# Instruction of Network Setting

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# Version Update Record

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01	Reviewing		Alvin Liu	1.0
02				
03				
04				
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#### 1. Preface

When controller connects to network, it needs a PC to provide and share the resource file, and let controller access that resource file. This PC is called as a file server. This PC needs set up a related network protocol, and also creates an account to access data, so controller can link to the PC correctly.

## 2. PC Setting

# 2.1 XP OS

A. Guest account setting

"Start" => "Setting" => "Network connections"



B. Click on "Local Area connection" =>right click on "Properties"



C. Click on "Internet Protocol [TCP/IP]"

🕂 Local Area Connection Properties 🛛 ? 🗙
General Authentication Advanced
Connect using:
Intel(R) GD82559ER PCI Adapter
This connection uses the following items:
<ul> <li>Client for Microsoft Networks</li> <li>File and Printer Sharing for Microsoft Networks</li> <li>QoS Packet Scheduler</li> <li>Internet Protocol (TCP/IP)</li> </ul>
Install Uninstall Properties
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
<ul> <li>Show icon in notification area when connected</li> <li>Notify me when this connection has limited or no connectivity</li> </ul>
OK Cancel

D. Select "Use the following IP address" and fill in "IP Address" and "Subnet mask", for example, input "IP Address" such as 210.20.98.20, "Subnet mask" such as 255.255.255.0.

Internet Protocol (TCP/IP) Prope	rties 🛛 🛛 🔀
General	
You can get IP settings assigned autor this capability. Otherwise, you need to a the appropriate IP settings.	
Obtain an IP address automatically	y
O Use the following IP address: —	
<u>I</u> P address:	210 . 20 . 98 . 20
S <u>u</u> bnet mask:	255.255.255.0
Default gateway:	· · ·
O <u>D</u> tain DNS server address autom	atically
● Use the following DNS server add	resses:
Preferred DNS server:	
Alternate DNS server:	
	Ad <u>v</u> anced
	OK Cancel

E. Right click the folder you want to share and select "Sharing and security"



F. Click "If you understand security risks but want to share files without running the wizard, click here".



G. Click "OK" to confirm sharing setting

Enable	File Sharing
♪	If you enable sharing on this computer without using the Network Setup Wizard, the computer could be vulnerable to attacks from the Internet. We strongly recommend that you run the Network Setup Wizard to protect your computer.
	<ul> <li>Use the wizard to enable file sharing (Recommended)</li> <li>Just enable file sharing</li> </ul>
	OK Cancel

H. Select "Share this folder on the network", key in folder name and click "OK".



# 2.2 VISTA OS setting

A. Create a sharing folder, and change this folder's setting to offer controller to use, as the below figure.

Network File and Folder Sharing public Shared Network Path: \\TRUONGTHO-PC\Users\TRUONGTHO\Desktop\public Share Advanced Sharing Set custom permissions, create multiple shares, and set other advanced sharing options. Advanced Sharing Password Protection People without a user account and password for this computer can access folders shared with everyone. To change this setting, use the <u>Network and Sharing Center</u> .	eneral Sharing	Security	Previous Versions	Customize
Shared Network Path: \\TRUONGTHO-PC\Users\TRUONGTHO\Desktop\public Share Advanced Sharing Set custom permissions, create multiple shares, and set other advanced sharing options.  Advanced Sharing Password Protection People without a user account and password for this computer can access folders shared with everyone.	Network File and	d Folder Sh	aring	
\\TRUONGTHO-PC\Users\TRUONGTHO\Desktop\public Share Advanced Sharing Set custom permissions, create multiple shares, and set other advanced sharing options.  Password Protection People without a user account and password for this computer can access folders shared with everyone.	100 CO 100			
Share Advanced Sharing Set custom permissions, create multiple shares, and set other advanced sharing options.  Password Protection People without a user account and password for this computer can access folders shared with everyone.	Network Path:			
Advanced Sharing Set custom permissions, create multiple shares, and set other advanced sharing options. Advanced Sharing Password Protection People without a user account and password for this computer can access folders shared with everyone.	\\TRUONGTH	0-PC\Usen	s\TRUONGTHO\De	sktop/public
Set custom permissions, create multiple shares, and set other advanced sharing options. Advanced Sharing Password Protection People without a user account and password for this computer can access folders shared with everyone.	Share			
People without a user account and password for this computer can access folders shared with everyone.	advanced shari	ng options.		
can access folders shared with everyone.	Statement of the local division in which the local division in the local division in the local division in the			
To change this setting, use the <u>Network and Sharing Center</u> .	Password Protec	ction		
	People without	a user acco		or this computer
	People without can access fold	a user acco lers shared	with everyone.	260 10

Share name:				
public				
Add	Remove			
imit the num	ber of simulta	neous users	to: 2	0
Comments:				

B. TCP/IP Setting, click "STAR" => "Setting" => "Network and Dial-up connections" => double click "Local Area connection" => "Properties"

neral		
Connection —		
IPv4 Connec	tivity:	Internet
IPv6 Connec	tivity:	No Internet access
Media State:		Enabled
Duration:		01:16:41
Speed:		100.0 Mbps
ctivity —		
ctivity ———	Sent —	Received
octivity ——— Bytes:	Sent —	Received

C. Double click "(TCP/IPv4)" and setting "IP address" and "Subnet mask", For example: IP: 10.10.1.121. Subnet mask: 255.255.255.0

General								
You can get IP settings assigned this capability. Otherwise, you ne for the appropriate IP settings.								
💿 Obtain an IP address autom	atically							
() Use the following IP address	s:							
IP address:	10		10	4	1	÷	121	l.
Subnet mask:	255		0	•	0	•	0	Ī.
Default gateway:		•		<u>e</u>		×		
Obtain DNS server address	automatically	ý						
• Use the following DNS serve	er addresses	:-						
Preferred DNS server:								t,
Alternate DNS server:		•		•		3		
Validate settings upon exit					ſ	,	dune	nced

#### 2.3 Win7 OS

A. Resource file sharing setting, click "Start" => "Control Panel"



B. Click "Network and Internet" => "Network and Sharing Center"



C. Click "Change adapter settings"

	ternet   Network and Sharing Center	Search Control Panel
Control Panel Home	View your basic network information a	and set up connections
Manage wireless networks	🔔 —— 🌗	See full m
Change adapter settings Change advanced sharing	ALVIN-PC Syntec_21 (This computer)	F Internet
settings	View your active networks	Connect or disconn
	Syntec_2F Work network	Access type: Internet Connections:
	Change your networking settings	
	Set up a new connection or network Set up a wireless, broadband, dial-up, ac point.	d hoc, or VPN connection; or set up a router or acce
	Connect to a network Connect or reconnect to a wireless, wire	ed, dial-up, or VPN network connection.
See also	Choose homegroup and sharing option	15
	Access files and printers located on othe	er network computers, or change sharing settings.
HomeGroup		
	Troubleshoot problems	

D. Right click "Local Area connection" and select "Properties"

										x
O → I × I	Vetwork	and Internet 🕨 Net	vork Conn	ections 🕨	-	44	Search	Network	Connections	9
Organize 🕶 🛛	)isable t	his network device	Diagnos	e this connection	Rename th	is con	nection	»		0
區域連結 Network Atheros	cable u	Inoluaaed Disable Status Diagnose Bridge Connections Create Shortcut Delete Rename Properties		無線網路連線 Syntec_2F Intel(R) WiFi Link 10	00 BGN					

E. Double click "Internet Protocol Version 4 (TCP/IPv4)"

2	
Connect using:	
Atheros AR813	1 PCI-E Gigabit Ethernet Controller (NDIS (
	Configure
This connection uses	the following items:
Client for Mic	rosoft Networks
Virtual PC Ne	
QoS Packet	
	er Sharing for Microsoft Networks
and the second	col Version 6 (TCP/IPv6)
🗹 🚣 Internet Prot	
<ul> <li>Internet Prote</li> <li>Internet Prote</li> </ul>	ocol Version 6 (TCP/IPv6)
<ul> <li>✓ ▲ Internet Prot</li> <li>✓ ▲ Internet Prot</li> <li>✓ ▲ Link-Layer T</li> </ul>	ocol Version 6 (TCP/IPv6) ocol Version 4 (TCP/IPv4)
<ul> <li>✓ ▲ Internet Prot</li> <li>✓ ▲ Internet Prot</li> <li>✓ ▲ Link-Layer T</li> </ul>	ocol Version 6 (TCP/IPv6) ocol Version 4 (TCP/IPv4) opology Discovery Mapper I/O Driver
<ul> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Link-Layer T</li> <li>✓ Link-Layer T</li> </ul>	ocol Version 6 (TCP/IPv6) ocol Version 4 (TCP/IPv4) opology Discovery Mapper I/O Driver opology Discovery Responder
<ul> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Link-Layer T</li> <li>✓ Install</li> <li>Description</li> </ul>	ocol Version 6 (TCP/IPv6) ocol Version 4 (TCP/IPv4) opology Discovery Mapper I/O Driver opology Discovery Responder
<ul> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Link-Layer T</li> <li>✓ Link-Layer T</li> <li>Install</li> <li>Description</li> <li>Transmission Contr wide area network</li> </ul>	Decol Version 6 (TCP/IPv6)         Decol Version 4 (TCP/IPv4)         Opology Discovery Mapper I/O Driver         Opology Discovery Responder         Uninstall         Properties         Dol Protocol/Internet Protocol. The default         protocol that provides communication
<ul> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Internet Prot</li> <li>✓ Link-Layer T</li> <li>✓ Link-Layer T</li> <li>Install</li> <li>Description</li> <li>Transmission Contr wide area network</li> </ul>	ocol Version 6 (TCP/IPv6) ocol Version 4 (TCP/IPv4) opology Discovery Mapper I/O Driver opology Discovery Responder Uninstall Properties of Protocol/Internet Protocol. The default

F. Setting the IP address, Subnet mask and then click "OK"

eneral				
(ou can get IP settings assigne his capability. Otherwise, you for the appropriate IP settings.	need to ask yo			
Obtain an IP address auto	omatically			
Ose the following IP address	ess:			
IP address:	10	. 10 .	1 . 20	
Subnet mask:	255	. 255 . 2	. 0	1
Default gateway:		a - 549	15	1
<ul> <li>Obtain DNS server addres</li> <li>Ouse the following DNS server</li> </ul>	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			01
Preferred DNS server:		s	51	
Alternate DNS server:		ee	8	1
Validate settings upon ex	cit		Adva	nced

G. Create a sharing folder, right click on the folder and select "Share with" => "Specific people"



H. Change the Setting for sharing this folder for everyone, and then click "Share" as follows.

Choose people to share v	with			
Type a name and then click Add,	or click the arrow to	find compone		
Type a name and then click Add,	, or click the arrow to	find someone.		
				Add
Alvin Guest			Le	vel
Everyone			- 1	
Create a new user			cou .	
an everyone			cou	

I. Sharing option setting, click "Start" => "Control Panel" => "Network and Internet"



J. Click "Choose homegroup and sharing options"



K. Click "Change advanced sharing settings..."

				×
<b>@</b>	Control Panel      Network and Internet      HomeGroup		Search Control Panel	9
	<ul> <li>Share with other home computers running Windows</li> <li>This computer can't connect to a homegroup.</li> <li>To create or join a homegroup, your computer's network What is a network location?</li> <li>With a homegroup, you can share files and printers with other comp stream media to devices. The homegroup is protected with a passwor what you share with the group.</li> <li>Tell me more about homegroups</li> <li>Change advanced sharing settings</li> <li>Start the HomeGroup troubleshooter</li> </ul>	location mu	g Windows 7. You can also	
	[	Create a h	omegroup OK	

L. Select "Turn off password protected sharing" and "Use user account and passwords to connect to other computers"

				_	1	
F	ile sharing connection	15				
		28-bit encryption to help pr cryption and must use 40-		nection	s. Some devices don't	
		t encryption to help protect sharing for devices that use			commended)	
F	assword protected sha	aring				
	computer can acc	rotected sharing is on, only ess shared files, printers atta ss, you must turn off passw	ached to this comput	er, and		
	🖱 Turn on pa	assword protected sharing				
	Turn off page	assword protected sharing				
ł	HomeGroup connectio	ins				
		rs manages the connections ts and passwords on all of y <del>lelp me decide</del>				
	~	dows to manage homegrou ccounts and passwords to c	20		ed)	
Publi	c					0

#### **3.** Controller setting

#### **3.1** DOS system setting

- A. On the interface screen, press **"F6 Param."** => **"F10 Next page"** => **"F3** Network setting" => **"F1 Net Dir setting"**
- B. **CNC Name:** Key-in the controller name, if you have more than two controllers, key-in different names for each.
- C. **IP address:** Key-in the IP address that has not been used.
- D. Net Mask: Key-in the Net mask (the same value with your computer subnet mask).
- E. **PC Name:** Key-in the full computer name (must match your PC name)
- F. **Dir Name:** Key-in the name in sharing folder (the same with your computer).

Network setting							
CNC setting							
CNC Name	CNC-	1					
IP Address	10	10	1	21			
Net Mask	255	255	255	0			
Remote PC setting							
PC Name YOUNG							
Dir name	PUBL	PUBLIC					

Netwo	ork	setting				
CNC setting						
Horkgroup SYNTECCLUB						
Disable DHCP 1 0:0pen, 1:Close						
ResetPassword 1:Reset						
Remote PC setting						
CNC User GUEST						
PC Password						
Fail retry	0		Sta			

- G. Press "Page Down" to login the second page
- H. Workgroup: type the PC you want to connect (must match setting in the PC)
- I. **Disable DHCP**: Select "close" if select "specify an IP address" and "open" if select "Obtain an IP Address via DHCP"
- J. CNC user: key-in "GUEST"
- K. Press **"F1 OK"** and reboot the controller to finish installation.

#### **3.2** CE system setting

- A. On the interface screen, press down "F6 Parameter" => "F10 Next Page"
   => "F3 Network Setting" to access IP address setting.
- B. **IP Address Setting**: select "Specify an IP Address" when the PC connects with controller directly. And select "Obtain an IP Address via DHCP" if using network connection via Dynamic Host Configuration Protocol
- C. **IP Address**: if you select "Specify an IP Address", key in the IP address which matches your PC IP.

Network Setting						
IP Ado	dress Parameter					
IP Address Setting		V				
IP Address Specify a Obtain ar	IP Address Obtain an IP Address Obtain an IP Address via DHCP					
Subnet Mask	Primary DNS					
Default Gateway	Primary WINS					
Network	DiskRemote Host Path					
PC Name	Dir Name					
User Name Password						
Net Status Code : -1						
Resource Shared						
Shared Folder Path						

- D. **Subnet mask**: key-in the IP address for subnet mask (the same with PC subnet mask).
- E. **PC Name**: key-in the full computer name of your PC.
- F. **Dir Name**: key-in the sharing folder name(the same name with PC sharing folder )
- G. Press **F1 OK**, and then reboot controller to finish installation.

		Networ	k Setting		X		
	IP Address Parameter						
IP Address Settin	etting Specify an IP Address 🔻						
IP Address	10.	.10.1.35 Name Server Parameter					
Subnet Mask	255.2	255.255.0	Primary DNS				
Default Gateway			Primary WINS				
		Network Dis	skRemote Host Path				
PC Name		ABC	Dir Name	CNC			
User Name			Password				
Net Status	Net Status Code : -1						
	Resource Shared						
Shared Folder Pa	ıth						

# 4. UTP cable (RJ45 port) Production Method

## 4.1 General network cable (with HUB)

From the front view of RJ45 port, the arrangement of eight lines from left to right is orange and white, orange, green and white, blue, blue and white, green, brown and white, brown. The sending and receiving ports are the same.



## 4.2 Jumper Cable (without HUB)

From the front view of RJ45 port, the arrangement of eight lines from left to right of sending port is orange and white, orange, green and white, blue, blue and white, green, brown and white, brown. The order in the receiving port is green and white, green, orange and white, blue, blue and white, orange, brown and white, brown.



#### 5. Solve network connection problems

- Error 52: A duplicate workgroup or computer name exists on the network
- $\checkmark$  There are two controllers with a same name in a same network domain.
- Error 53: The computer name specified in the network path cannot be located.
- $\checkmark$  The computer you want to connect does not boot.
- $\checkmark$  The computer name or share directory setting is incompatible with the controller.
- ✓ Computer's IP address and subnet mask are not conformity with the content of the above sections.
- ✓ If the PC connection uses the domain, please change it to a workgroup, and after the connection is successful, it needs to change back to the domain.
- ✓ If these above possibilities have been excluded, please use the emergency stop condition (shutting down driver behind extreme power supply) and try again to check whether interference is reason.
- Error 7361: IPX or NetBIOS must be running in order to load the network.

- $\checkmark$  The IP address of the controller is the same with the other controllers.
- 6. How to manually modify the networking batch file
- I The computer connection name and sharing directory C:\cncnet.bat

Example	Illustration
@C:\NET\net initialize	Computer connection name: young
<pre>@path=%PATH%;C:\NET;</pre>	Sharing directory: public
	Computer connection password: cnc
@C:\NET\net start	
<pre>@C:\NET\net use n: \\young\public cnc</pre>	

II Computer connection name TCP/IP setting C:\NET\PROTOCOL.INI

Example	Example
	IP address: 10.10.1.21
[TCPIP]	Subnet mask: 255.255.255.0
NBSessions =6	DHCP function
SubNetMask0 =255 255 255 0	: 0 open ; 1 close
IPAddress0 =10 10 1 21	
DisableDHCP =1	
DriverName =TCPIP\$	
BINDINGS =A\$E100B	
LANABASE =0	

III The setting of controller name and workgroup C:\NET\SYSTEM.INI

Example	Explanation
[network]	Controller name: CNC
filesharing =no	Users: GUEST
printsharing =no	Workgroup: SYNTECCLUB
autologon =yes	
computername =CNC	
lanroot =C:\NET	
username =GUEST	
workgroup =SYNTECCLUB	
reconnect =yes	
dospophotkey =N	
lmlogon =0	
logondomain =SYNTECCLUB	
preferredredir =basic	

autostart =basic	
maxconnections =8	