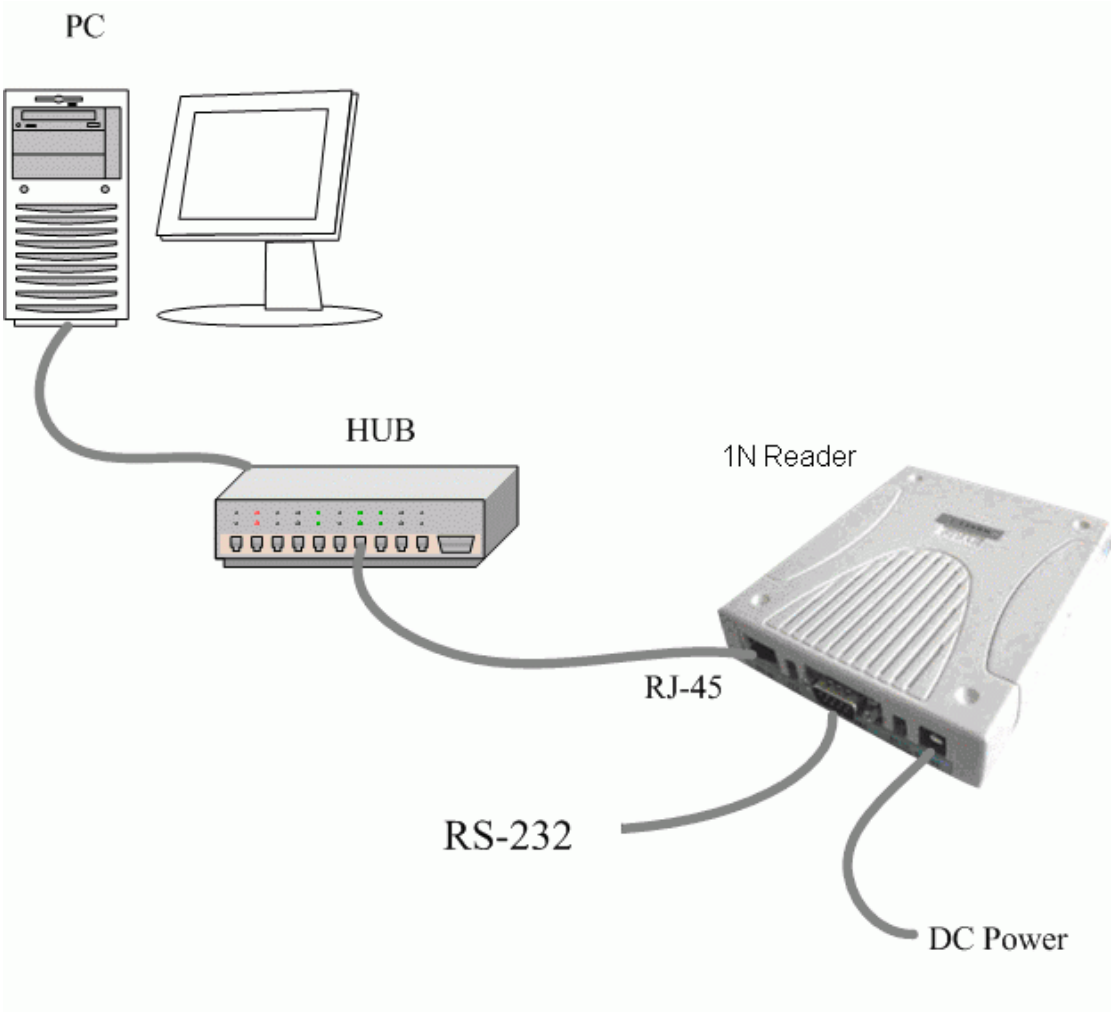
2007/04/23

Ⅰ. Product Specification

Communication	2.45 GHz Support read and write
Frequency	2.40~2.48 GHz
Channel	316
Address	65536
RSSI	0-255
LQI	0-255
Programmable	Set Parameter
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	7.5 VDC ~ 28 VDC
Action Current	MAX 300 mA @ 12 VDC
Operating Temperature	-20 ^{o}C to 65 ^{o}C, 5 to 95%RH
Storage Temperature	-30 ^{o}C to 85 ^{o}C, 5 to 95%RH
Dimension	107W x 138H x 30D (mm)

Ⅱ. The Diagram of the System Connection

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



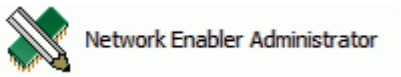
SYRD245-1N-M connection to PC

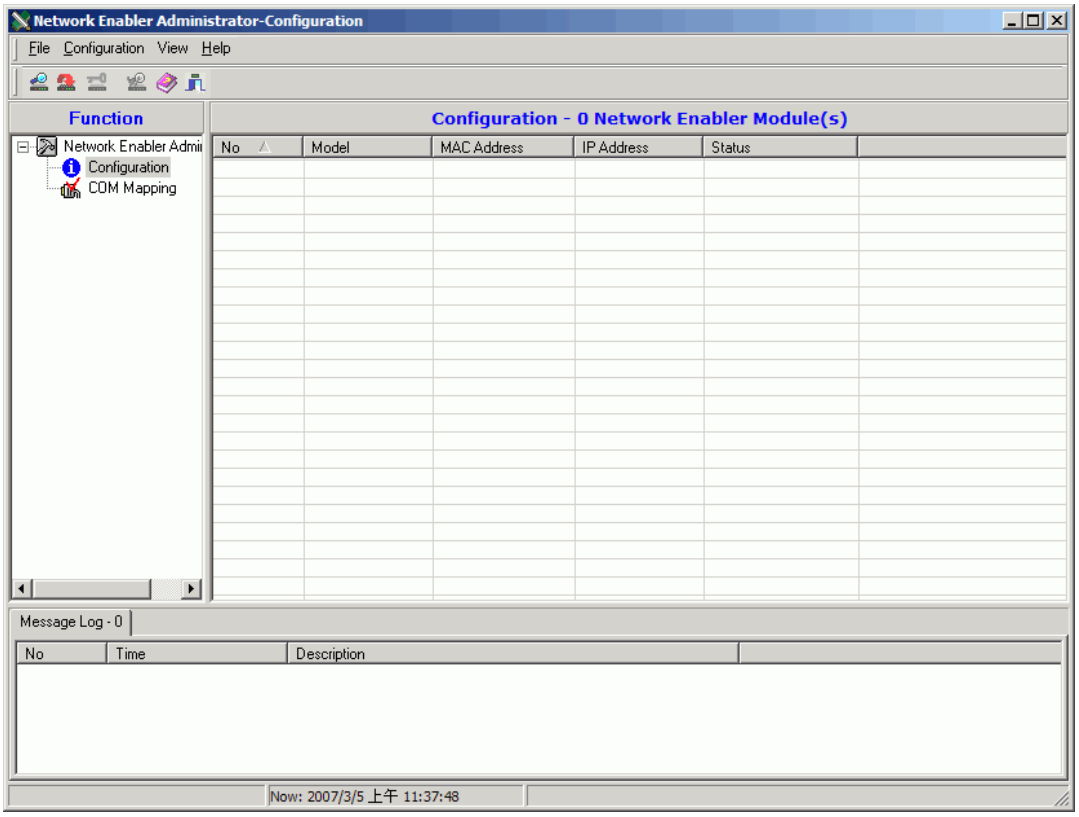
Ⅲ. Install Network Enabler Administrator

1. Execute install program in SYRIS CD:

   SYRIS Xtive CD-ROM\SYRD245-1\Driver\ Network Enabler Administrator 2.8 Setup.exe

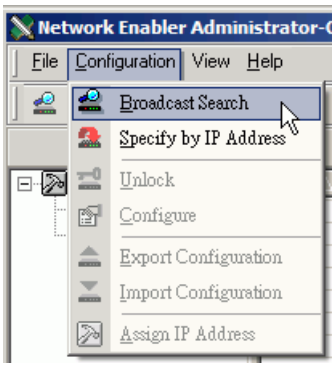
2. Execute Network Enabler Administrator program after install.



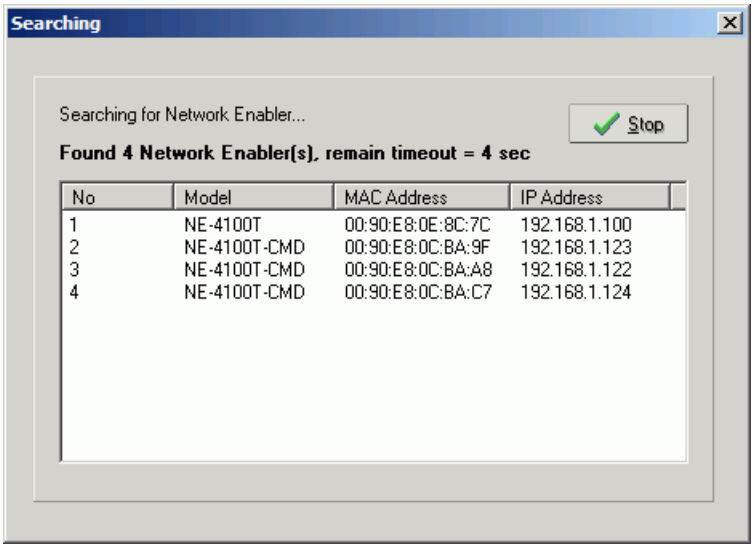


Ⅳ. Setup Network Enabler Administrator

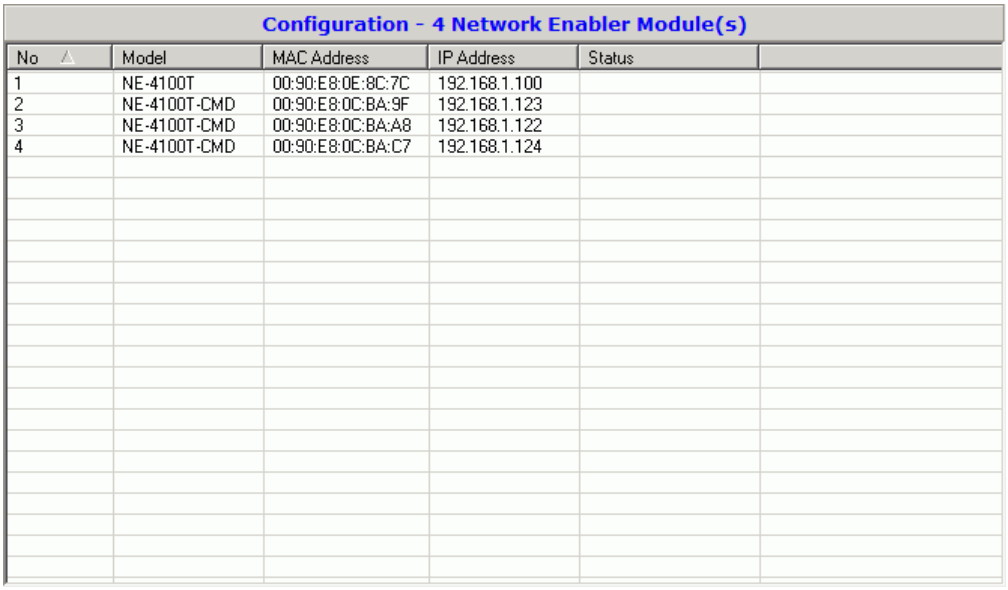
1. Click on Configuration from the menu bar, and then select Broadcast Search from the drop-down menu.



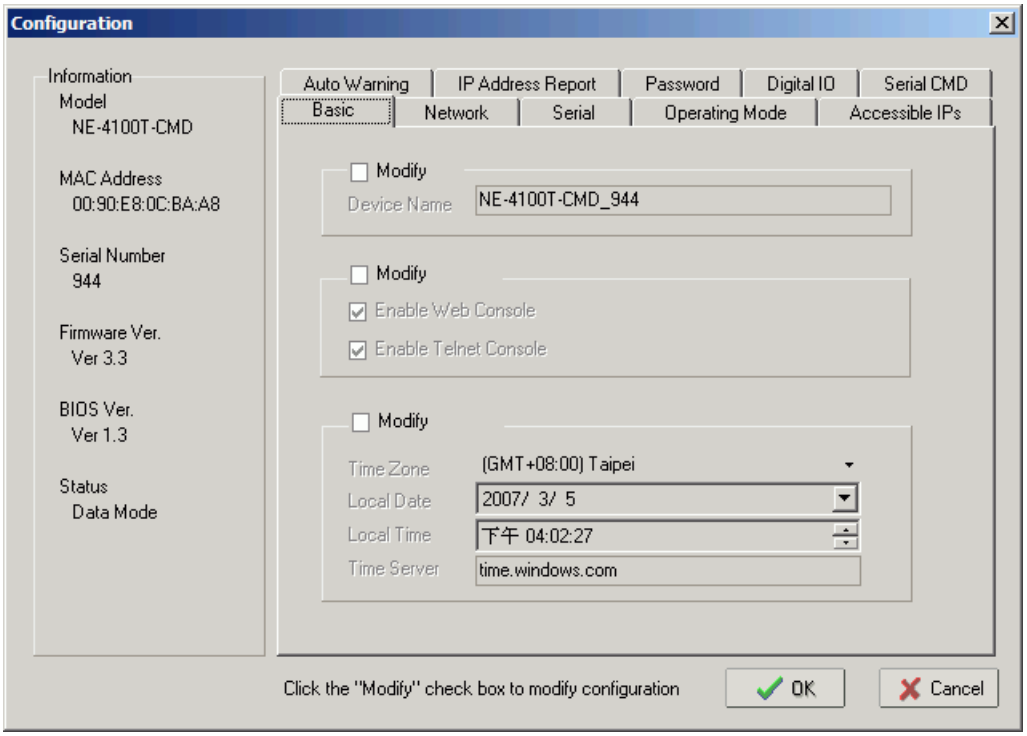
2. A Searching window will open, showing that the program is searching for network module connected to this network.



3. After the search is finished, all network module found will be shown in the right panel of the Configuration 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.



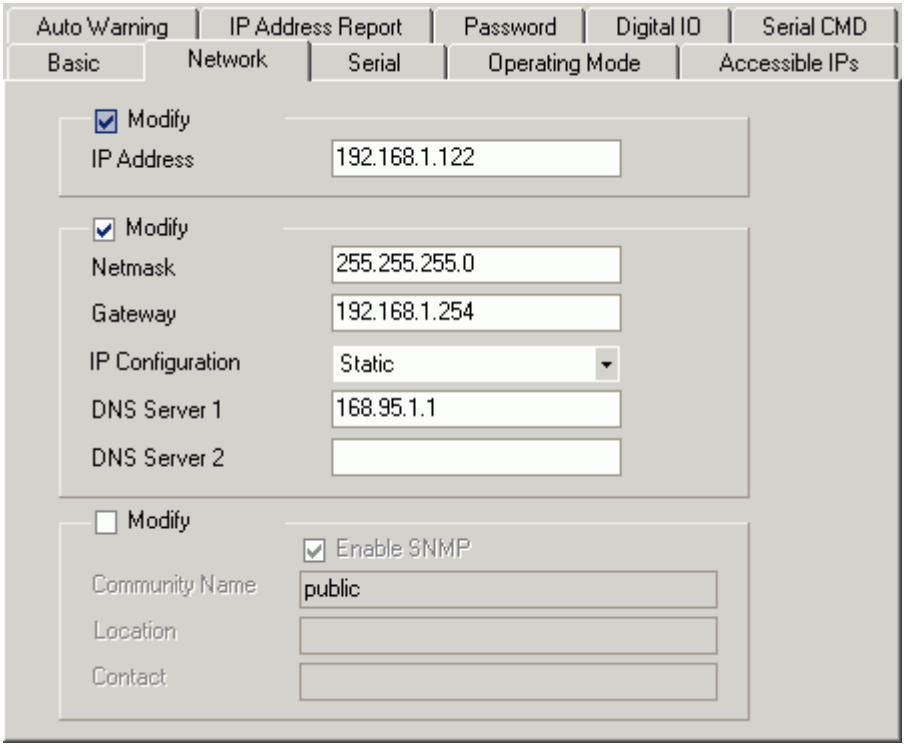
4. Double click selected network module you wish to configure, the Configuration window will open.



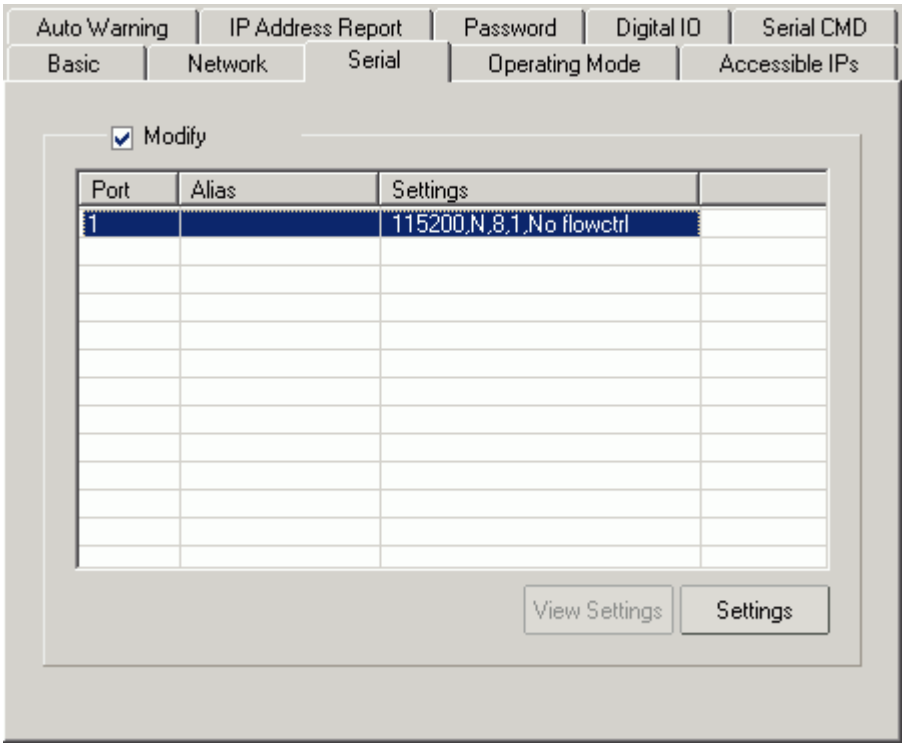
5. The Configuration window has 9 tabs: Basic, Network, Serial, Operating Mode, Accessible IPs, Auto Warning, IP Address Report, Password and Digital IO.
   SYRIS SYRD245-1N series will use 3 tabs in network module. (Network, Serial and Operating Mode), we will show more detail with these parts below.

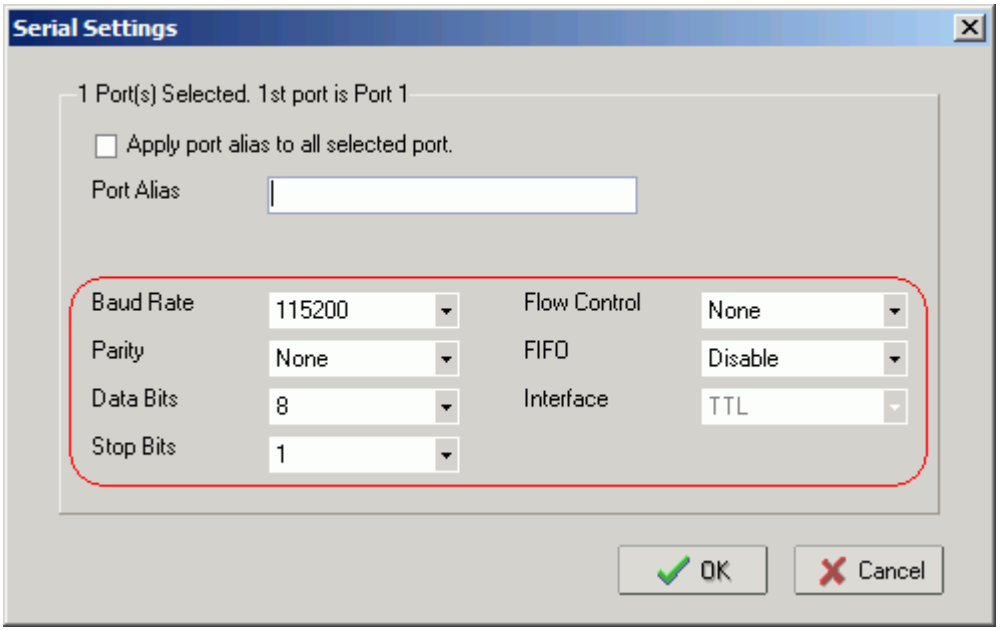
6. Network: You must assign a valid IP address to network module before it will work in your network environment. Your network system administrator should provide you with an IP address and related settings for your network. The IP address must be unique within the network. You can choose from four possible IP Configuration modes: Static, DHCP, DHCP/BOOTP and BOOTP.

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



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

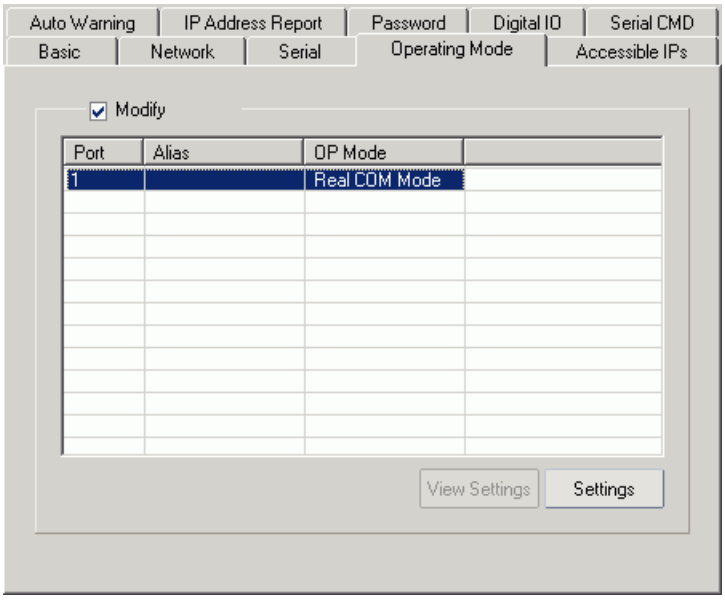




8. Operating Mode:
   Three different Socket Modes and one real COM modes are available: TCP Server, TCP Client, and UDP Server/Client. The main difference between the TCP and UDP protocols is that TCP guarantees delivery of data by requiring the recipient to send an acknowledgement to the sender. UDP 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.

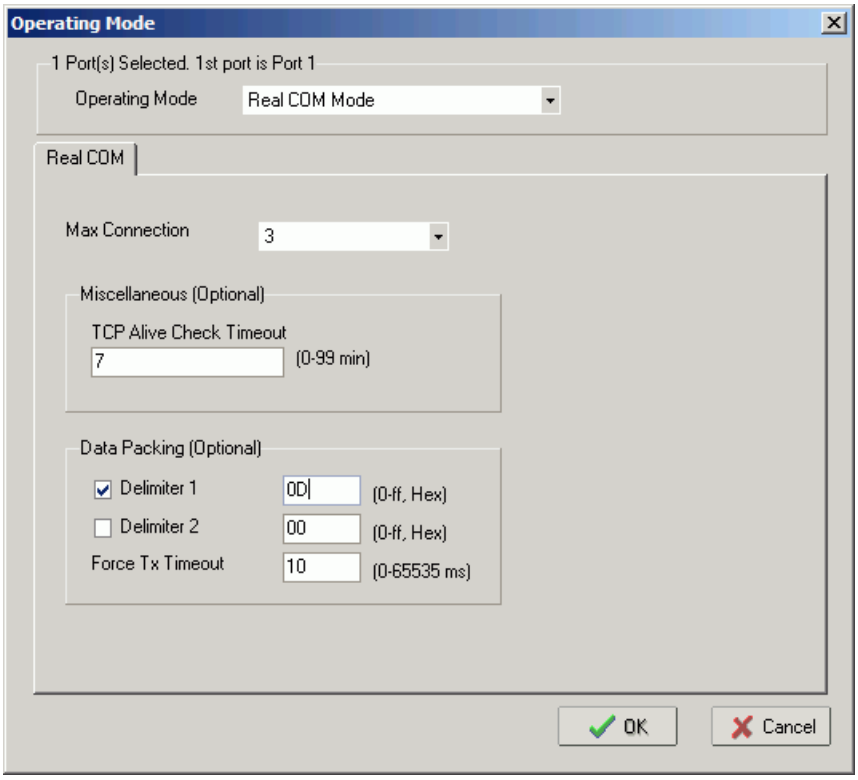
Ⅴ. Real COM mode

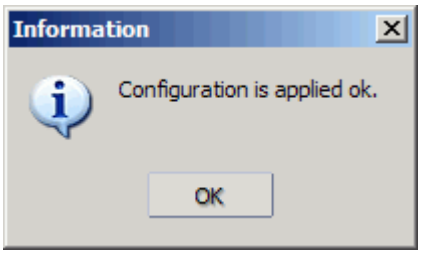
➢ Setting Operating Mode



Select Modify and chose COM port to change operating mode.

Change operating mode to “Real COM Mode” and press “OK” to submit the settings.

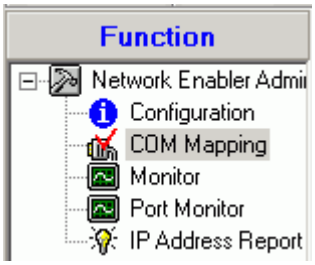




➢ **COM Mapping**

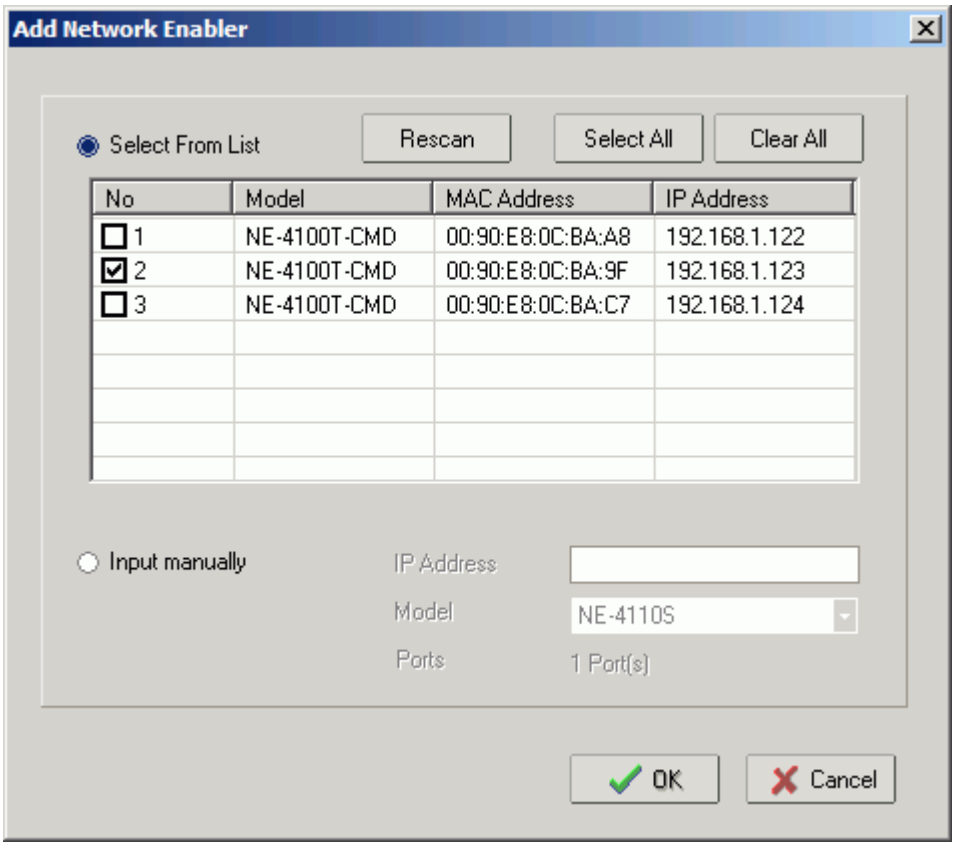
1. Broadcast Search for network module on the network.

2. Select the COM Mapping in function group.

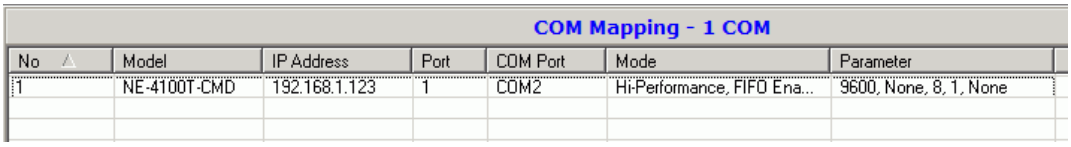


3. Add the target to which you would like to map COM ports.

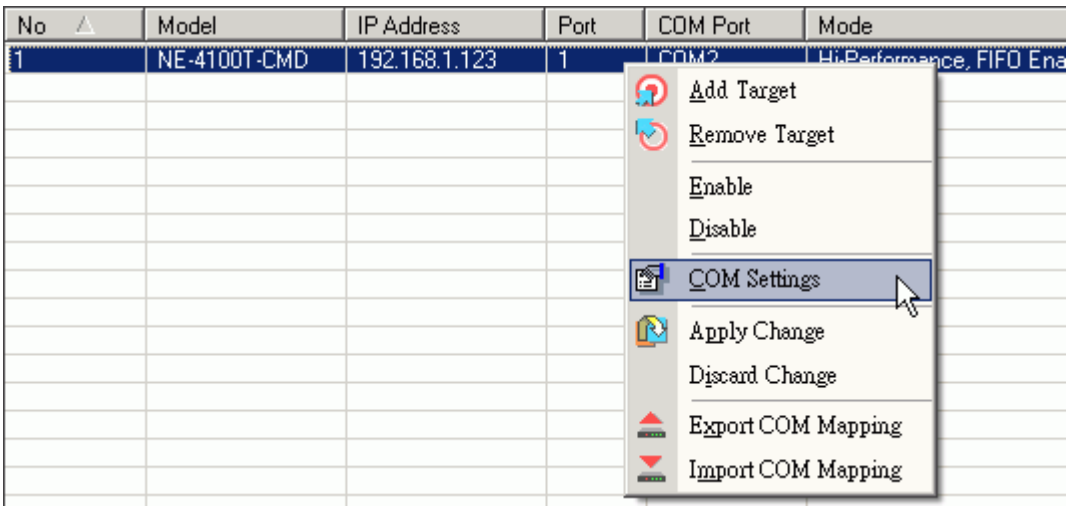
4. The network modules list that appears will be based on the Broadcast Search on the Configuration. Select the network modules to which you want to map COM ports.



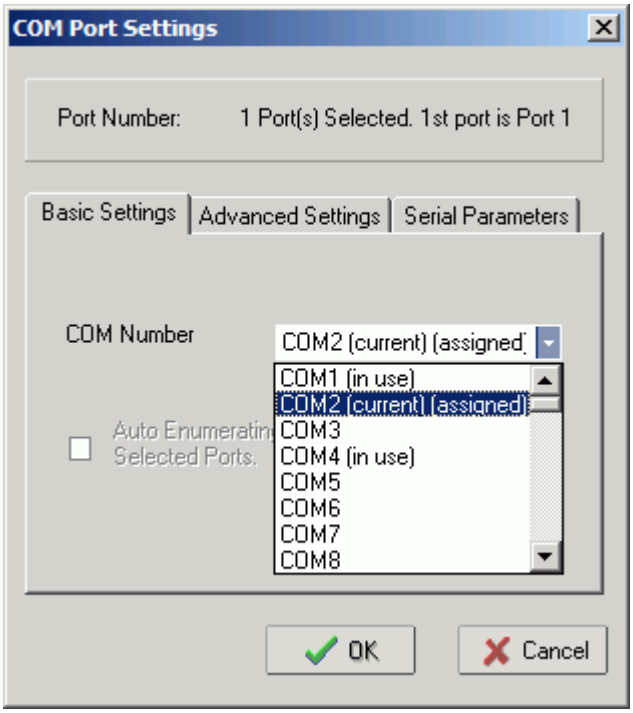
5. System will auto match a COM port with selected network modules.



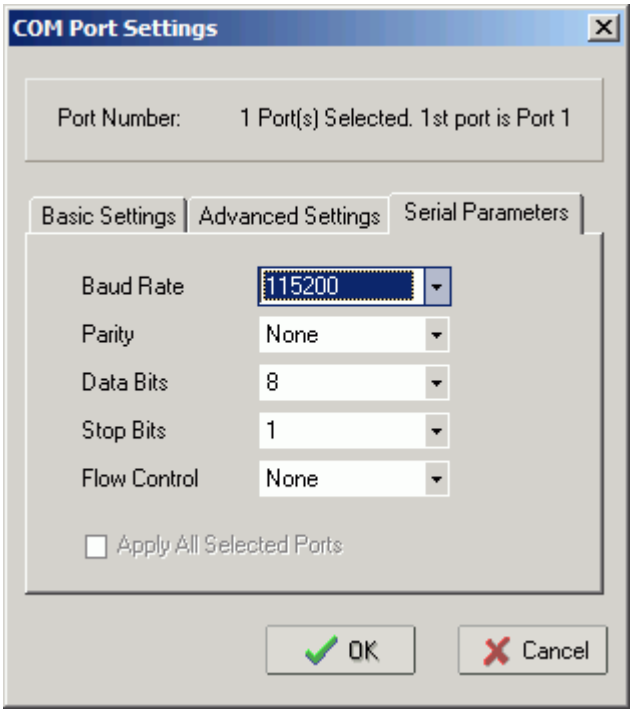
6. Select COM Setting to modify COM No., default setting, etc.



7. Select the COM Number. Those “in use”, “assigned” COM ports will also be indicated in this dialog window.



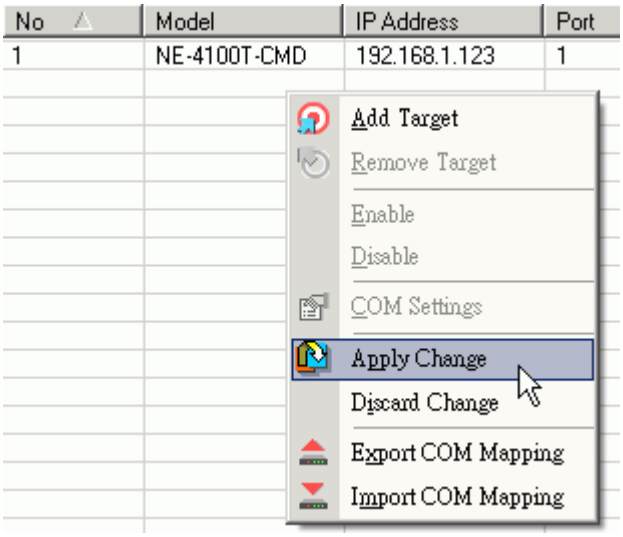
8. Set COM port parameter settings as below diagram.

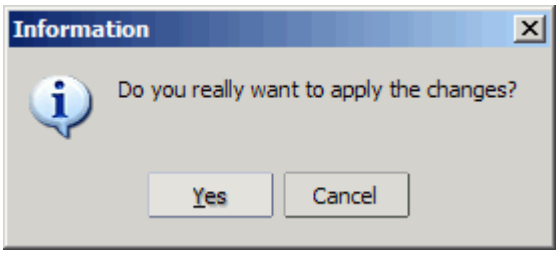


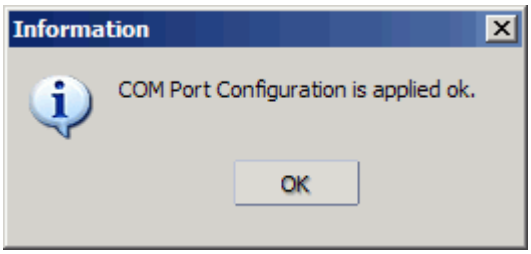
COM Mapping - 1 COM

No	Model	IP Address	Port	COM Port	Mode	Parameter
1	NE-4100T-CMD	192.168.1.123	1	COM2	Hi-Performance, FIFO Ena...	115200, None, 8, 1, None

9. After set the COM Mapping, remember to select Apply Change to save the information in the host system registry. The host computer will not be able to use the COM port until after selecting Apply Change.



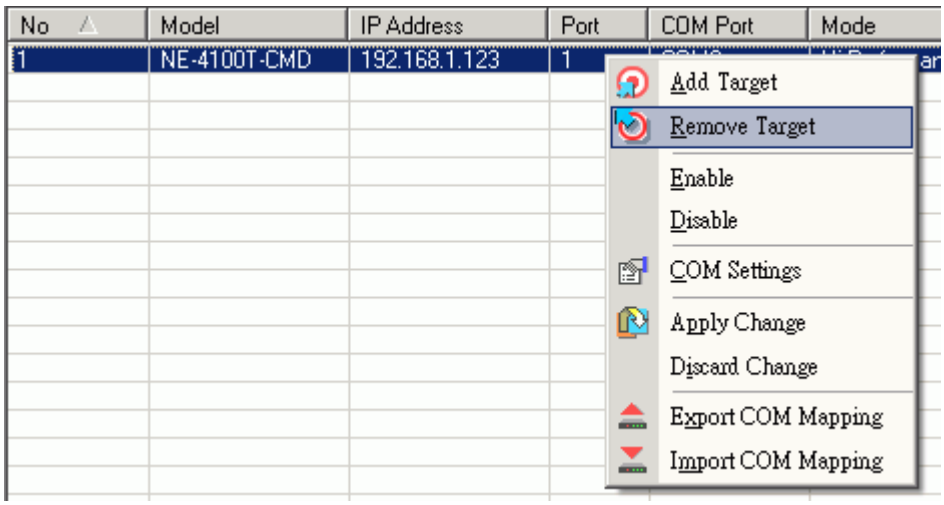




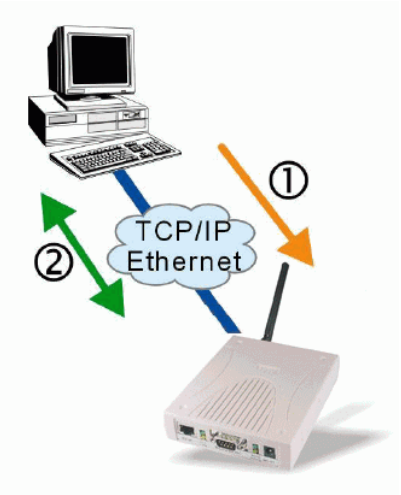
10. When you finished COM Mapping, you can execute SYRIS Xtive Utility program to read TAG and set parameters.
(Please refer to Xtive Utility user manual)

➢ Remove COM Mapping

Select Remove Target and Apply Change to remove COM Mapping with host.

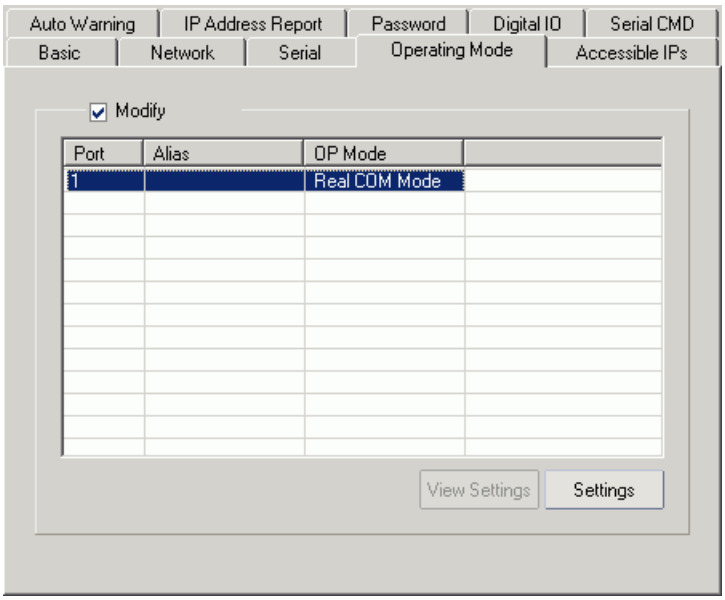


Ⅵ. TCP Server Mode



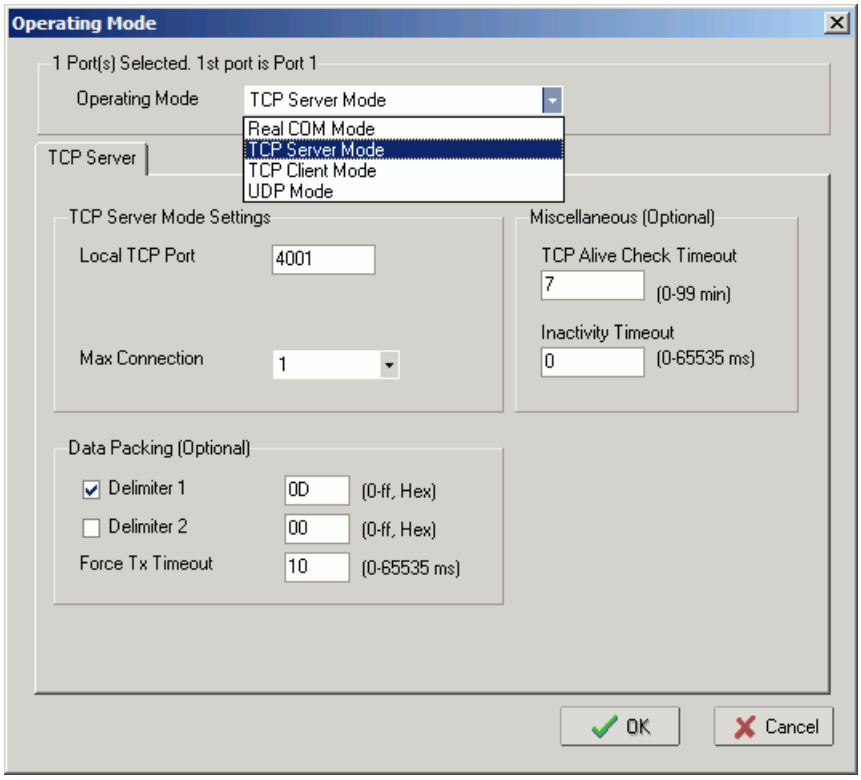
In TCP Server mode, SYRD245-1N-M reader provides a unique IP:Port address on a TCP/IP network. SYRD245-1N-M reader wait passively to be contacted by the host computer, allowing the host computer to establish a connection with and get data from the serial device.

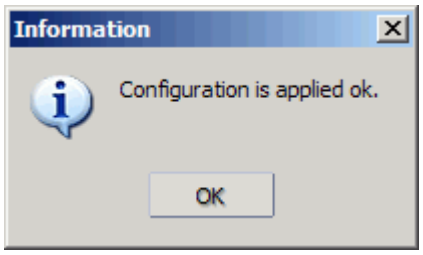
1. Setting Operating Mode



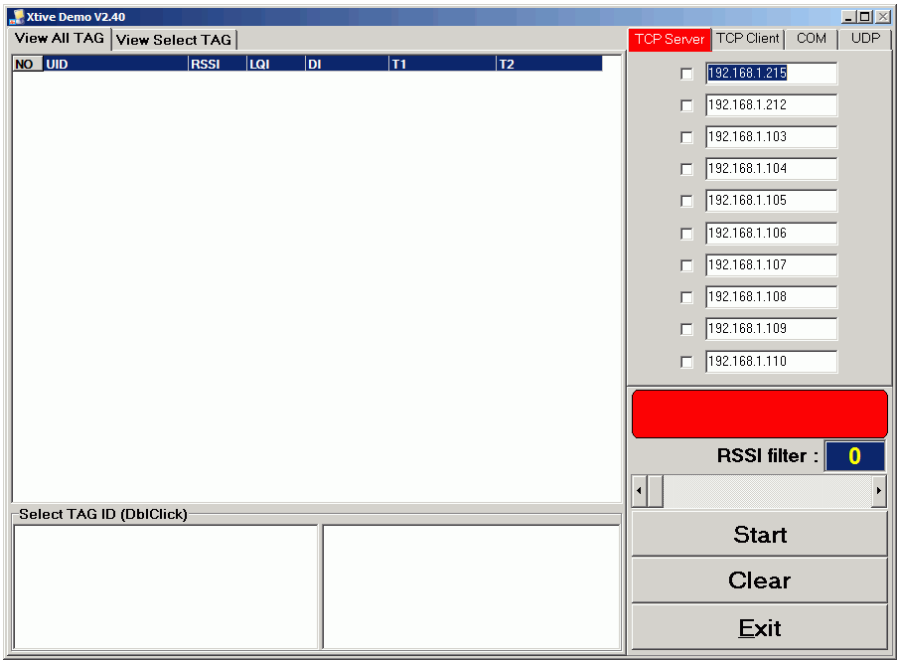
Select Modify and chose COM port to change operating mode.

Change operating mode to “TCP Server Mode” and press “OK” to submit the settings.

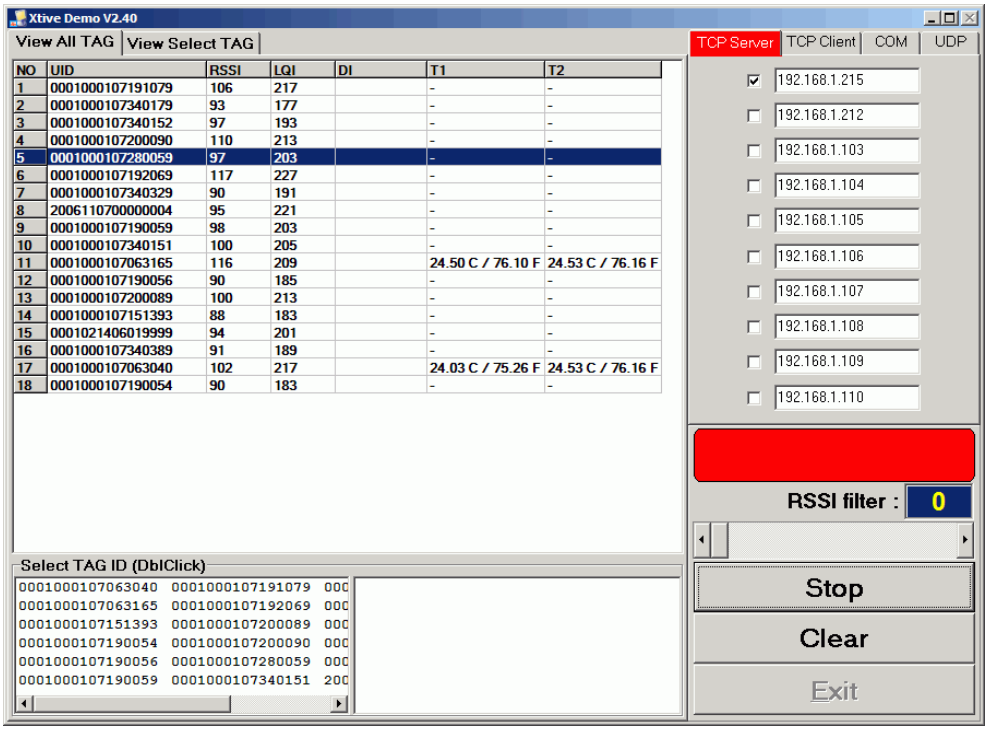




2. When you finished change operating mode, you can execute SYRIS Xtive demo program to read TAG.
   (SYRIS Xtive CD-ROM\SYRD245-1\Utility\XtiveDemo.exe)



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



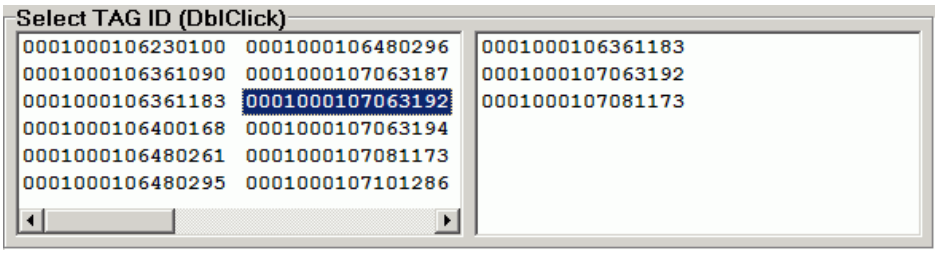
Starting read TAG will receive Tag information from reader.

4. Field Introduction:

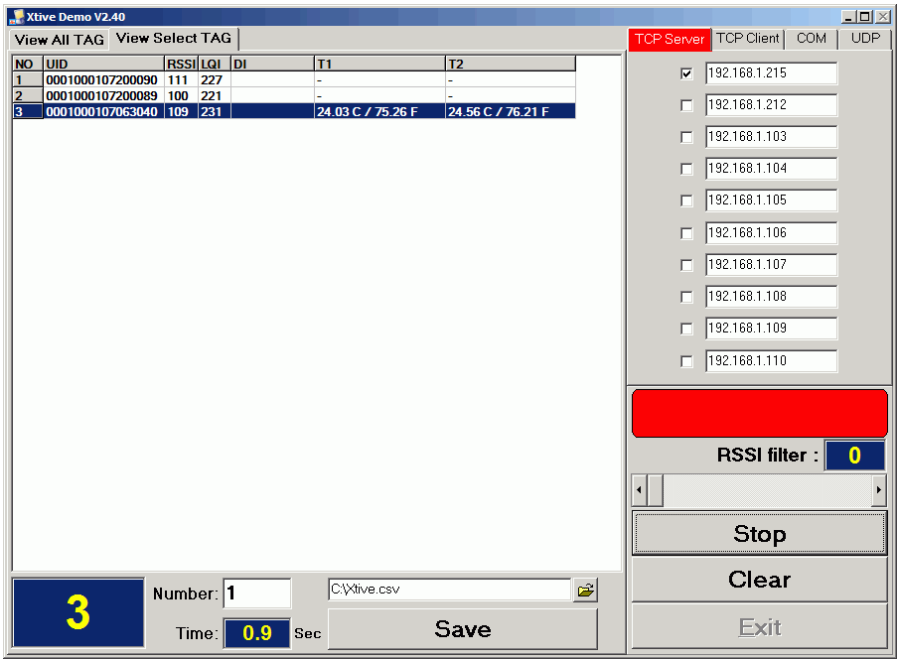
a. UID: Tag's identification number.
b. RSSI: Received Signal Strength Indication (0-255). Reading range and RSSI are inverse proportion.
c. LQI: Link quality indicator (0-255).
d. DI: TAG status and indicator.
[BAT] means TAG battery was low.
[SW] means TAG call button was clicked.
[SENSOR] means light sensor have detect light. (Only for Wristband TAG)
[START] means TAG restart.
e. T1: Ambient temperature sensor (Only for Wristband TAG)
f. T2: Skin temperature sensor (Only for Wristband TAG)

Note: T1 / T2 / SENSOR use for anti-tamper capability.

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

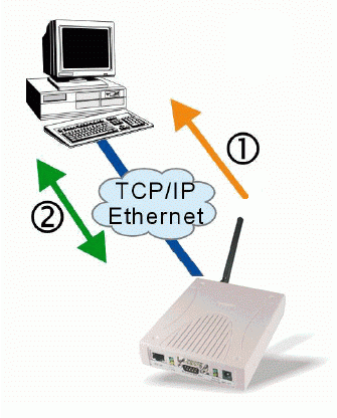


6. Select “View Select TAG” tab to get target TAG information.

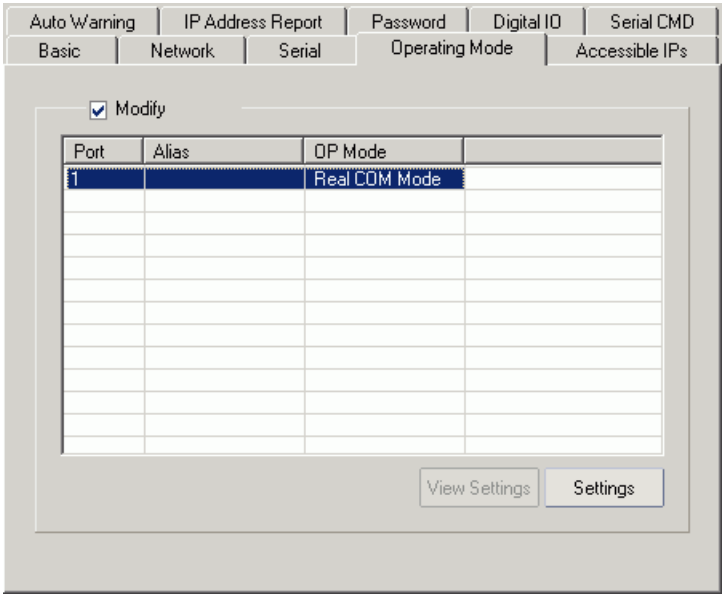


Ⅶ. TCP Client Mode

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

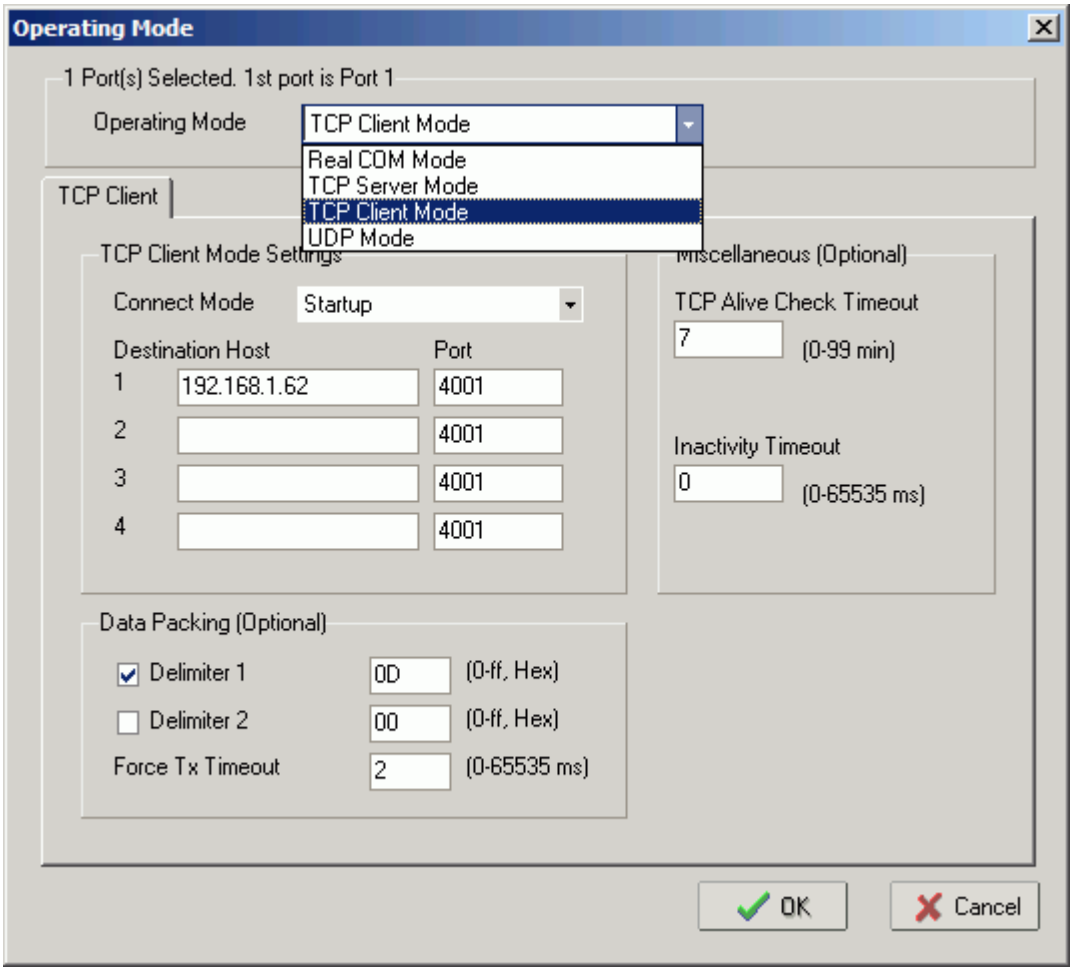


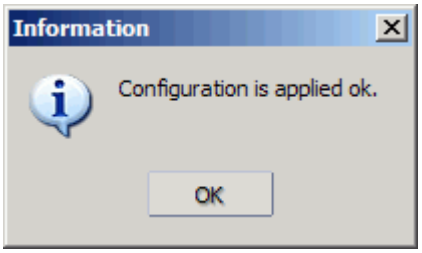
1. Setting Operating Mode



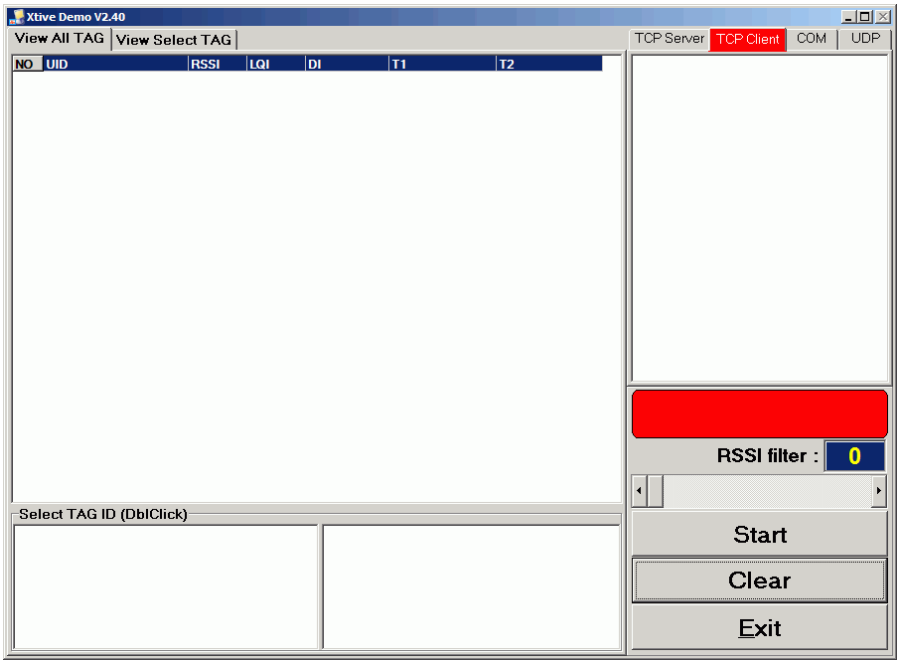
Select Modify and chose COM port to change operating mode.

Change operating mode to “TCP Client Mode” and “Destination Host” IP address than press “OK” to submit the settings.

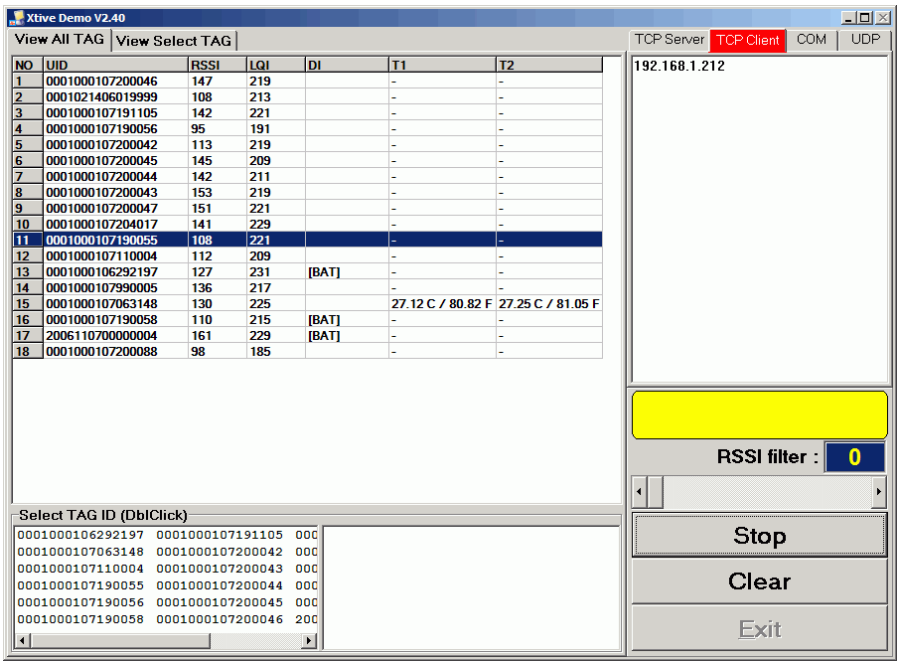




1. When you finished change operating mode, you can execute SYRIS Xtive demo program to read TAG.
   (SYRIS Xtive CD-ROM\SYRD245-1\Utility\XtiveDemo.exe)

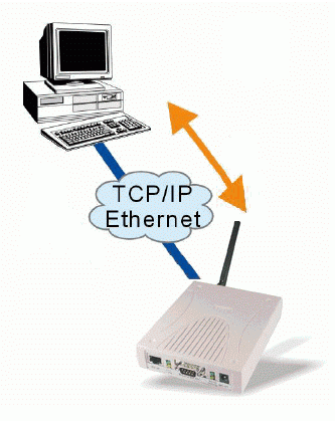


2. Select “TCP Client” Tab and starting read TAG will receive Tag information from reader.

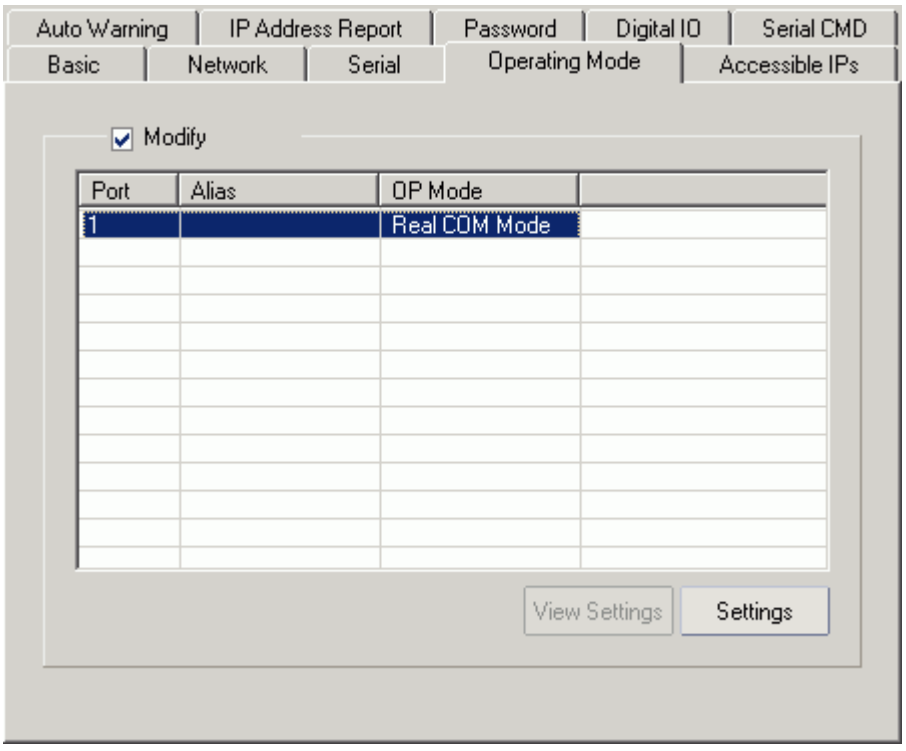


Ⅷ. UDP mode

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

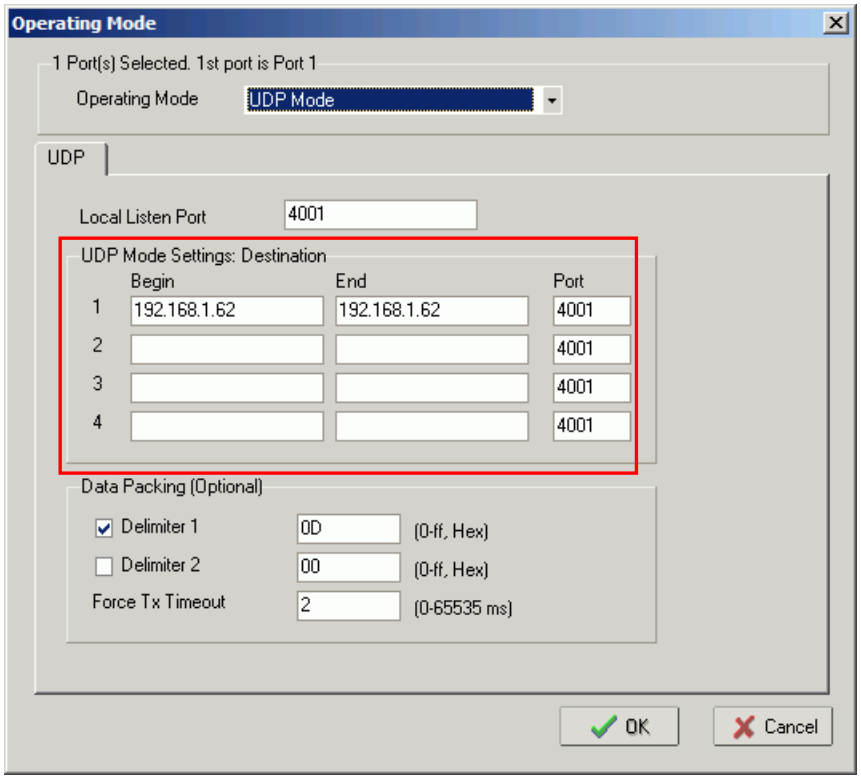


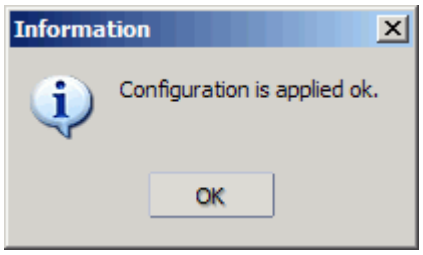
1. Setting Operating Mode



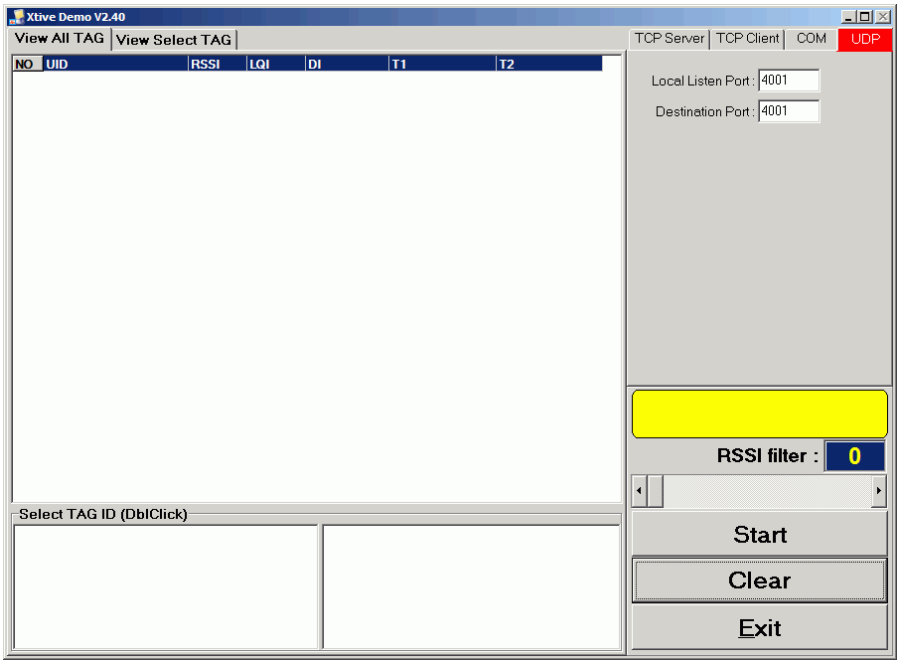
Select Modify and chose COM port to change operating mode.

2. Change operating mode to “UDP Mode” and “Destination” IP address than press “OK” to submit the settings.

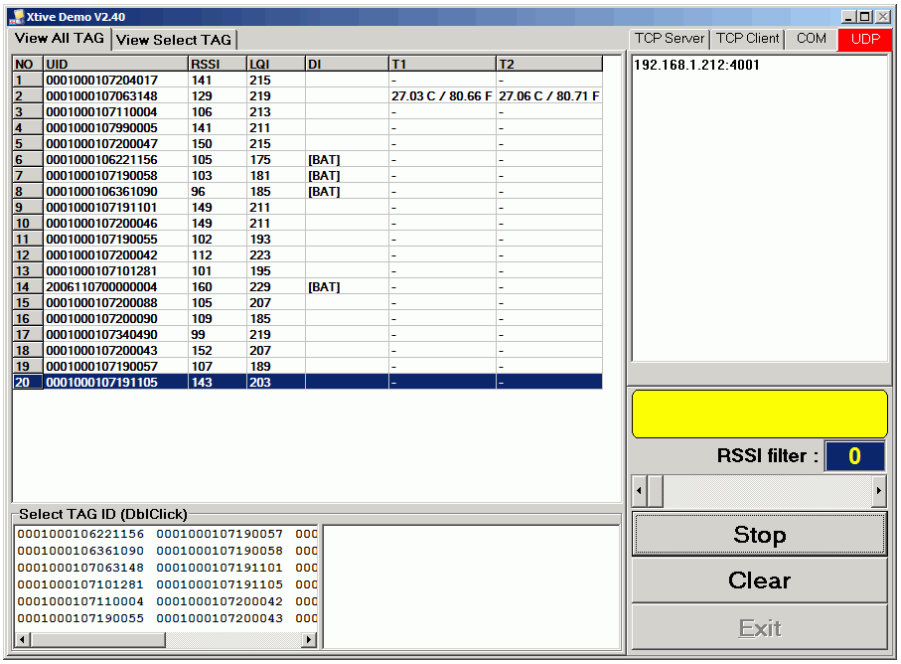




3. When you finished change operating mode, you can execute SYRIS Xtive demo program to read TAG.
   (SYRIS Xtive CD-ROM\SYRD245-1\Utility\XtiveDemo.exe)



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



FCC statement in User's Manual (for class B)

"Federal Communications Commission (FCC) Statement

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

1.The device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

2.This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

3. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.