How to Configure USDG Data mode in EKI-1500 series

Overview

When SCADA software that can directly use TCP socket to communicate with serial terminal device/equipment. That can choose USDG Data TCP mode in EKI-1500/ADAM-457x series device server. In this TCP mode, we support three different way to access. First one is TCP Client, TCP Server and TCP Peer-to-Peer mode.

Compare with Virtual COM mode, USDG Data TCP mode does not need installed VCOM driver in PC and directly send TCP packet communicate with serial device server. This can be the another option send/receive with serial terminal device.

Three different type of USDG Data Mode

1. USDG Data TCP Server Mode

PC actively build up TCP communication with serial device server and send TCP data to the serial display equipment.

2. USDG Data TCP Client Mode

When serial device actively send data to PC. Serial device server build-up TCP communication with PC. Like bar-code actively send data to PC.

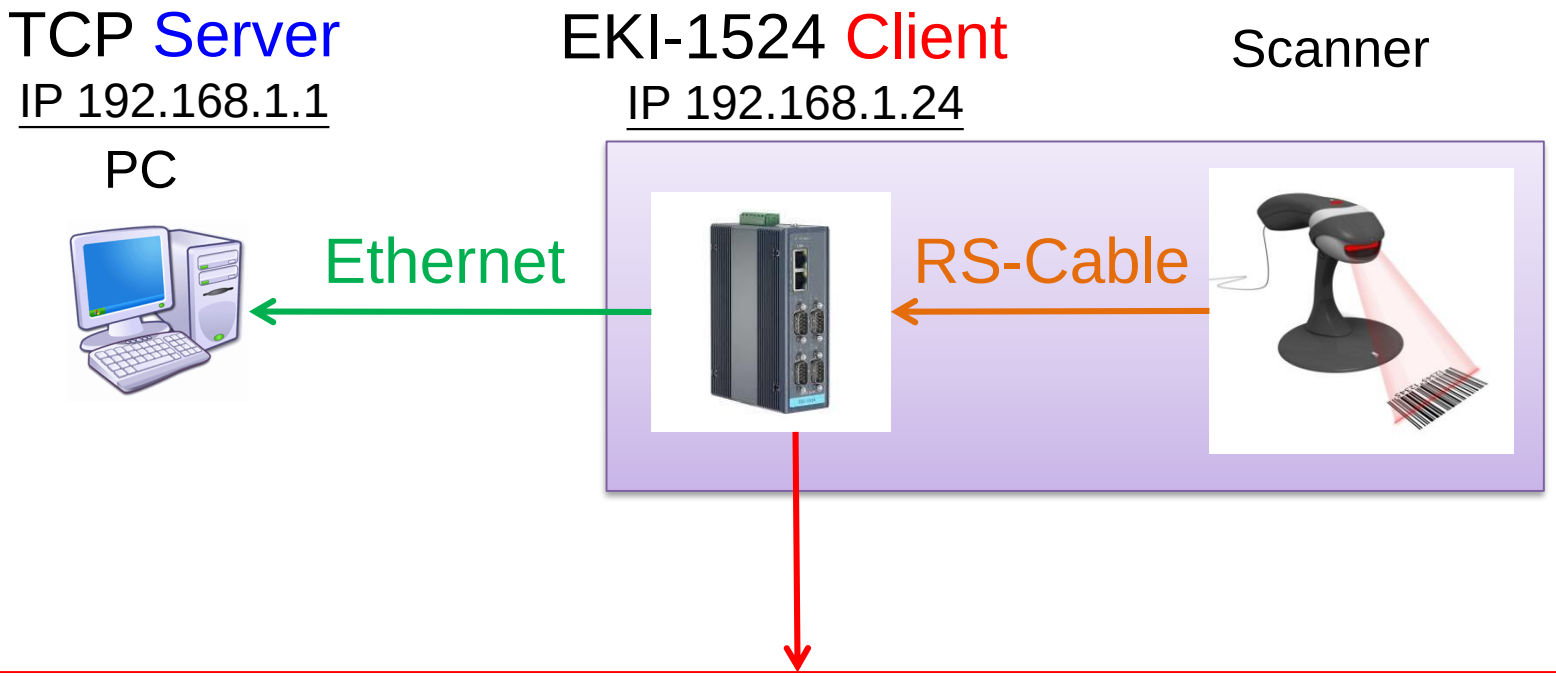
Three different type of USDG Data Mode

3. USDG Data TCP Peer-2-Peer Mode

when two serial PLCs would like to communicate that can choose Peer-2-Peer mode to access. Make sure the initial PLC that connect with TCP Client mode and another would Server mode.

How to Configure USDG Data TCP Client Mode

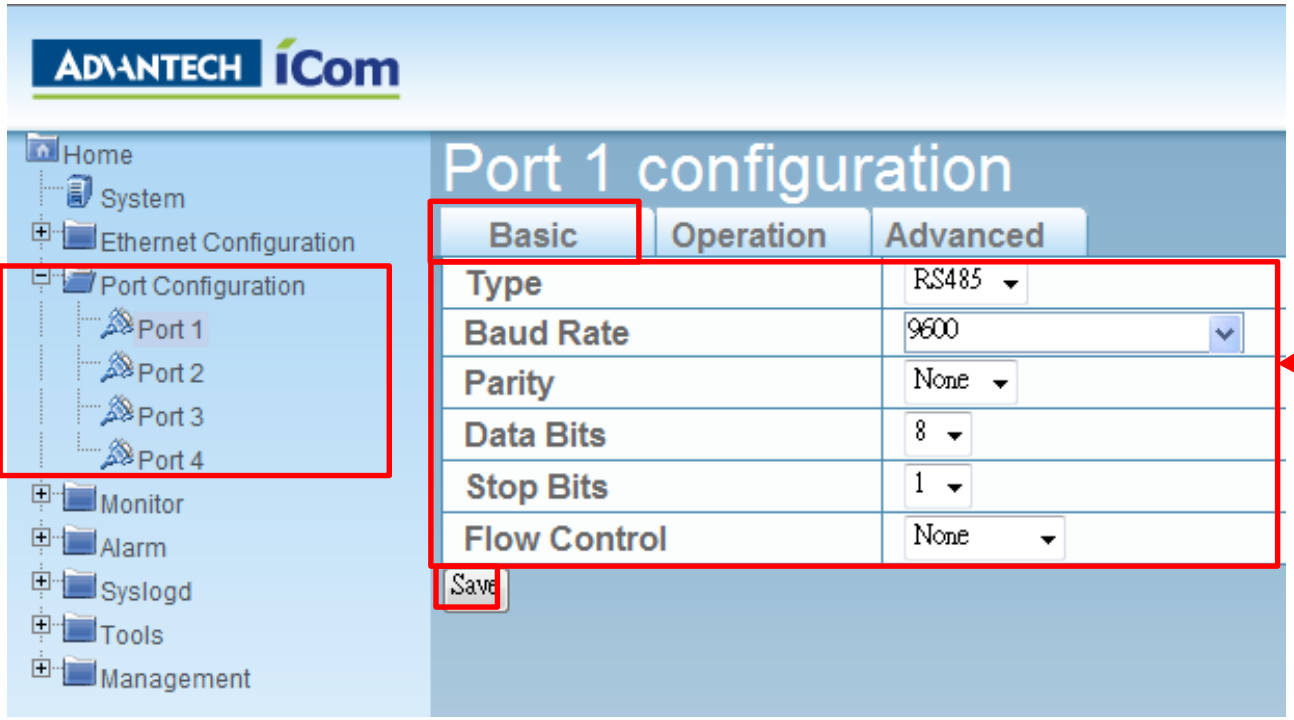
Topology of USDG Client Mode



In the initial connection, Device server send data by RS-Cable
After connected, data can be sent by both side

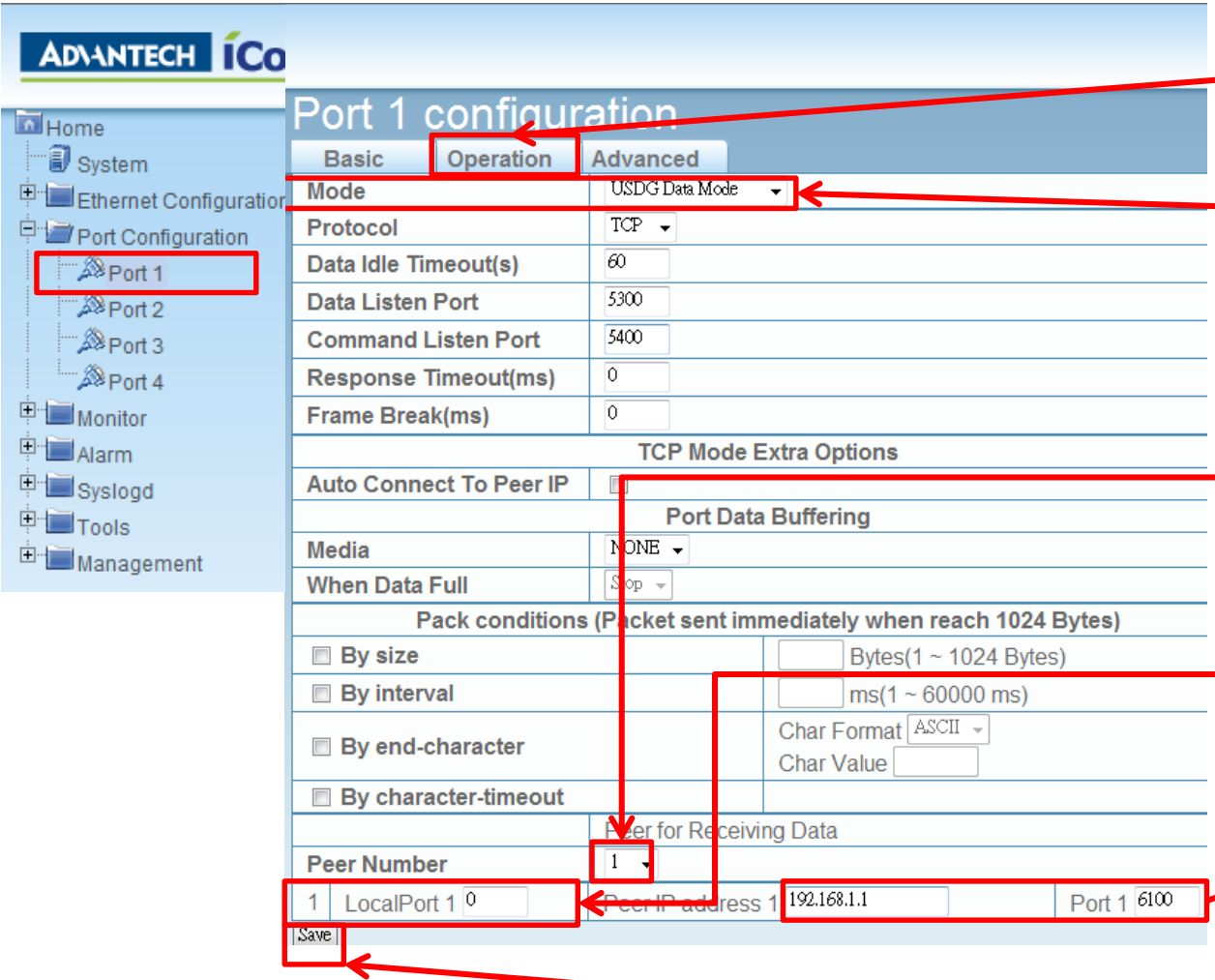
To Configure the USDG Client Mode

- Use web browser connect to device server with IP 192.168.1.54



1. To Configure the "Basic" part first, then "Save" it

To Configure the USDG Client Mode



2. Click “Operation”

3. Select to USDG Data Mode

4. Add 1 Peer Port for receiving data

5. TCP Port of DS, Set to 0 means auto assign by EKI

6. Fill in the IP address of TCP Server and TCP Port for receiving the data

7. Save it

To Configure the USDG Client Mode

- Save the configuration and reboot to initialize the changes

3. Click "**Yes**" to reboot the DS

1. Click "**Tools**"

2. Click **"Reboot"**

How to Test USDG Data TCP Client Mode

Test Tool: TestView

Using the 3rd party tool TestView to verified:

1. **Convenience：**
   - ✓ You only need one computer with Ethernet and COM port, then you can do all of test in this application
2. **Powerful Function：**
   - ✓ You can simulate both side as TCP/UDP Server/Client or COM Port
3. **Easy to Use**
4. **Compatibility with Windows:**
   - ✓ It's compatible with Windows XP and 7

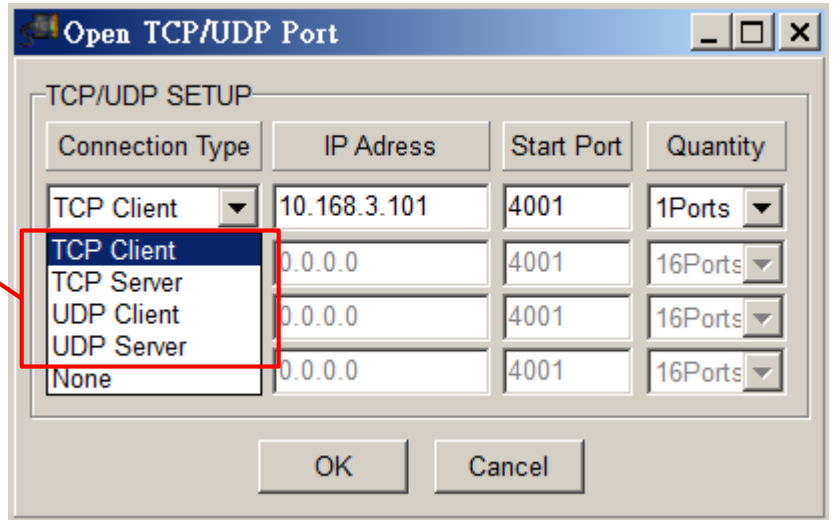
For more information, please reference to this below URL:
http://solvline.com/eng/download_center/download_new.php?dno=3&fno=2&c2=49

TestView V2.5

- Can Simulate Server and Client using both TCP and UDP to test USDG mode of the device server.

Connect to:

- TCP/UDP Server：PC act as a server and waiting connection from EKI (act as a client)
- TCP/UDP Client：PC act as a client and will try to connect to EKI (act as a server)



Test the USDG Client Mode

Topology

EKI-1524 Client

IP 192.168.1.22

PC

Ethernet

RS-Cable

PC

TCP Server

IP 192.168.1.1

Working as scanner

Test it by TestView

To Configure the TCP Server

EKI-1524 Client

IP 192.168.1.22

PC

Ethernet

RS-232

PC

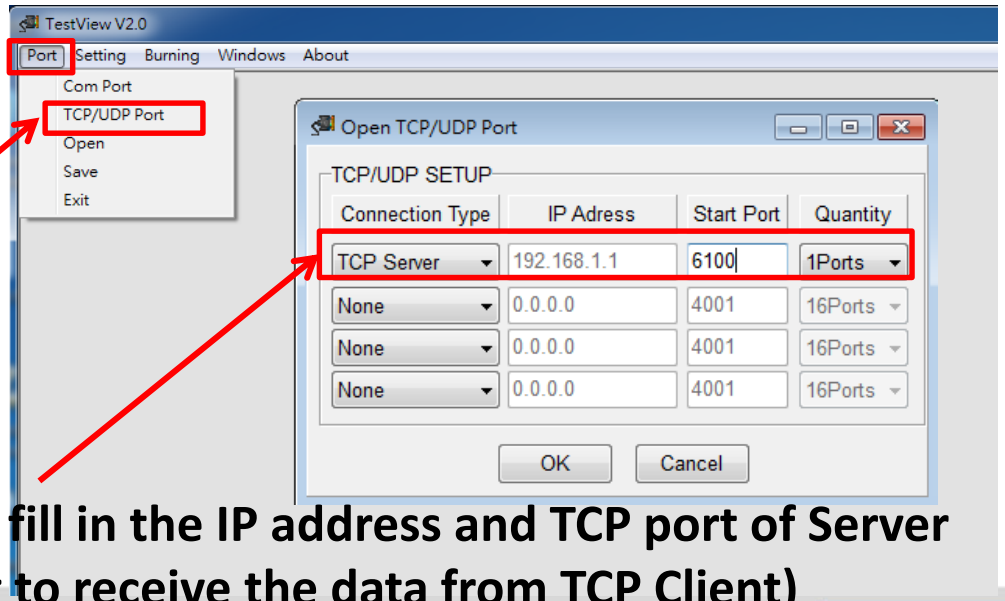
TCP Server

IP 192.168.1.1

Working as scanner

1. Click Port

2. Select TCP/UDP Port



3. Select TCP Server, and fill in the IP address and TCP port of Server (TCP Port is using to receive the data from TCP Client)

To Configure the COM port

EKI-1524 Client

IP 192.168.1.22

TCP Server

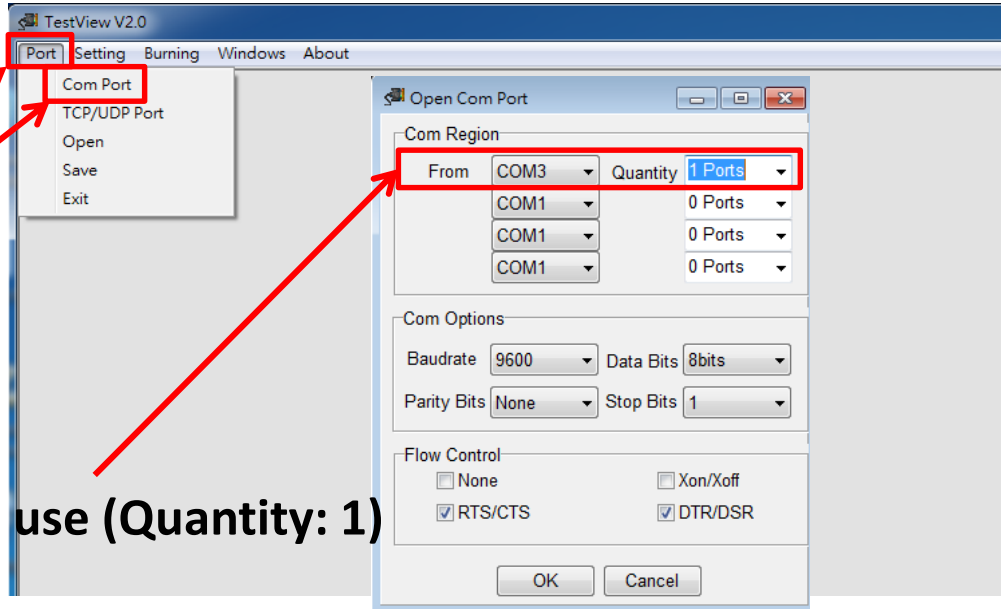
IP 192.168.1.1

Working as scanner

1. Click Port

2. Select COM Port

3. Which port you want to use (Quantity: 1)



TCP Server
IP 192.168.1.1

EKI-1524 Client
IP 192.168.1.22

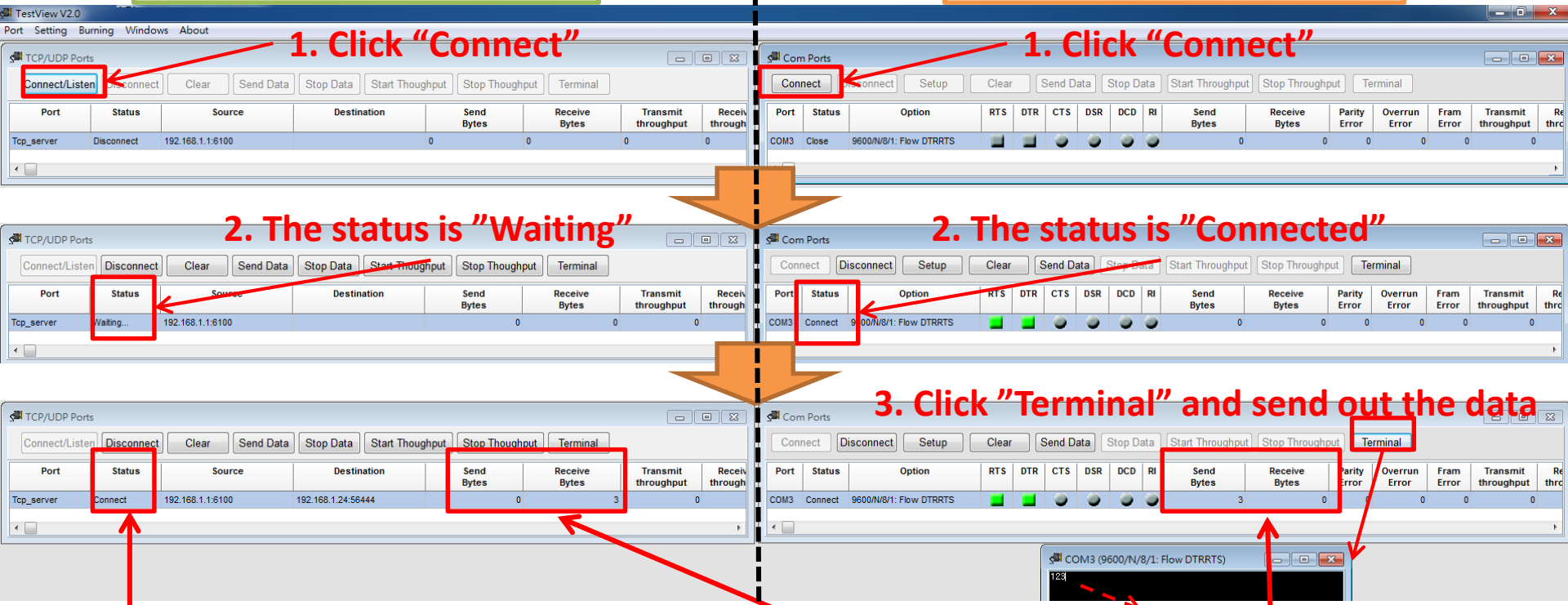
Working as scanner

Ethernet

RS-232

Left side is the TCP Server

Right side is the COM Port



1. Click "Connect"

1. Click "Connect"

2. The status is "Waiting"

2. The status is "Connected"

3. Click "Terminal" and send out the data

Then the status has become "Connected",
Means the session has connected completely

4. Key in the character: 123,
and observe the byte has increased

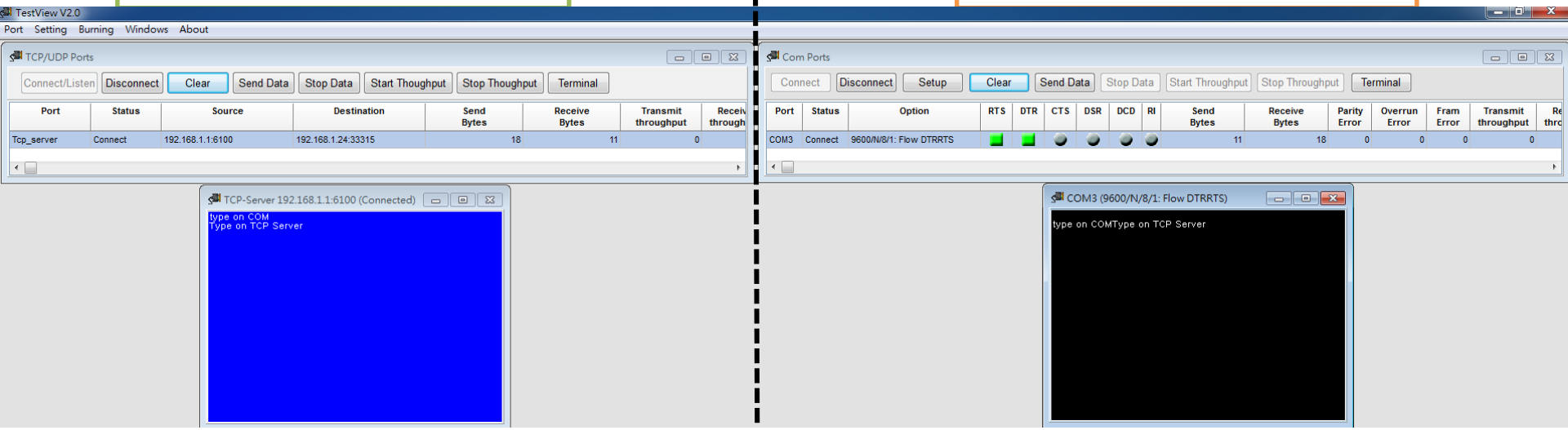
TCP Server
IP 192.168.1.1

EKI-1524 Client
IP 192.168.1.22

Working as scanner

Ethernet

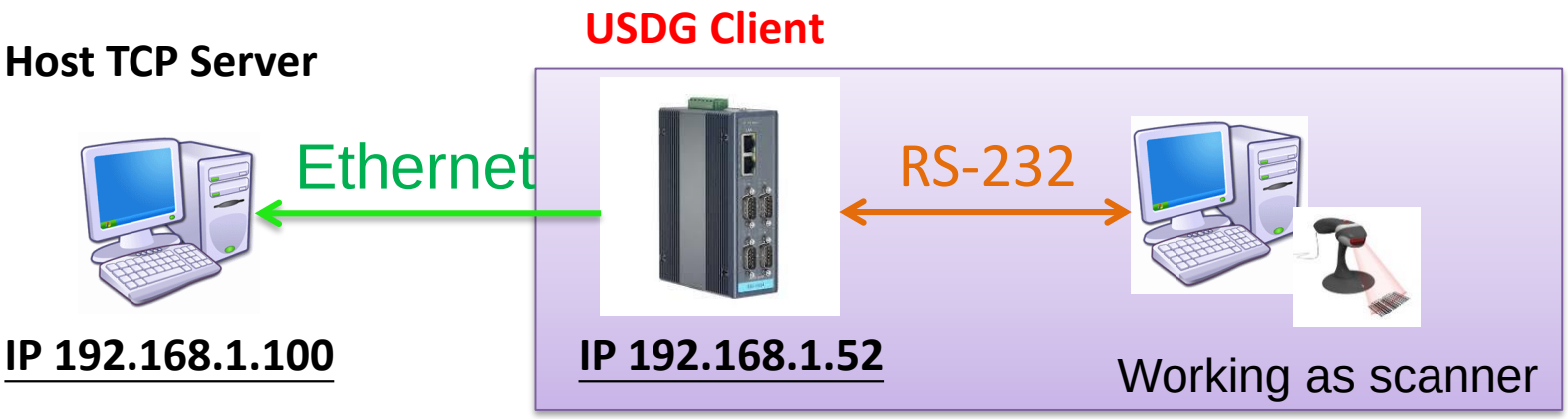
RS-232



After connection, data can be sent by both side

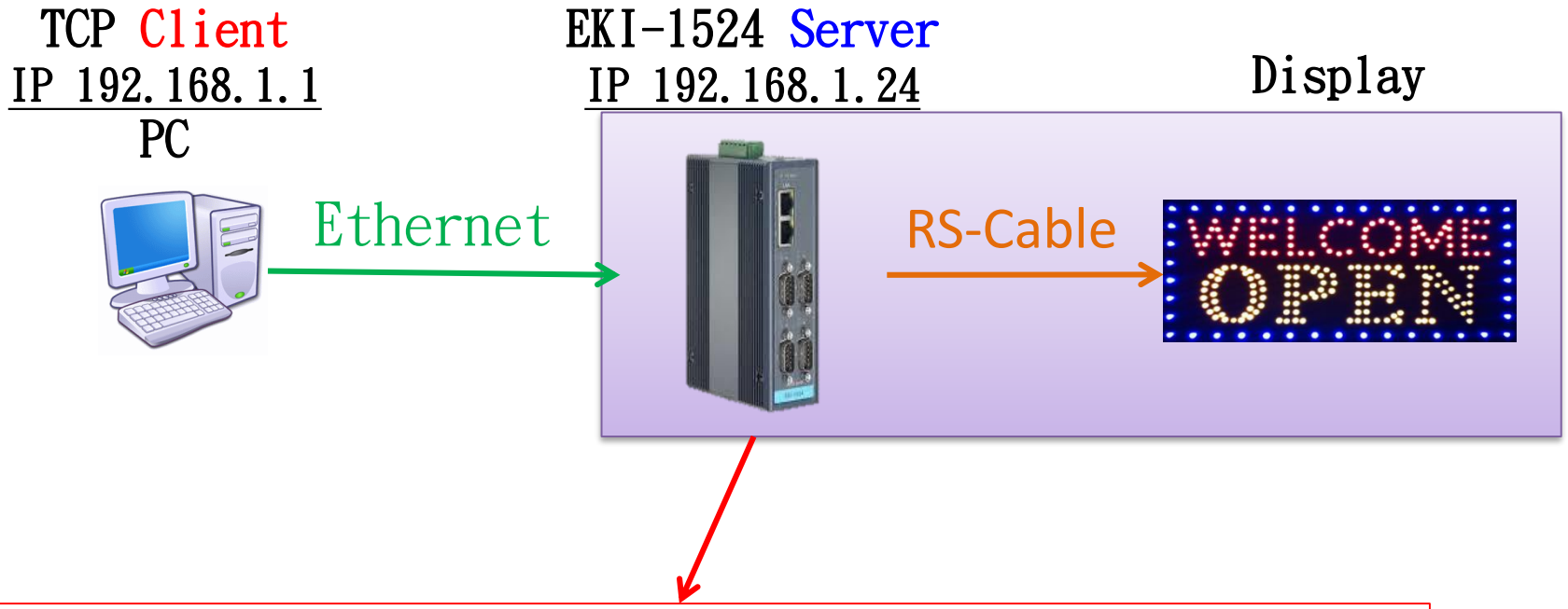
Tips !

Host TCP Server		USDG Client of EKI	
		192.168.1.52	Ethernet IP
IP Address	192.168.1.100	192.168.1.100	Peer IP Address
		Any	Local Port
Data Listening Port	6100	6100	Peer TCP Port



How to Configure USDG Data TCP Server Mode

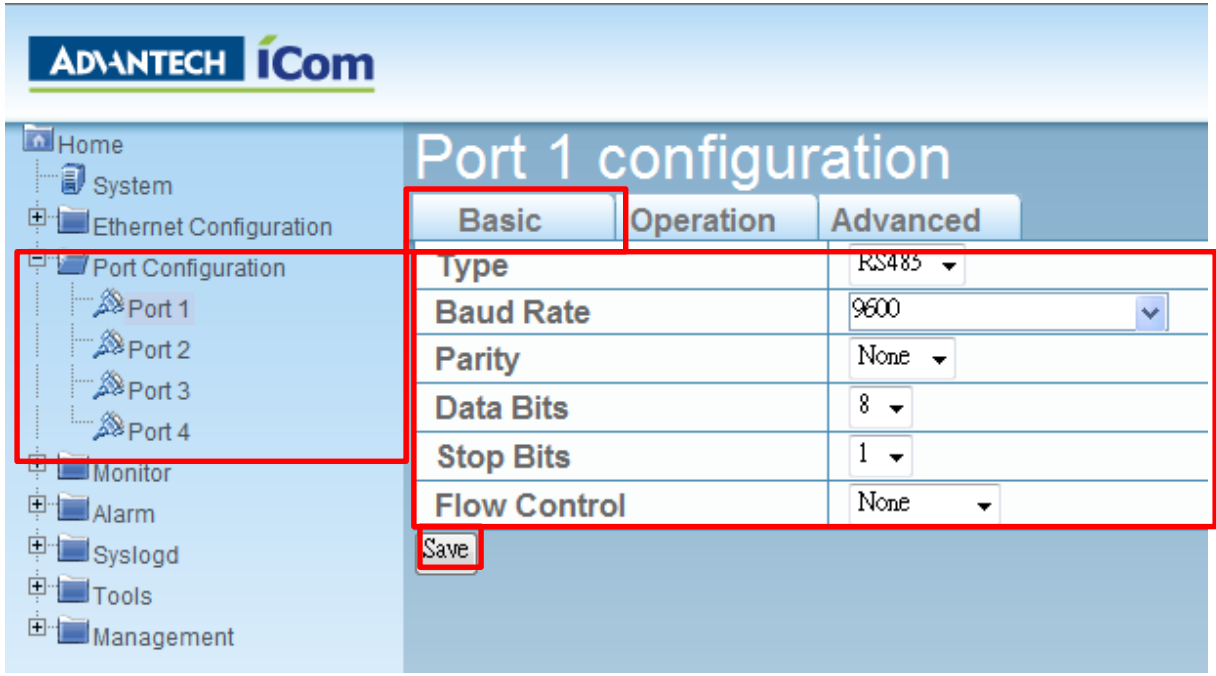
Topology of USDG Server Mode



Device server is using the TCP port to listen the data
from the client over the Ethernet.
Device server will accept this session, after receiving the request.
And uses the TCP listening port to send/ receive the data.

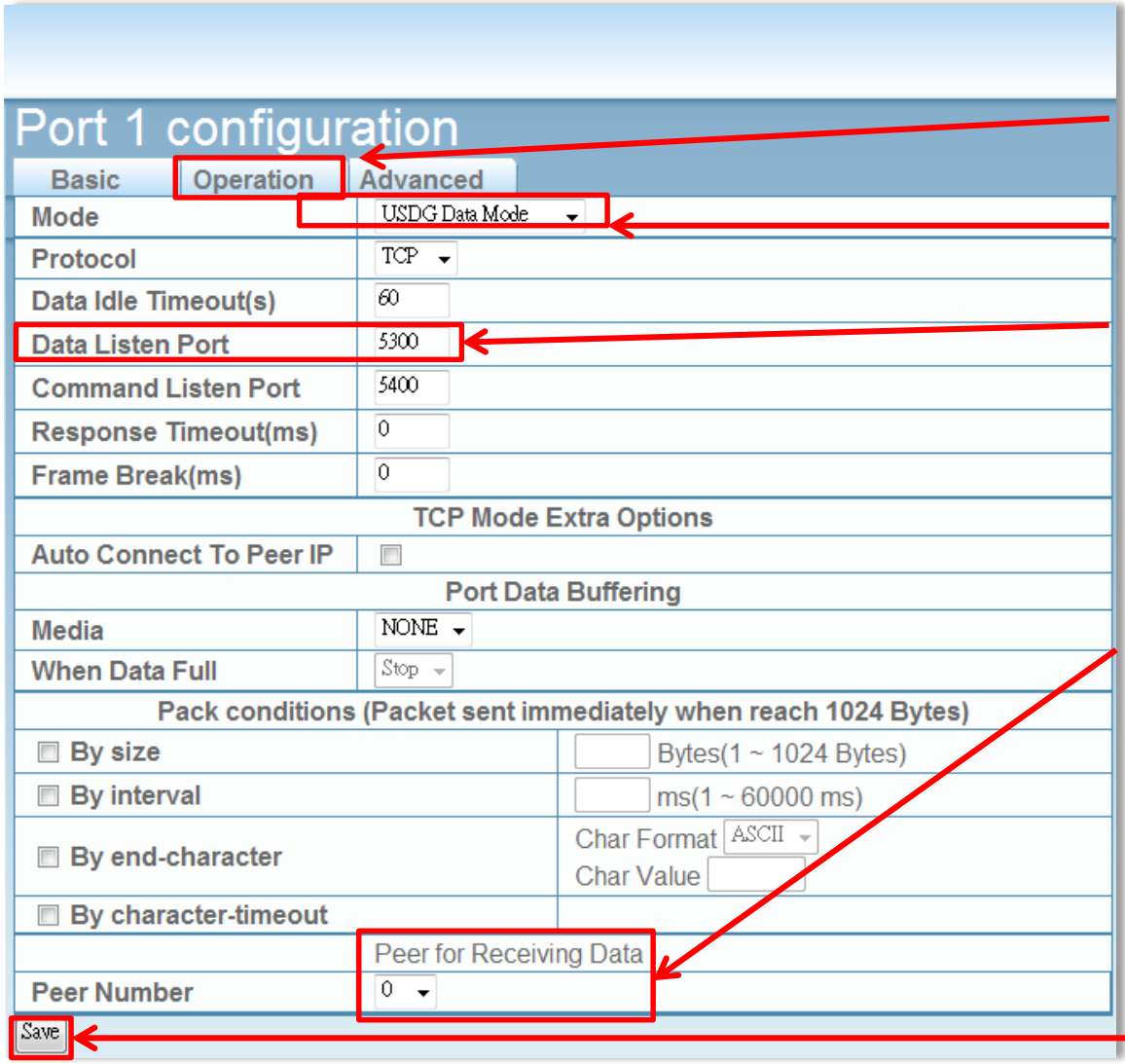
To Configure the USDG Server Mode

- Use web browser connect to device server with IP 192.168.1.24



1. To Configure the "Basic" part first, then "Save" it

To Configure the USDG Server Mode



2. Click “Operation”

3. Select to USDG Data Mode

4. Fill in “Data Listen Port”
(Default: 5300)

5. Don’t need to configure the peer port
because Our Role is working as server

6. Save it

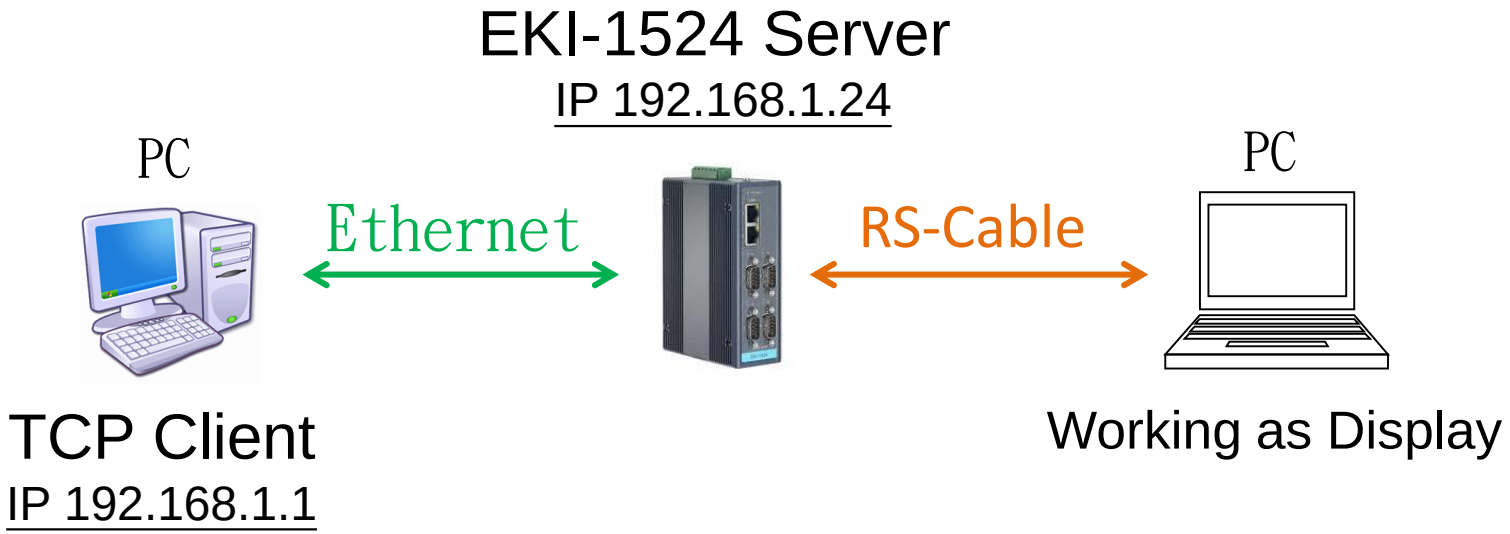
To Configure the USDG Server Mode

- Save the configuration and reboot to initialize the changes

How to Test USDG Data TCP Server Mode

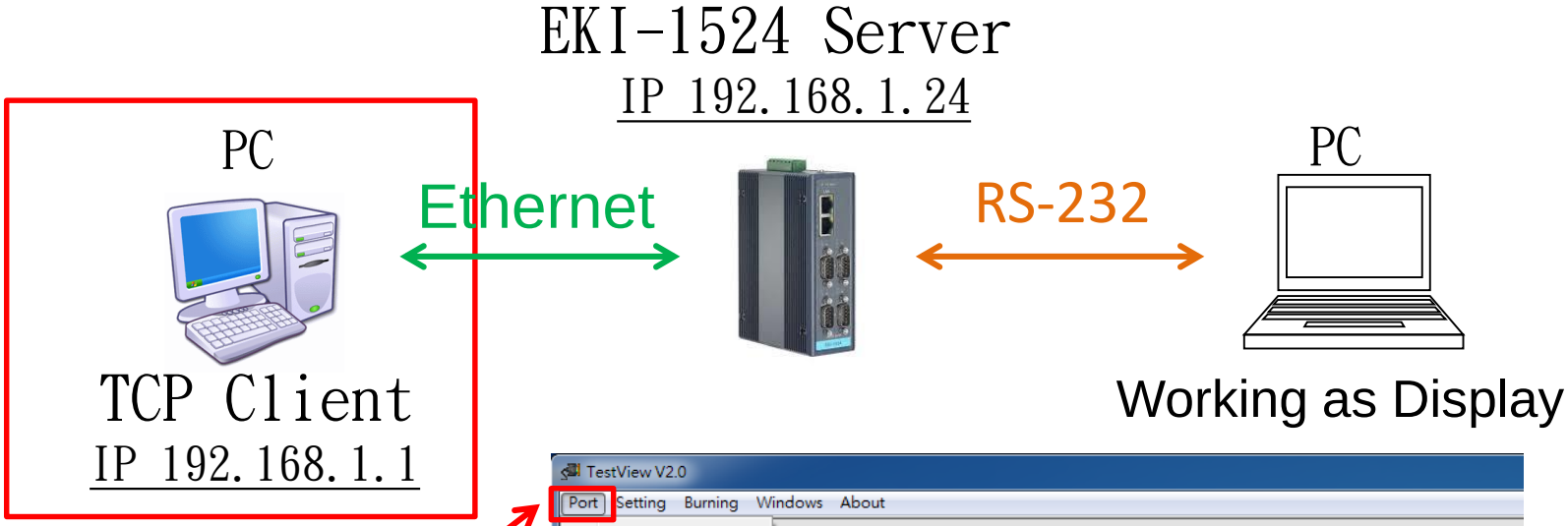
Test the USDG Server Mode

Topology



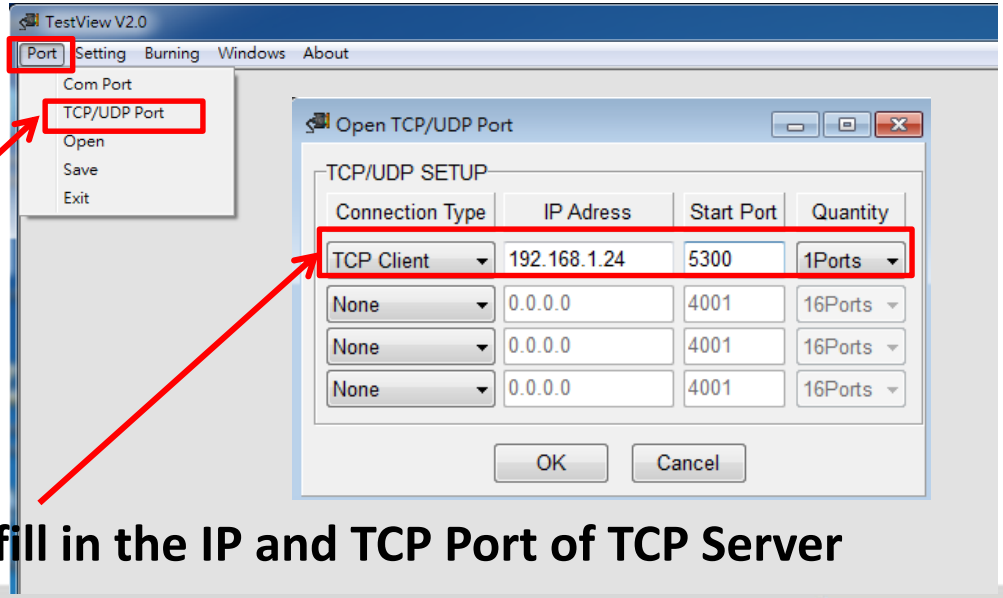
Test it by TestView

To Configure the TCP Client



1. Click Port

2. Select TCP/UDP Port



3. Select TCP Client and fill in the IP and TCP Port of TCP Server

To Configure the COM Port

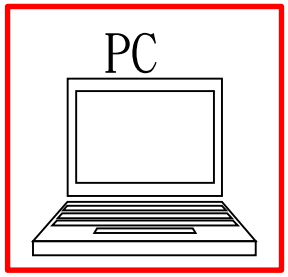
EKI-1524 Server

IP 192.168.1.24

PC

Ethernet

RS-232



TCP Client

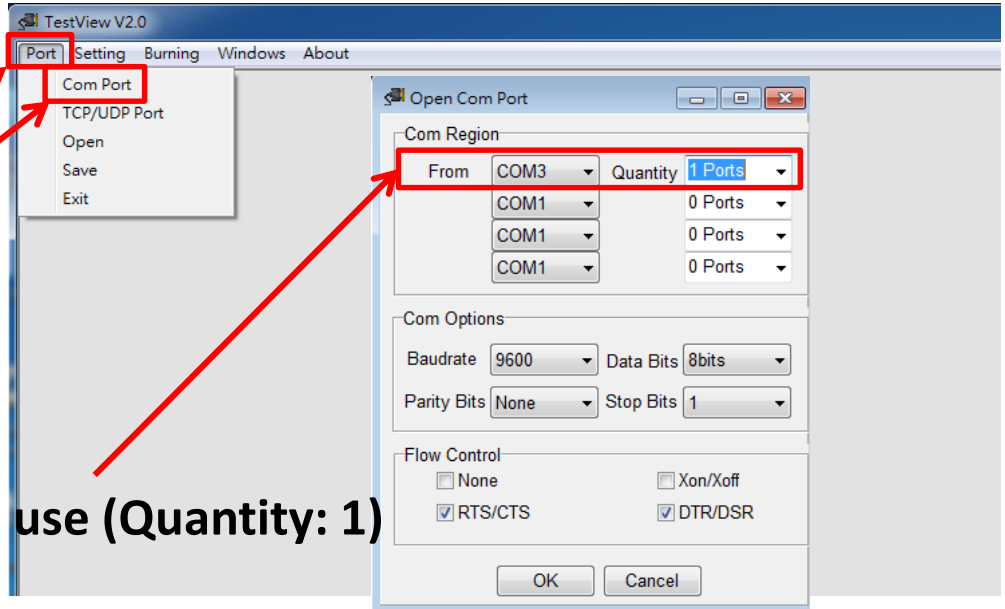
IP 192.168.1.1

Working as Display

1. Click Port

2. Select COM Port

3. Which port you want to use (Quantity: 1)



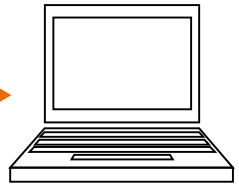
EKI-1524 Server
IP 192.168.1.24

TCP Client
IP 192.168.1.1

Ethernet

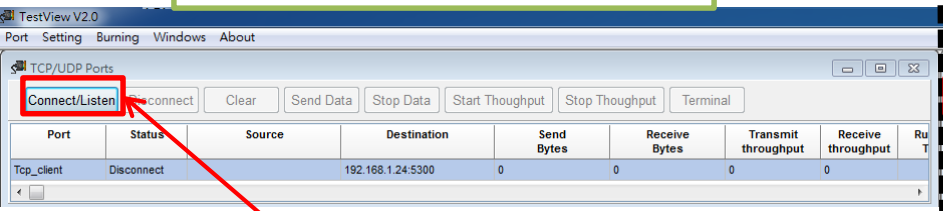
RS-232

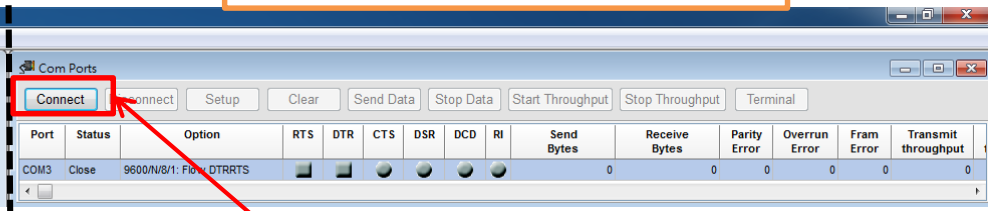
Working as Display



Left side is the TCP Client

Right side is the COM Port



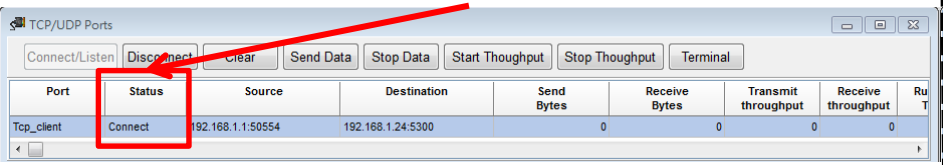


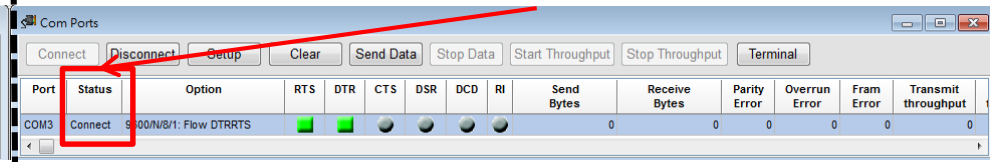
Click "Connect"

Click "Connect"

Then you can see the status become "Connected"

Then you can see the status become "Connected"





Device server will accept this session after receiving the request

TCP Client
IP 192.168.1.1

EKI-1524 Server
IP 192.168.1.24

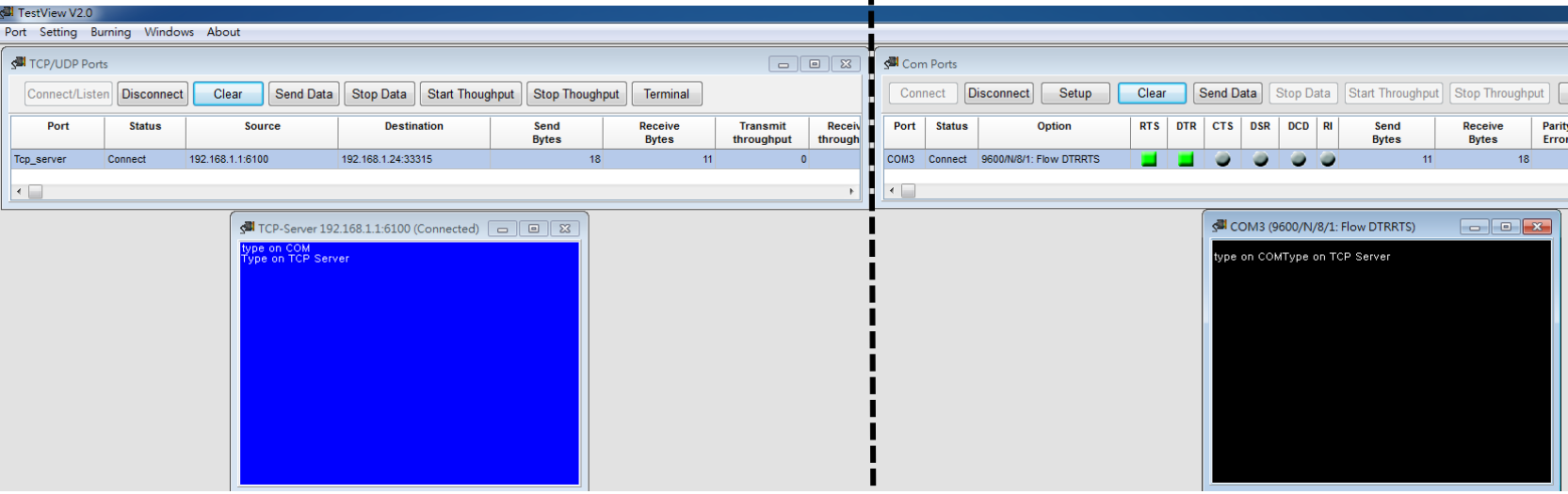
Working as Display

Ethernet

RS-232

Left side is the TCP Client

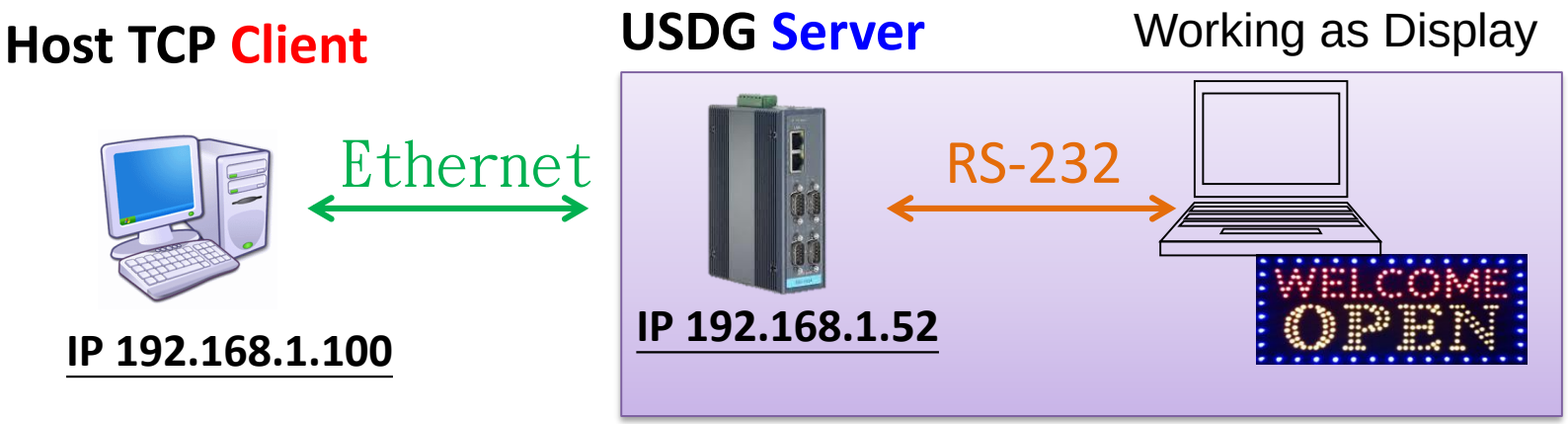
Right side is the COM Port



After connection, data can be sent by both side

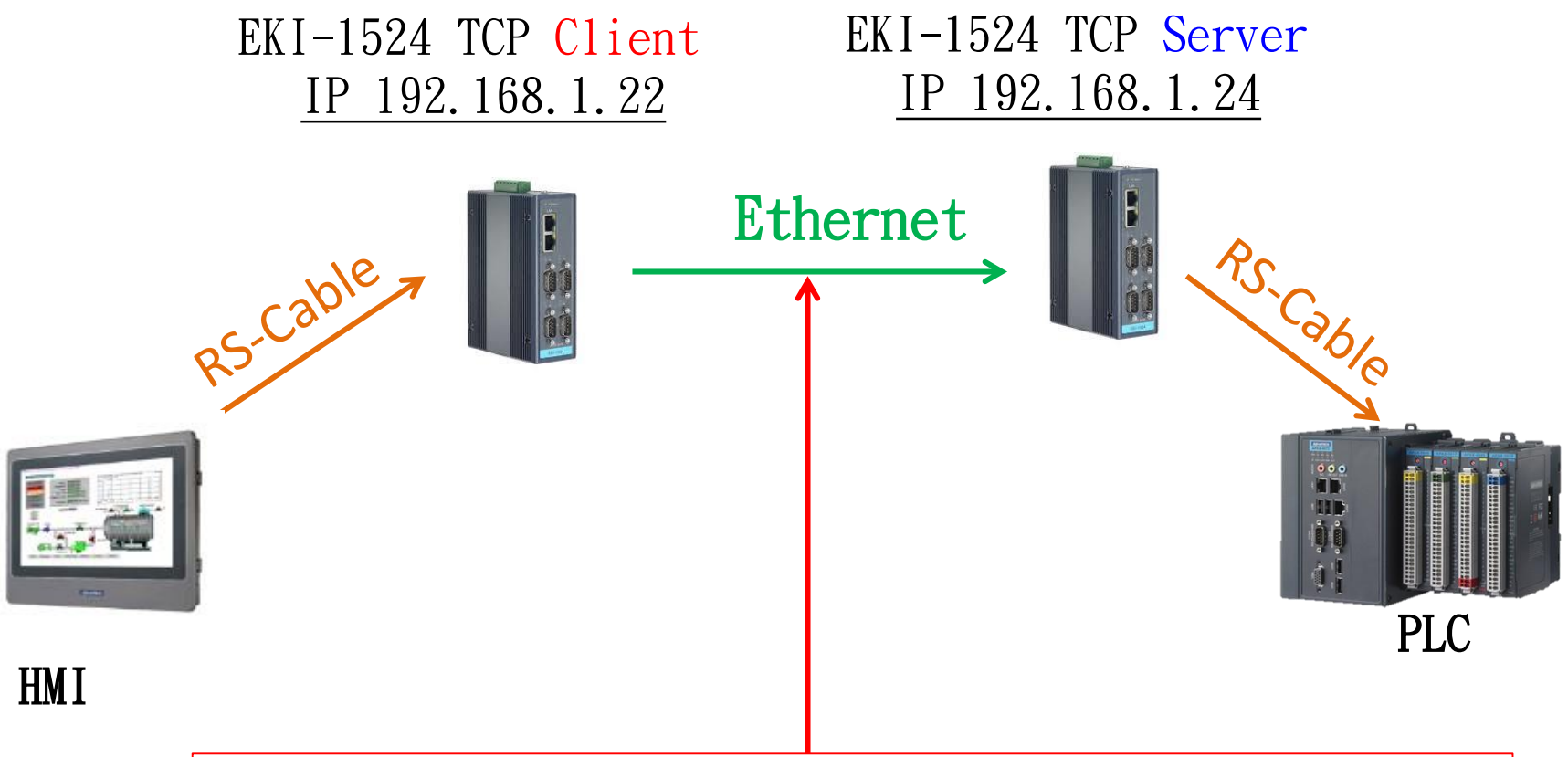
Tips!!

TCP Client		USDG Server	
Ethernet IP	192.168.1.100	192.168.1.51	Ethernet IP
Peer IP Address	**192.168.1.51**		
Peer TCP Port	**5300**	**5300**	**Data Listen Port**



How to Configure USDG Data TCP Peer-2-Peer Mode

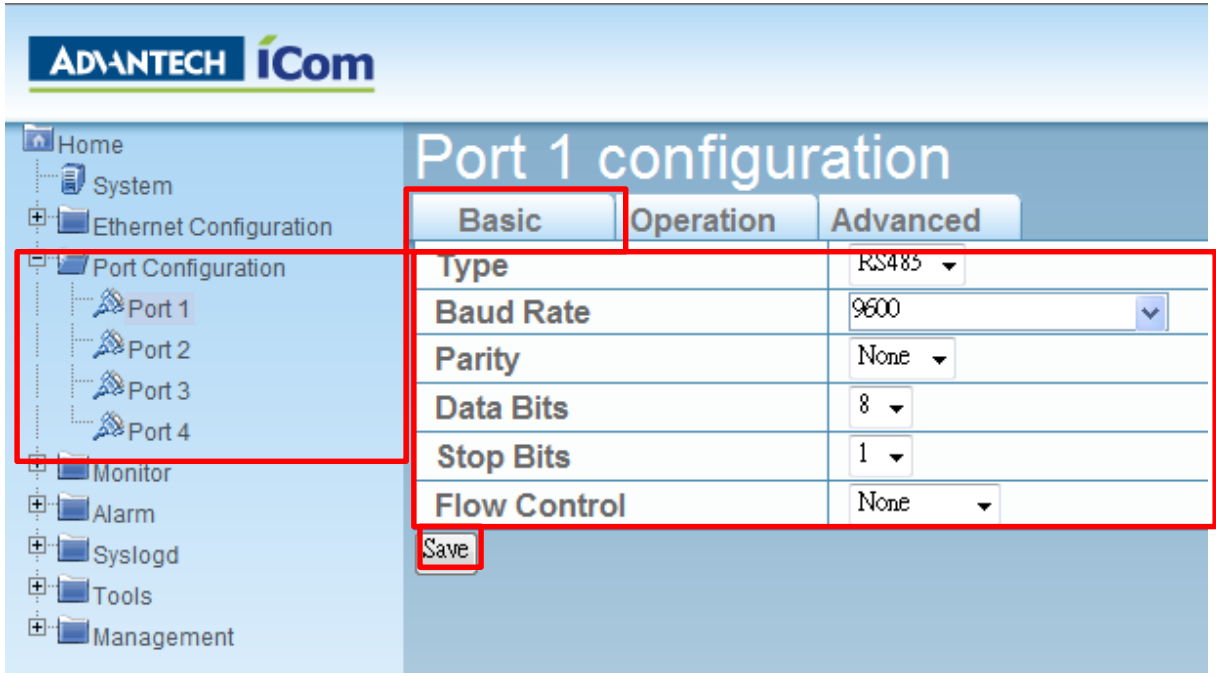
Topology of USDG P2P Mode



In this topology, the data is sent from left side to right side. So, TCP Client is the left device server, TCP Server at the right side.

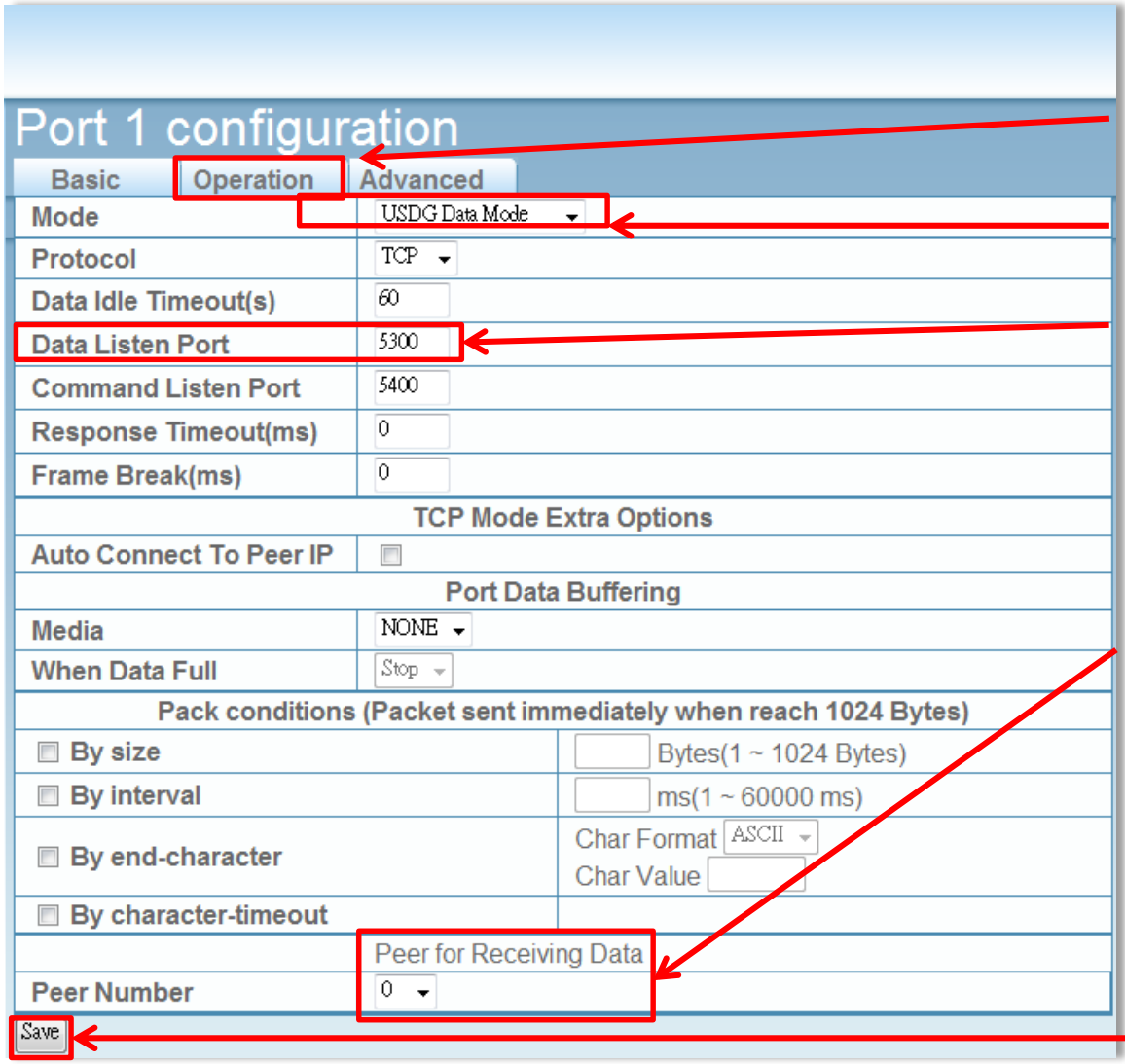
To Configure the USDG Server Mode

- Use web browser connect to device server with IP 192.168.1.24



1. To Configure the "Basic" part first, then "Save" it

To Configure the USDG Server Mode



2. Click “Operation”

3. Select to USDG Data Mode

4. Fill in “Data Listen Port” (Default: 5300)

5. Don’t need to configure the peer port because Our Role is working as server

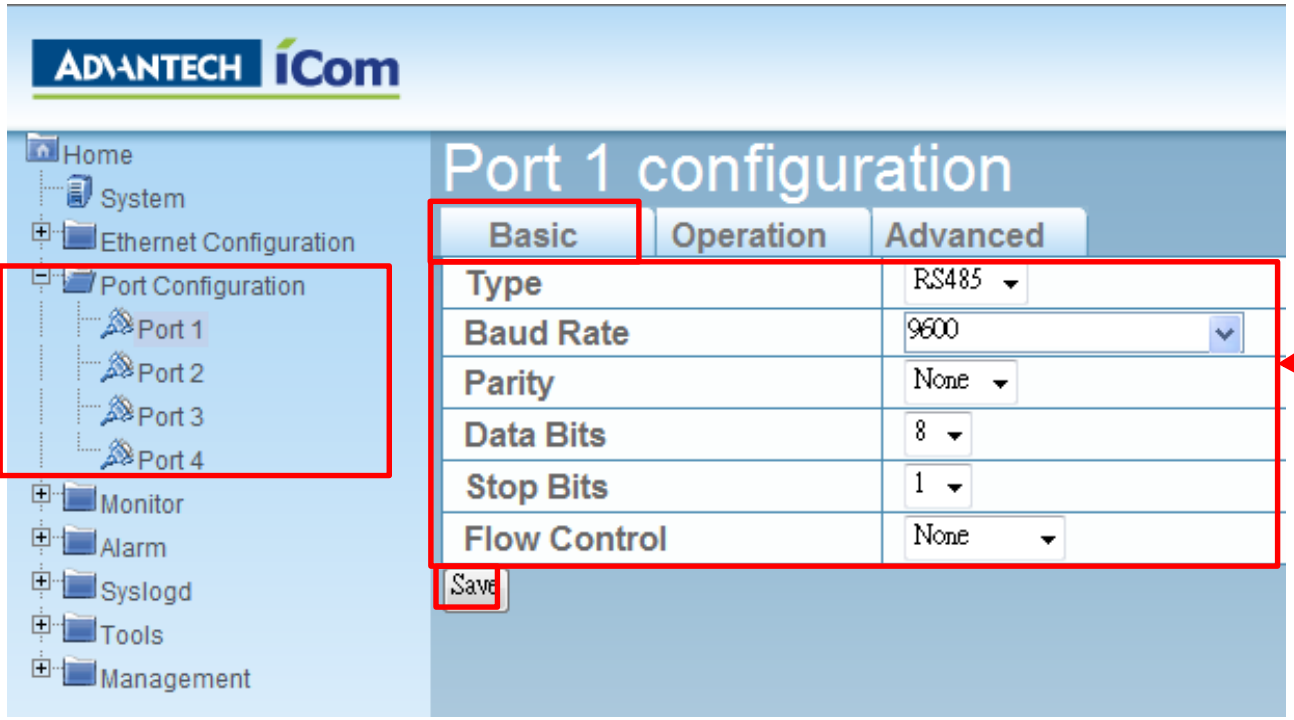
6. Save it

To Configure the USDG Server Mode

- Save the configuration and reboot to initialize the changes

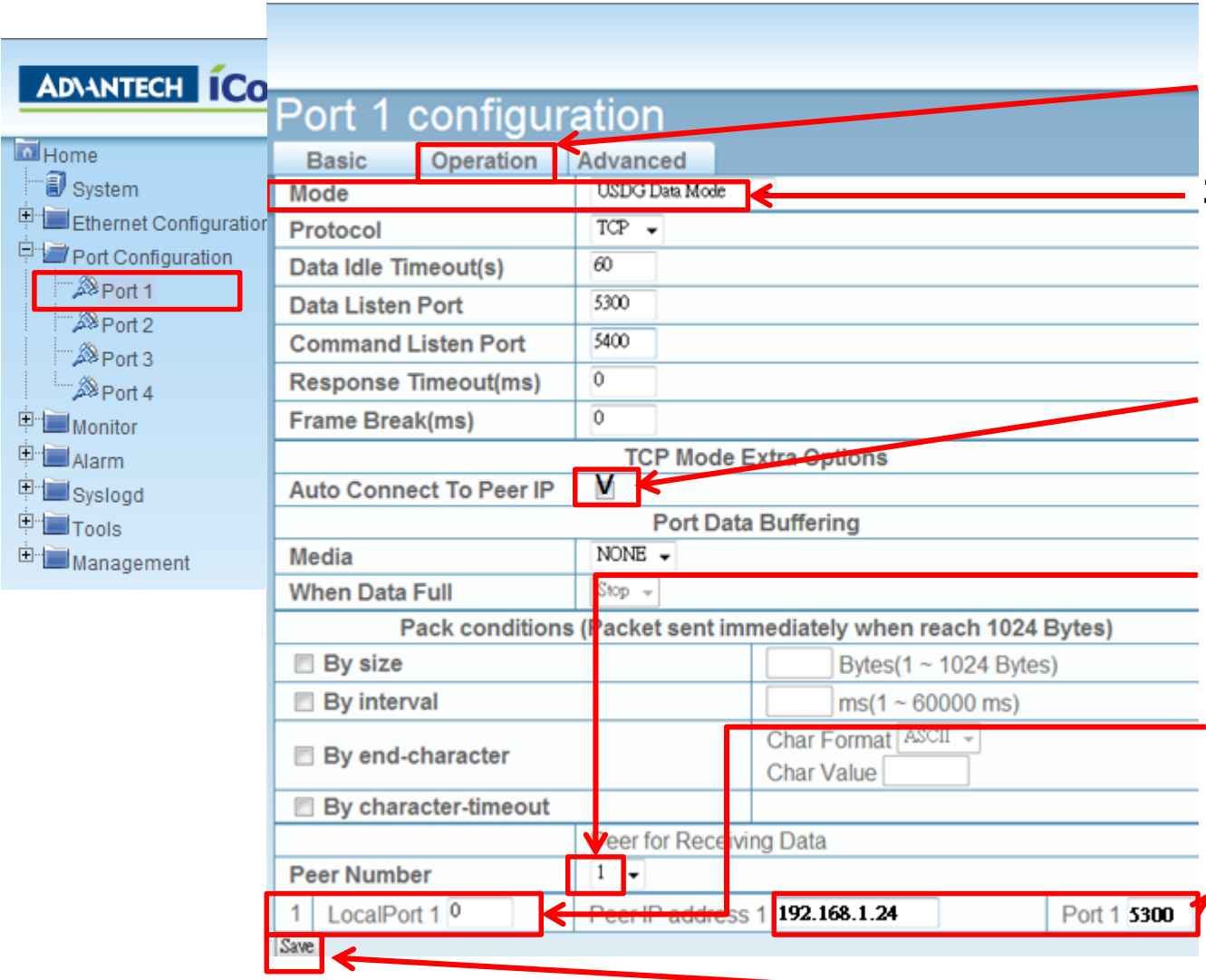
To Configure the USDG Client Mode

- Use web browser connect to device server with IP 192.168.1.24



1. To Configure the "Basic" part first, then "Save" it

To Configure the USDG Client Mode



2. Click “Operation”

3. Select to USDG Data Mode

4. Click in the Client mode

5. In the Client mode, Use Peer Port for receiving data <Max 16 Peer>

6. EKI use TCP Port connect to Peer IP address

7. Fill in the IP address of TCP Server and TCP Port for receiving the data

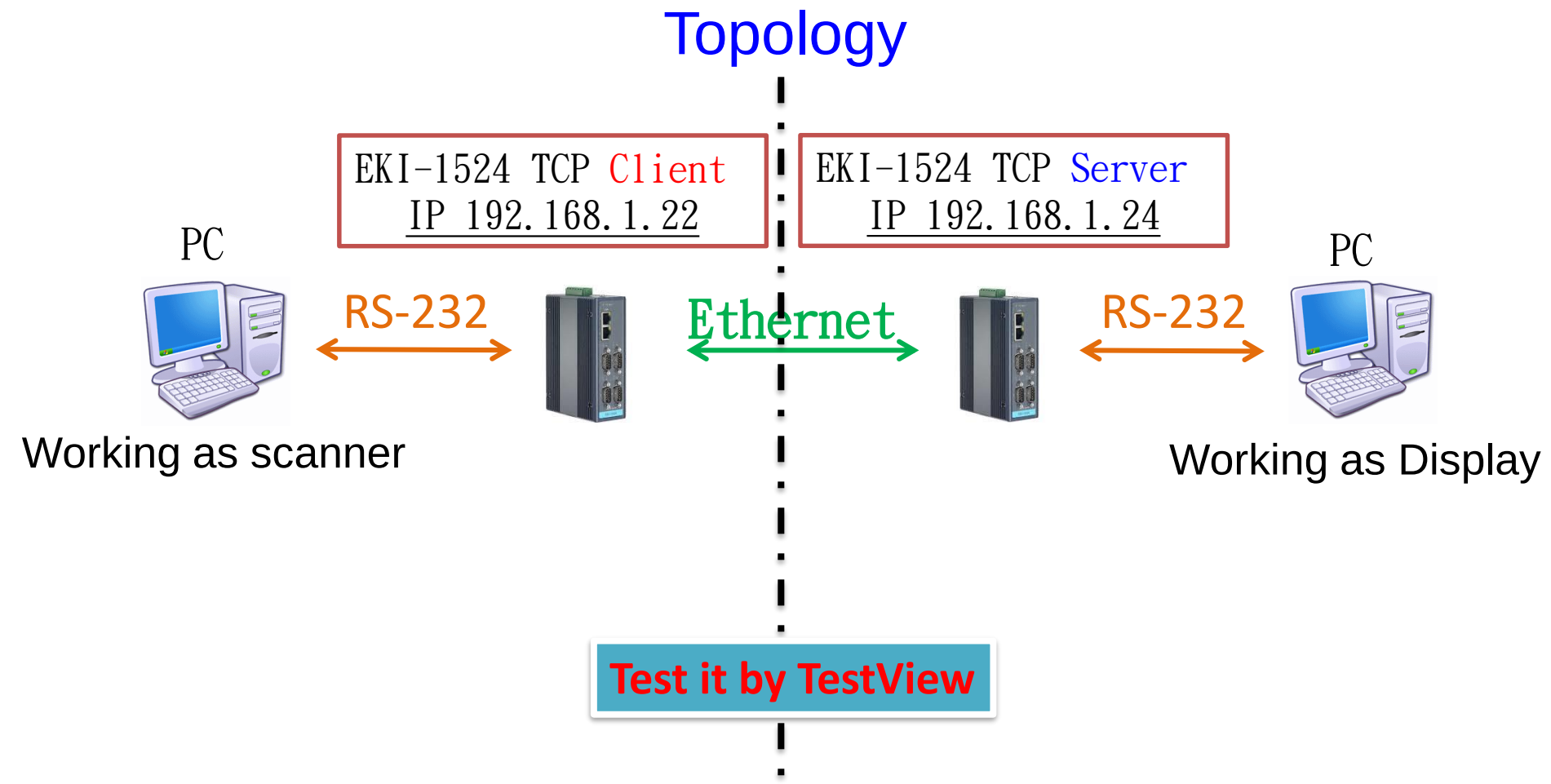
8. Save it

To Configure the USDG Client Mode

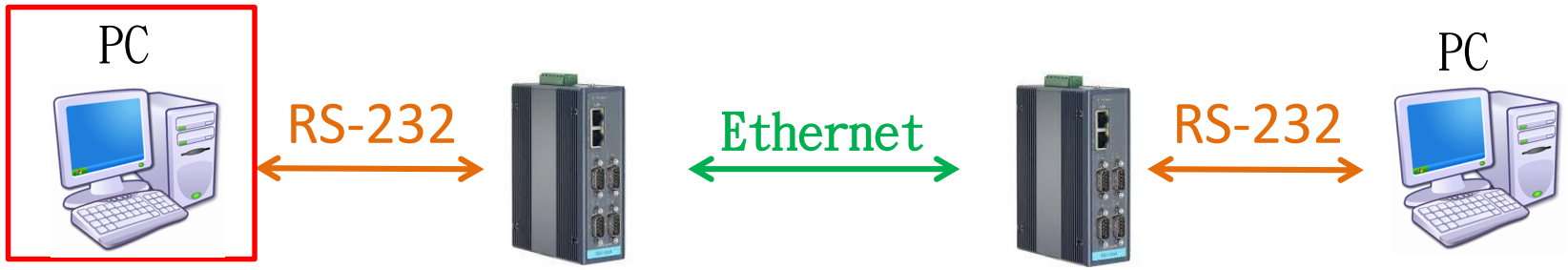
- Save the configuration and reboot to initialize the changes

How to Test USDG Data TCP Peer-2-Peer Mode

Test the USDG P2P Mode



To Configure the COM Port



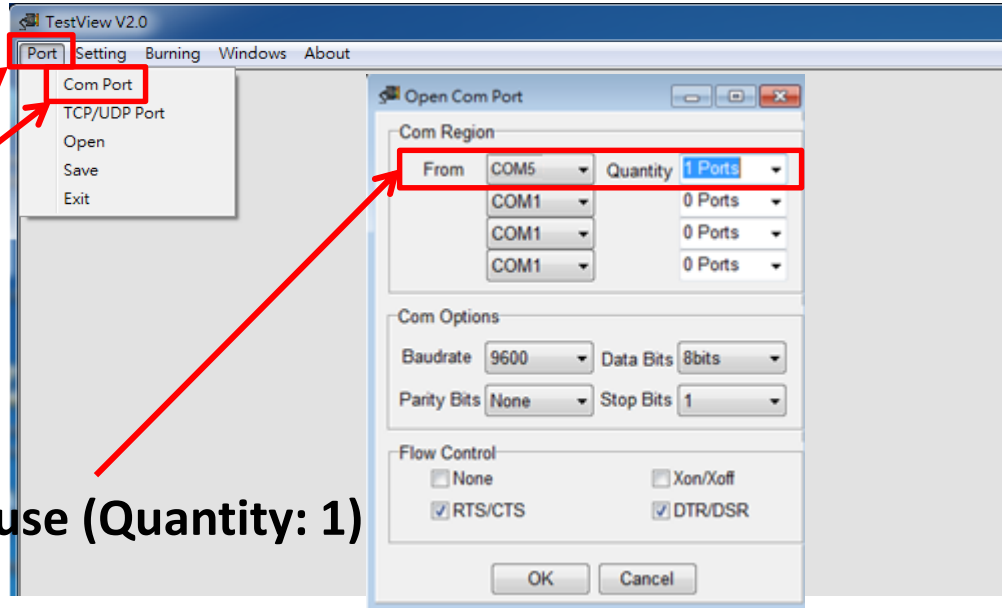
Working as scanner

Working as Display

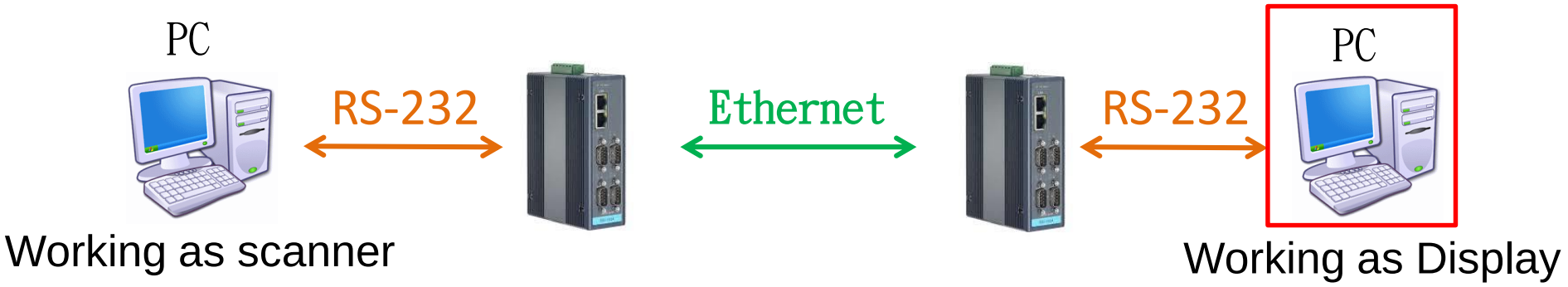
1. Click Port

2. Select COM Port

3. Which port you want to use (Quantity: 1)



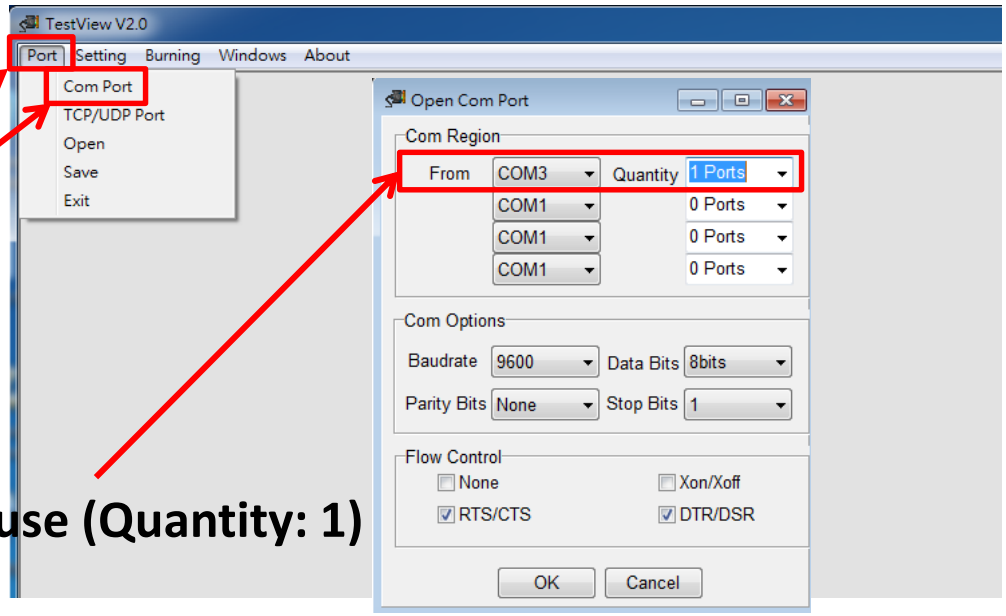
To Configure the COM Port



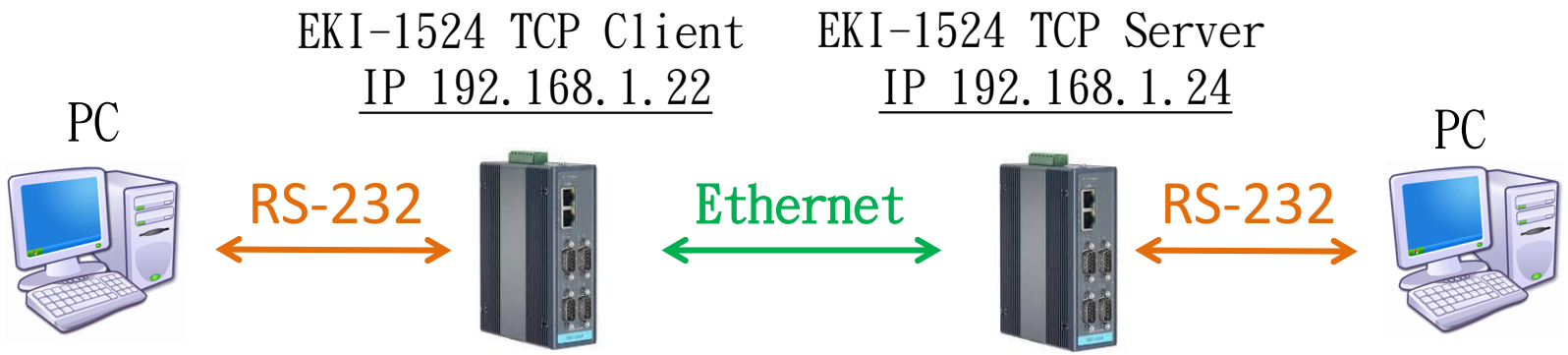
1. Click Port

2. Select COM Port

3. Which port you want to use (Quantity: 1)

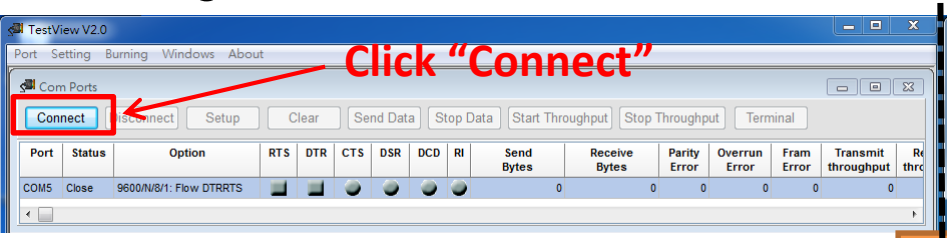


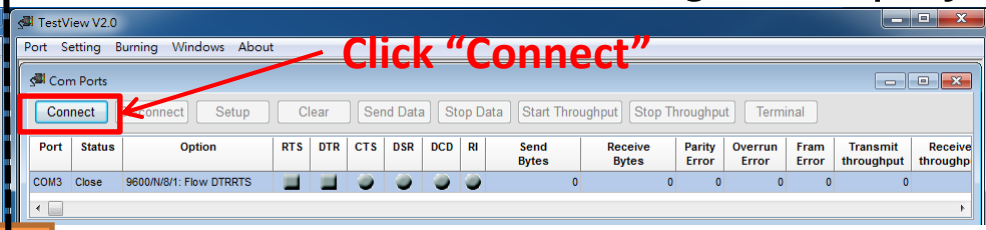
Test USDG P2P Mode

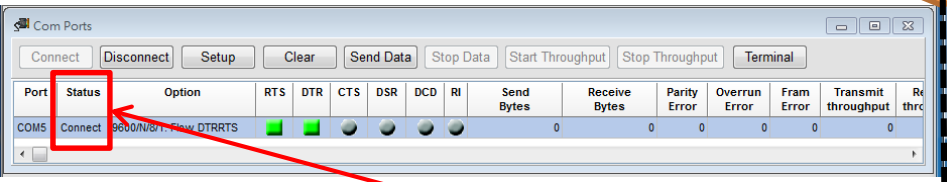


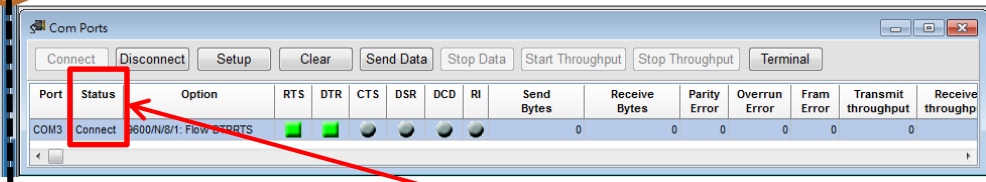
Working as scanner

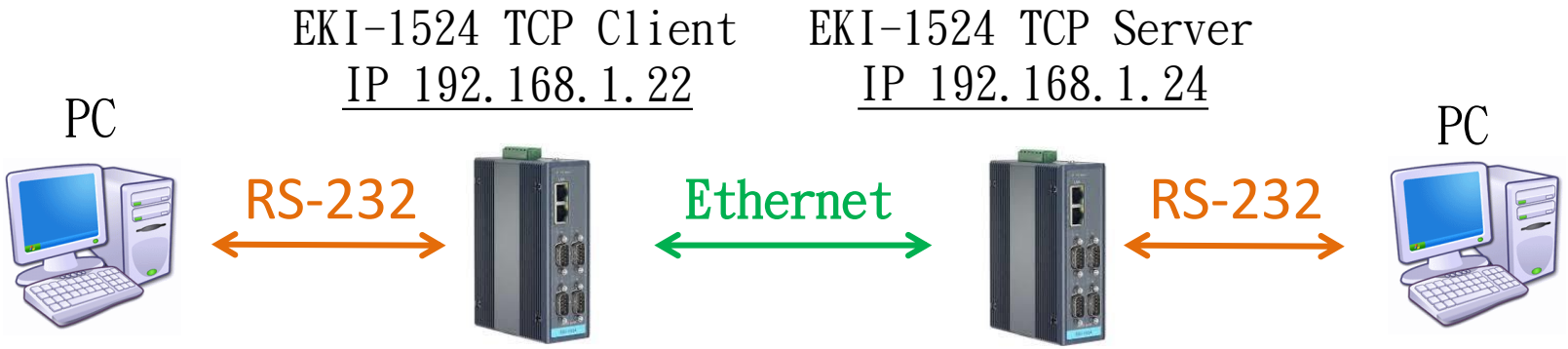
Working as Display





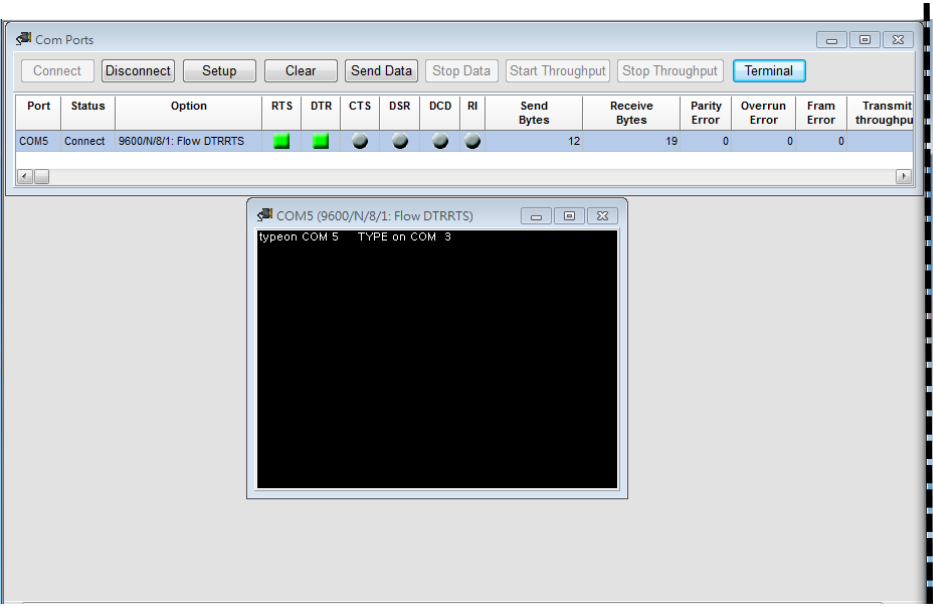


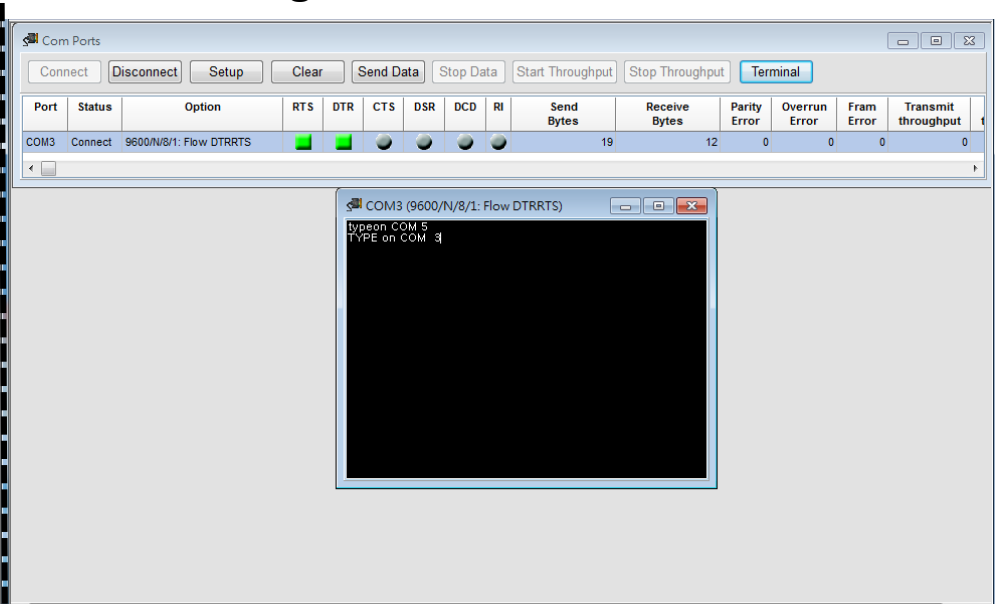




Left side is the TCP Client

Right side is the TCP Server





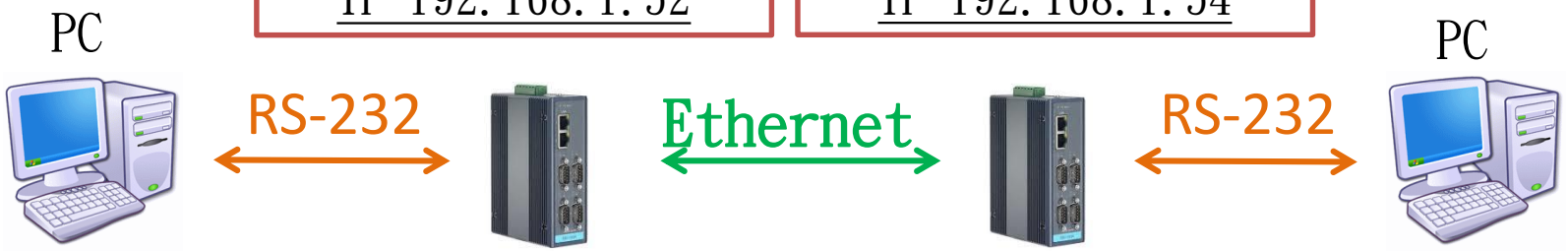
After connection, data can be sent by both side

Tips

USDG Client		USDG Server	
Ethernet IP	192.168.1.100	192.168.1.54	Ethernet IP
Peer IP Address	**192.168.1.52**		
		6100	**Data Listen Port**
Local Port	**Any**		
Peer TCP Port	**6100**		

EKI-1524 TCP Client
IP 192.168.1.52

EKI-1524 TCP Server
IP 192.168.1.54



Working as HMI

Working as PLC


Enabling an Intelligent Planet