GigabitEthernet Interface

Connection Manual

Revision 1.11E

Photron

Introduction

Thank you for your purchasing a Photron high-speed camera system. This manual contains the operating instructions and warnings necessary for connecting the high-speed camera system to a PC. Before operating the unit, please read this manual thoroughly, and retain it for future reference. If any content remains unclear after reading this manual, please contact us using the contact information listed at the end of this document.

Manual Notation

The following icons and symbols are used in the explanations in this manual.

Icon/Symbol	Description
Important	This symbol indicates important items that you should be sure to read.
! Caution	This symbol indicates instructions that should always be followed when using the software, or things to be careful of when using the software.
Supplement	This symbol indicates supplementary items to be aware of when using the software.
Reference	This symbol indicates the location of a reference.
MEMO	This symbol indicates a space you can use for making notes.

Using the Manual

This section explains the layout of the manual.

◆ **Introduction**

The introduction explains the manual and safety precautions.

◆ **1. Important Notice**

Explanation of notes in setting.

◆ **2. Confirming Camera System IP Address**

To confirm the IP address of the high-speed camera in preparatory phase,

◆ **3. Features of the Network Setting App**

App for entering the IP settings, etc. on the PC.

◆ **4. Network Settings on the PC (Manual)**

Instruction of PC network setting (manual).

◆ **5. Starting and Connecting Camera System**

Directions for connecting the high-speed camera with a PC

◆ **6. Setting up PFV**

Directions for Photron FASTCAM Viewer settings.

◆ **7. Setting "Jumbo Frame"**

Directions for the network adaptor Jumbo Frame setting.

◆ **8. Connecting the FASTCAM SA-X2/SA-Z to the PC**

This section explains the settings required to connect the FASTCAM SA-X2/SA-Z.

◆ **9. Recommended Gigabit Ethernet Interface Device**

Introduce the product model recommended by Photron.

◆ **10. Troubleshooting**

Troubleshooting methods if the connection is not working.

◆ **11. FAQ**

Frequently Asked Question in Q&A style.

◆ **12. Contacting Photron**

Directions for inquiry contact.

Table of Contents

1. *Important Notice*

◆ This document explains a brief procedure to control FASTCAM Series Gigabit Ethernet interface models with control software "Photron FASTCAM Viewer 3" (referred to below as PFV). The procedure may vary depending on the environment of the PC you are using, especially its OS and network adapter device. Use this document as a reference example when checking the settings.

◆ The explanations in this document include the PFV settings.
The PFV must be installed in advance.

◆ The Gigabit Ethernet Interface of the FASTCAM series is compatible with 1000BASE-T standard. You cannot directly connect it to a PC which is compatible with only 10BASE-T or 100BASE-TX. It is possible to connect through a switching hub that supports 10BASE-T, 100BASE-TX, or 1000BASE-T, but we do not recommend it due to a decrease in performance.

◆ You can use a commercial LAN cable to connect FASTCAM series to a PC, though we basically recommend you to use the LAN cable which comes with the FASTCAM camera. When you use a commercially-available LAN cable, be sure to use an STP or UTP cable which is beyond the Enhanced Category 5 (CAT5e) standard.

◆ This document presumes one-on-one operation between the PC and the camera on a closed network and includes explanations of the simplest connection method. If you wish to know how to make a connection in a more complicated case, for example, connecting multiple camera systems, or connecting cameras to an existent network, ask us for help.

2. Confirming Camera System IP Address

Confirm the IP address of the camera system by looking at the IP address label placed on the camera (or processor) body.

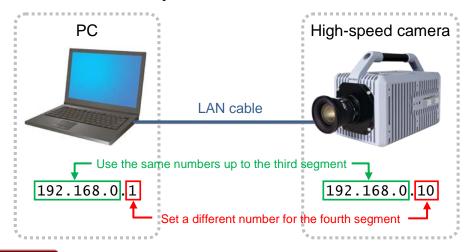Do not use this address for the settings on the PC.

If this address is used on the PC, then the camera and PC addresses will conflict with each other, which may cause such issues as the PC not recognizing the camera or live video not being displayed.

Please read "4. *Network Settings on the PC (Manual)*" for the PC settings.

◈ Factory-default IP address

IP address	: 192 . 168 . 000 . 010
Subnet mask	: 255 . 255 . 255 . 000
Default gateway	: 000 . 000 . 000 . 000

◈ IP address example

PC

High-speed camera

LAN cable

Use the same numbers up to the third segment

`192.168.0`.`1`

`192.168.0`.`10`

Set a different number for the fourth segment

🔒 **Important**

- Set the same numbers up to the third segment and use a different number in the fourth segment for the IP address on the high-speed camera and the PC. The factory default for the fourth segment of the camera's IP address is set to 10, so set a number on the PC other than 10 that is between 1 and 255.
- When using two or more cameras, set each IP address so that they do not conflict with each other.
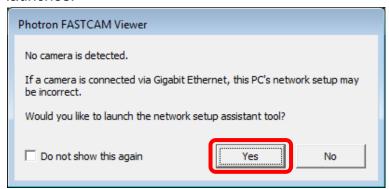
> ⚠ **Caution**
>
> - When the IP address of the high-speed camera is changed and you don't know it, a remote control or a video monitor is necessary to recover the address. In this case, please contact our technical support staff.

> ✎ **Supplement**
>
> - When the camera IP address is unknown, some specific high-speed camera model can restore the default IP address only with the camera body. Please refer to the manual for detail.
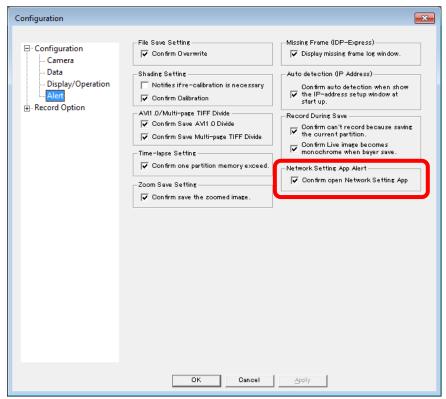
3. Features of the Network Setting App

i   A message is displayed if the camera cannot be detected when the PFV launches.

Photron FASTCAM Viewer

No camera is detected.

If a camera is connected via Gigabit Ethernet, this PC's network setup may be incorrect.

Would you like to launch the network setup assistant tool?
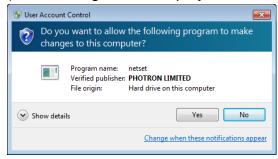
☐ Do not show this again   Yes   No

Note: Check [Do not show this again] to skip the display of this message the next time it cannot communicate with the camera.

To display the message, check the **[Network Setting App Alert]** box located under **[Configuration]**-**[Alert]** in the **[Option]** menu.

Configuration

⊟ Configuration
  ┈ Camera
  ┈ Data
  ┈ Display/Operation
  ┈ Alert
⊞ Record Option

File Save Setting
☑ Confirm Overwrite

Shading Setting
☐ Notifies if re-calibration is necessary
☑ Confirm Calibration

AVI1.0/Multi-page TIFF Divide
☑ Confirm Save AVI1.0 Divide
☑ Confirm Save Multi-page TIFF Divide

Time-lapse Setting
☑ Confirm one partition memory exceed.

Zoom Save Setting
☑ Confirm save the zoomed image.

Missing Frame (IDP-Express)
☑ Display missing frame log window.

Auto detection (IP Address)
☑ Confirm auto detection when show the IP-address setup window at start up.

Record During Save
☑ Confirm can't record because saving the current partition.
☑ Confirm Live image becomes monochrome when bayer save.

Network Setting App Alert
☑ Confirm open Network Setting App
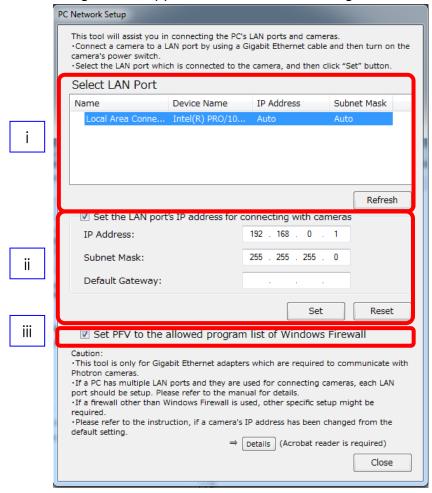
OK   Cancel   Apply

ii   Clicking [Yes] requires Administrator privileges to execute, so the following message is displayed.

(The message is not displayed if the User Account Control is turned off.)

The following screen appears to enter each setting.

i   [Select LAN Port]

Select the adapter which is currently connected to the camera.

Only the number of adapters connected to the PC is displayed.

Be careful not to select an adapter that is not connected to the camera.

Press [Refresh] to update to the current settings.

ii   [Set the LAN port's IP address for connecting with cameras]

If the box is checked:

Specify the [IP Address], [Subnet Mask], and the [Default Gateway]
shown in the frame.

If the box is not checked:

Use the DHCP connection without specifying the IP address information.

Press [Set] to update the settings.

Press [Reset] to return the IP address settings to the original values when
the app launched.

iii   [Setting an exception for the Windows Firewall]

If the box is checked:

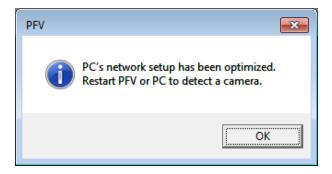Register "PFV" to the list of firewall exceptions.

If the box is not checked:

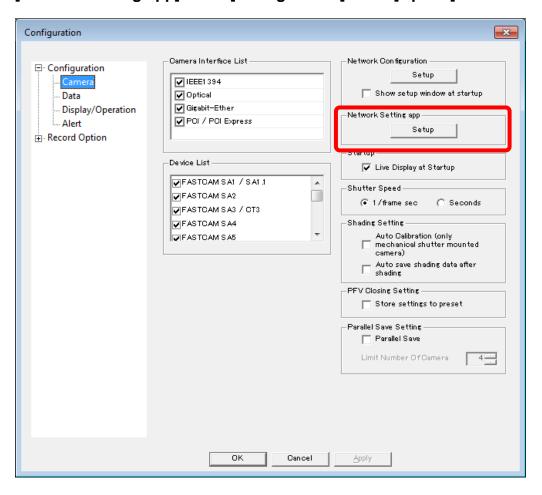Delete "PFV" from the list of firewall exceptions.

Note: The list of exceptions is forcefully enabled and turned on when the
app launches.

Press the Close button when the settings are complete to display the
following message.
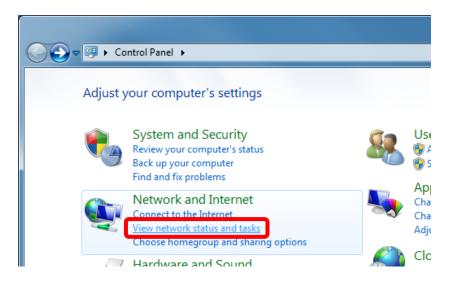
Reboot the PFV or the PC.

The app can also be launched by starting the PFV and then selecting **[Network Setting app]** under **[Configuration]** in the **[Option]** menu.
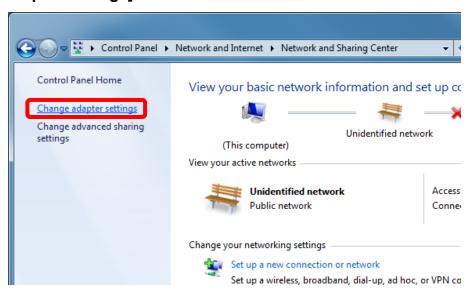
4. Network Settings on the PC (Manual)
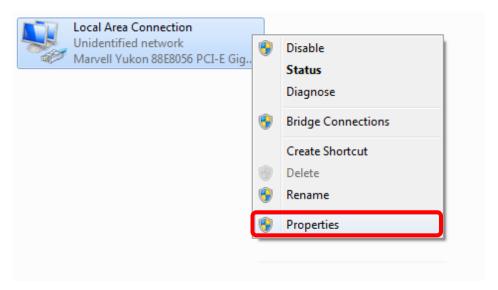
4.1. Setting with Windows 7

i From the **[Start]** menu, click the **[Control Panel]**, then click **[View network status and tasks].**
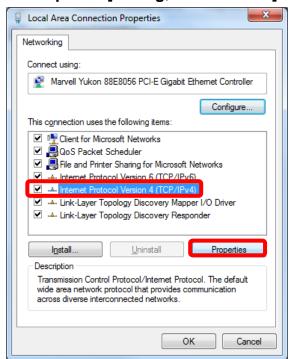

ii Under **Tasks** located on the left-hand side of the window, click **[Change adapter settings]**.

iii   Right click the **[Local Area Connection]** icon (when multiple Local Area Connections exist, use the one with Gigabit Ethernet interface), and select **[Properties]** in the popup menu, then **[Local Area Connection Properties] dialog** will be displayed."

iv   Select the **[Internet Protocol Version4 (TCP/IPv4)]** in the **[Local Area Connection Properties] dialog**, then click the **[Properties] button**.
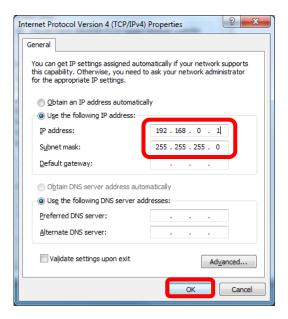
v   From the **[General]** tab, verify that **[Use the following IP address]** is selected. And set the **[IP address]** and **[Subnet mask]** as follows respectively
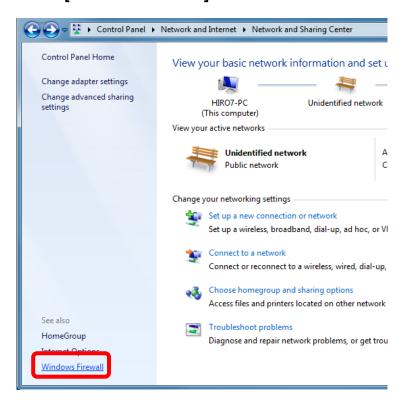
1. **IP address**：   **192 . 168 . 000 . 001**
2. **Subnet mask**：   **255 . 255 . 255 . 000**

Supplement

- There is no need to fill out [**Default gateway**]. The [**Use the following DNS server address**] may be empty as well.

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically
● Use the following IP address:
IP address: 192 . 168 . 0 . 1
Subnet mask: 255 . 255 . 255 . 0
Default gateway: .   .   .

○ Obtain DNS server address automatically
● Use the following DNS server addresses:
Preferred DNS server: .   .   .
Alternate DNS server: .   .   .

☐ Validate settings upon exit   Advanced...
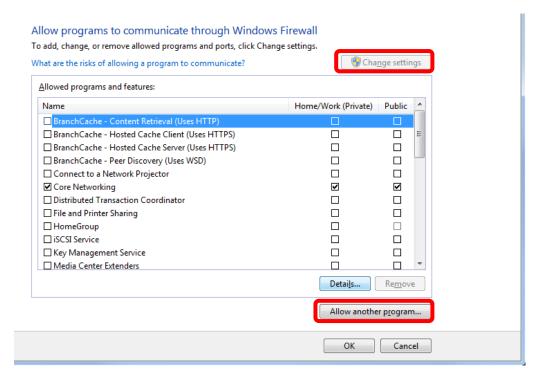
OK   Cancel

vi   Click **[OK]**, and then go back to the **[View network status and tasks]**.
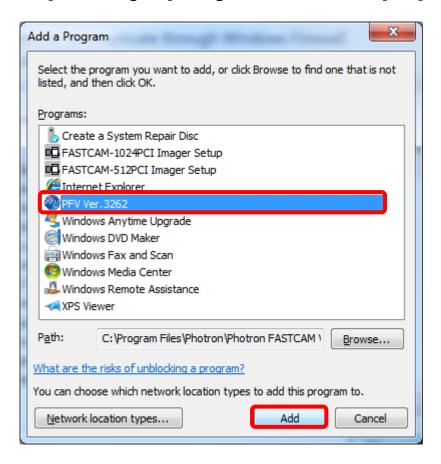Select **[Windows Firewall]** this time.

vii   Then, select **[Allow a program or feature through Windows Firewall].**

viii   Then, click **[Change settings] button** and **[Allow another program...] button**.

ix In the **[Add a Program] dialog**, select **PFV** and click **[Add] button**.

x　Click the **[OK] button** to close the **[Windows Firewall]**.

Allow programs to communicate through Windows Firewall

To add, change, or remove allowed programs and ports, click Change settings.

What are the risks of allowing a program to communicate?　　🛡 Change settings

Allowed programs and features:

Name	Home/Work (Private)	Public
☐ iSCSI Service	☐	☐
☐ Key Management Service	☐	☐
☐ Media Center Extenders	☐	☐
☐ Netlogon Service	☐	☐
☑ Network Discovery	☑	☐
☐ Performance Logs and Alerts	☐	☐
☑ PFV Ver.3262	☐	☑
☑ Remote Assistance	☑	☐
☐ Remote Desktop	☐	☐
☐ Remote Event Log Management	☐	☐
☐ Remote Scheduled Tasks Management	☐	☐
☐ Remote Service Management	☐	☐

Details...　　Remove

Allow another program...

OK　　Cancel

⚠ Caution

- The setting is necessary when the PFV version is updated.
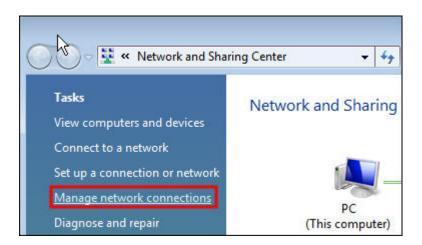
✎ Supplement

- It also does work when "Disable (Not recommended)" is selected. As the firewall is entirely disabled in this case, it is not recommended.
- If the PC has other security software firewalls, you may have to make the PFV exception for each firewall. For information on the specific way of setting, refer to the relevant manual of the security software.
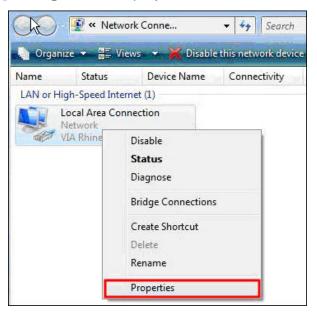
4.2. Setting with Windows Vista

i   From the **[Start]** menu, click the **[Control Panel]**, then click **[View network status and tasks].**
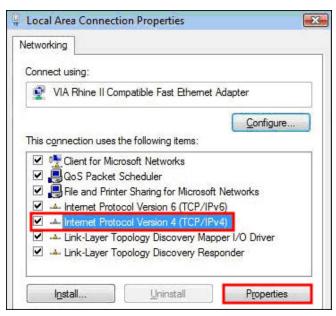

ii   Under **Tasks** located on the left-hand side of the window, click **[Manage network connections]**.

iii Right click the **[Local Area Connection]** icon (when multiple Local Area Connections exist, use the one with Gigabit Ethernet interface), and select **[properties]** in the popup menu, then **[Local Area Connection Properties] dialog** will be displayed.

iv Select the **[Internet Protocol Version4 (TCP/IPv4)]** in the **[Local Area Connection Properties] dialog**, then click the **[Properties] button**.
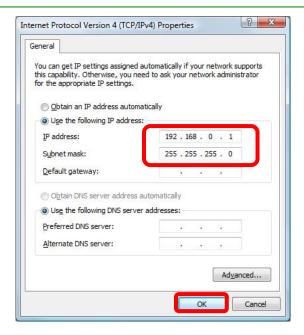
v From the **[General] tab**, verify that **[Use the following IP address]** is selected. And set the **[IP address]** and **[Subnet mask]** as follows respectively

1. **IP address**： **192 . 168 . 000 . 001**
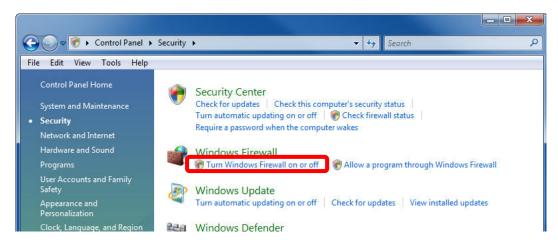2. **Subnet mask**： **255 . 255 . 255 . 000**

✏ Supplement

- There is no need to fill out [**Default gateway**]. The [**Use the following DNS server address]** may be empty as well.

vi Click **[OK]**, and then go back to the **[Control Panel]**.
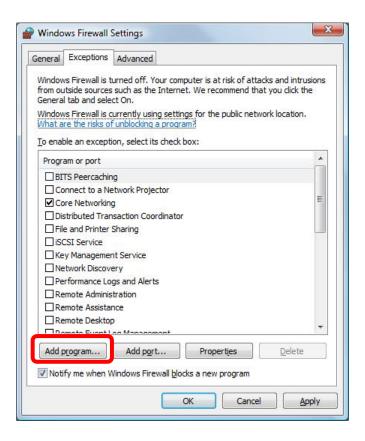Select **[Security]** this time.

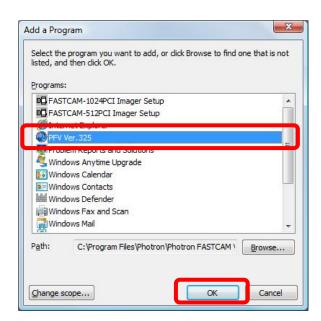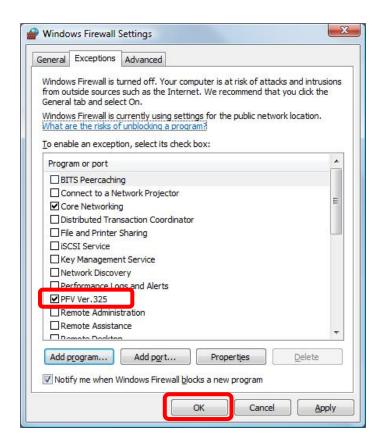vii   Then, select **[Turn Windows Firewall on or off].**

viii   In the **[Windows Firewall Setting] dialog**, select the [On
      (recommended)] radio button. Note that **[Block all incoming
      connections]** is unchecked.

xiv In the **[Exceptions] tab**, add **PFV** as an exception program.

Caution

- The setting is necessary when the PFV version is updated.

Supplement

- It also does work when "Disable (Not recommended)" is selected. As the firewall is entirely disabled in this case, it is not recommended.
- If the PC has other security software firewalls, you may have to make the PFV exception for each firewall. For information on the specific way of setting, refer to the relevant manual of the security software.

xv   Click the **[OK] buttons** to close the **[Windows Firewall]** and **[Local Area Connection Properties] dialogs**.

5. *Starting and Connecting Camera System*

i   Connect between the camera system and PC with the provided LAN cable.

ii   Power the camera on.

iii   Make sure that the [Link] LED on the camera system and that on the PC (Ethernet) are on.

✐ Supplement

- It may take about 30 seconds for the camera system to start up.

◆ *Checking the FASTCAM MC2.1*
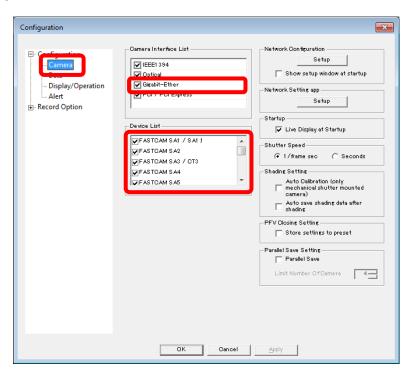
◆ *Checking the FASTCAM Mini UX50/100*

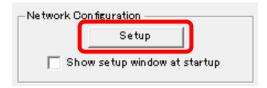# *6.   Setting up PFV*
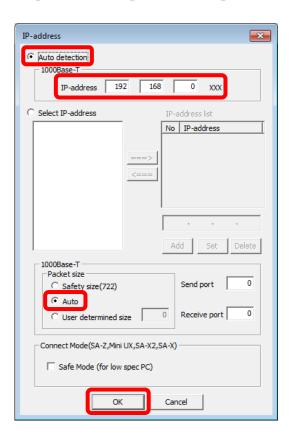
i   Start up the PFV.

ii   Click **[Option]** => **[Configuration]**.

iii Select the **[Camera]** item on the tree. Then make sure the applicable
     camera is checked in the **[Camera Interface List]** and **[Device List]**
     fields.

iv   Click the **[Setup]** button on **[Network Configuration]** in the same dialog.
     Then the **[IP-address]** dialog appears.

v   Here is the easiest way:

     1) Select **[Auto detection]**.

     2) Enter **[IP-address]** items **192.168.0.XXX**.

     3) Select **[Auto]** on the item **[Packet size]**.
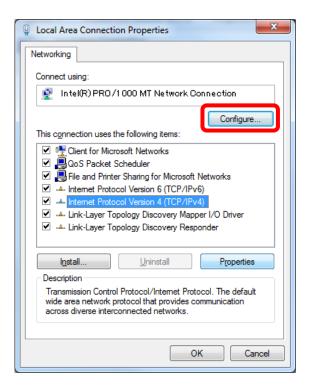
📖 Reference

- Refer to "**7.1.3. Confirming and Setting Camera IP Address**" in "**Photron FASTCAM Viewer User's Manual**" for the details of the **[IP-address]** dialog.

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vi   Click the **[OK] button** and close the **[IP-address] dialog**.

vii The settings become effective when the PFV is restarted.
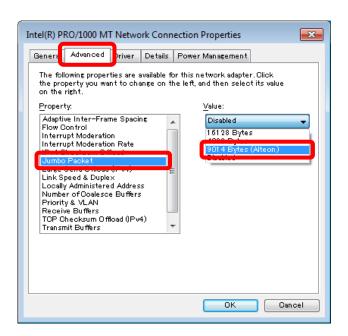
7. Setting "Jumbo Frame"

7.1. "Jumbo Frame" Settings in the OS

i Click **[Start]** => select **[Control Panel]** => **[Network Connection]**.

ii Select **[Properties]** on right-click menu of **[Local Area Connection]** (the Gigabit Ethernet interface you are using if there are multiple), then the **[Local Area Connection Properties] dialog** appears.

iii Confirm that the network adapter device 1000BASE-T and "Jumbo Frame" compatible are shown on the **[Connect using:]** item. Click the **[Configure…]** button, then open the properties of the network adapter.

iv   Click the **[Advanced] tab**, and set the **[Jumbo Frames]** (Jumbo Packet,
or something similar) item to the maximum allowable value.
The image shown below is an example of using a board which supports
the setting of "Jumbo Frames".

! Caution

- Depending on the network adapter being used, the settings may be different from this
  document.
- Some network cards lack the "Jumbo Frame" feature.
- The communication may be more stable in some network cards by not using the "Jumbo
  Frame" feature.

7.2.   "Jumbo Frame" Settings in the PFV

✓   It is all right to just keep **[Auto]** on the **[Packet size]** item.
✓   Keep **[Send port]** and **[Receive port] "0 (zero)"**.

8. Connecting the FASTCAM SA-X2/SA-Z to the PC

The Photron FASTCAM SA-X2/SA-Z high-speed cameras are equipped with two Gigabit Ethernet interface connectors. They enable simultaneous use of both connectors for high-speed downloads.

i   Set the IP address on the PC. Please read "4. PC Network Settings (Manual)" for the settings.
Please do not use the same IP address on the PC as the FASTCAM SA-X2/SA-Z. If the SA-X2/SA-Z IP address is used on the PC, then the SA-X2/SA-Z and PC addresses will conflict with each other, which may cause such issues as as the PC not recognizing the camera or live video not being displayed.

◆ Factory default IP address for the FASTCAM SA-X2/SA-Z

GIGABIT ETHER 1

IP address：	192 . 168 . 000 . 010
Subnet mask：	255 . 255 . 255 . 000
Default gateway：	000 . 000 . 000 . 000

GIGABIT ETHER 2

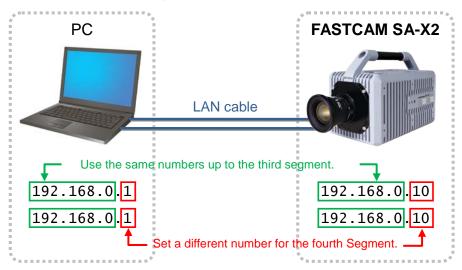|	
IP address：	192 . 168 . 001 . 010
Subnet mask：	255 . 255 . 255 . 000
Default gateway：	000 . 000 . 000 . 000

🔒 Important

- The SA-X2/SA-Z have two Gigabit Ethernet interface connectors, so there is an IP address for each connector. Set an IP address for the PC that is different from both of these addresses.

ii   Insert two LAN cables into the Gigabit Ethernet interface connectors to connect the camera and the PC. The connectors on the rear of the SA-X are labeled "GIGABIT ETHER1" and "GIGABIT ETHER2".

◆ *IP address setting example*

PC

FASTCAM SA-X2

LAN cable

Use the same numbers up to the third segment.

192.168.0.1

192.168.0.10

192.168.0.1

192.168.0.10

Set a different number for the fourth Segment.

! Caution

- Refer to the FASTCAM SA-X2/SA-Z hardware manual for details about how to connect the camera.
- Different PCs cannot be connected to "GIGABIT ETHER1" and "GIGABIT ETHER2" and operated.

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iii   Turn on the camera's power supply. Confirm that the SA-X2/SA-Z LINK LED and the PC (Ethernet) LINK LED are lit up. The "GIGABIT ETHER1" Link LED on the SA-X2/SA-Z corresponds to "IF1 LINK/TRANS" and the "GIGABIT ETHER2" to "IF2 LINK/TRANS".

iv   Start the PFV.

✎ Supplement

- When high-speed downloading using both Gigabit Ethernet connections is enabled, the LEDs for "IF1 LINK/TRANS" and "IF2 LINK/TRANS" flash during downloads. If one of the LEDs is not flashing, then high-speed downloading may not be enabled. Refer to "10. Troubleshooting" for more details.

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9.   Recommended Gigabit Ethernet Interface Device

To use the Jumbo Frames feature in the most effective manner, Photron has verified the usefulness of, and recommend, the Gigabit Ethernet devices listed below:

◆ *High-speed cameras other than the FASTCAM SA-X2/SA-Z*

Form factor	Manufacturer	Product model	Packet size
PCI board type (for desktop PC)	Intel	Pro/1000GT	16 KB
PC card type (for notebook PC)	BUFFALO	LPC-CB-CLGT	7 KB
USB	PLANEX	GU-1000T	7 KB
PCI-Express	Intel	INTEL Gigabit CT Desktop Adapter	9 KB
PCI-Express	Intel	INTEL PRO/1000 PT DUAL PORT	9 KB
Express Card	DENNO	MECA-GNET01	9 KB

◆ *FASTCAM SA-X2/SA-Z*

Form factor	Manufacturer	Product model	Packet size
PCI-Express	Intel	INTEL Gigabit CT Desktop Adapter	9 KB
PCI-Express	Intel	INTEL PRO/1000 PT DUAL PORT	9 KB
Express Card	DENNO	MECA-GNET01	9 KB

> ✏ Supplement
>
> - When using the PFV, the max size of date that can be transferred from a Photron high-speed camera is 8,994 Byte.

> ❗ Caution
>
> - Please use the drivers with the latest version.

10. Troubleshooting

If the live images are not displayed even when the camera and PC are connected with a LAN cable and the PFV is running, then there may be a problem with the connection between the camera and the PC.
Please check the following items.

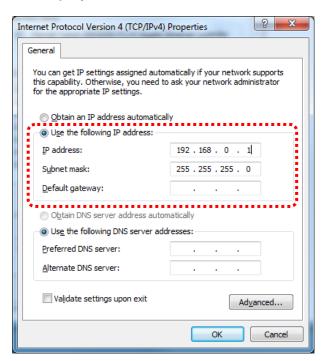## i. Check that the camera's LINK LED lights up.

If the LED is not lit up, check the LAN cable connection/disconnection or dirty connectors. In addition, the network device may not support Gigabit communication or the interface board on the camera may be defective.

ii. Check the IP address on the PC.

The same IP address may be set on the camera and the PC. The factory default for the camera's IP address is 192.168.0.10. The address set on the PC must use the same numerical values up to the third segment but a different number for the fourth segment (basically, the address must be the same up to 192.168.0).

Check the IP address on the PC using the following procedure (on Windows 7).

1. From the [Start] menu, select [Control Panel] -> [Network and Sharing Center].

2. Click [Change adapter settings] in the upper left of the screen. Right-click the displayed [Local Area Connection] and select [Properties]. Double-click [Internet Protocol Version 4] in the middle of the displayed window to check the IP address.

```
Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports
this capability. Otherwise, you need to ask your network administrator
for the appropriate IP settings.

  ○ Obtain an IP address automatically
  ⦿ Use the following IP address:
    IP address:              192 . 168 . 0 . 1|
    Subnet mask:             255 . 255 . 255 . 0
    Default gateway:            .   .   .

  ○ Obtain DNS server address automatically
  ⦿ Use the following DNS server addresses:
    Preferred DNS server:       .   .   .
    Alternate DNS server:       .   .   .

  ☐ Validate settings upon exit                    Advanced...

                                          OK          Cancel
```
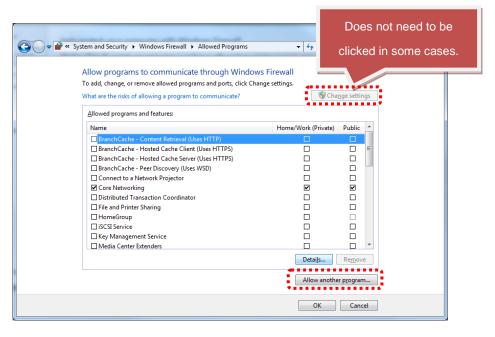
3. If the IP address displayed here is set to 192.168.0.10, the same address may be set on both the PC and the camera. Change the number for the fourth segment of the IP address to a number other than 10 (between 1 and 255; e.g., 192.168.0.1).
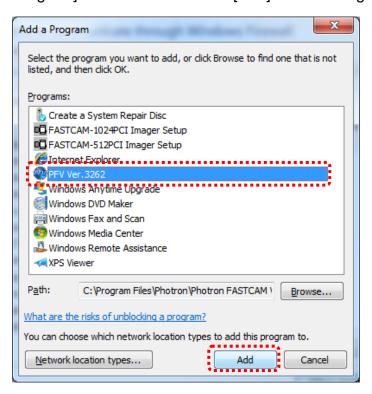
iii. Check the Windows Firewall settings.

Communication between the camera and the PFV may be blocked by the Windows Firewall. The PFV must be registered to the list of programs that are allowed access by the firewall.

Use the following procedure to register the PFV in the list of allowed programs (for Windows 7).

1. From the [Start] menu, select [Control Panel] -> [Network and Sharing Center]. Click [Windows Firewall] in the lower left of the screen.

2. Select [Allow a program or feature through Windows Firewall] in the upper left, click the [Change settings] button in the upper right -> click [Allow another program].
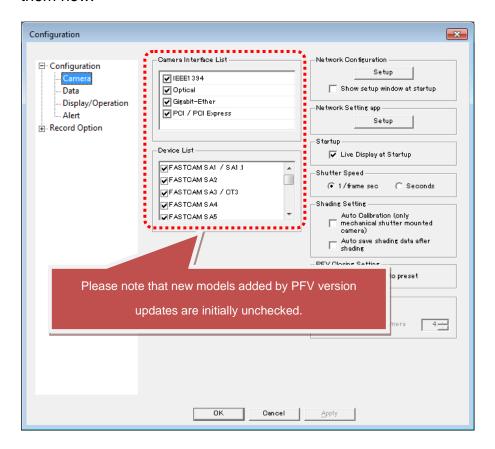
3. Select [PFV VerXXX] in the list of programs displayed in the [Add a Program] window and click the [Add] button to register.
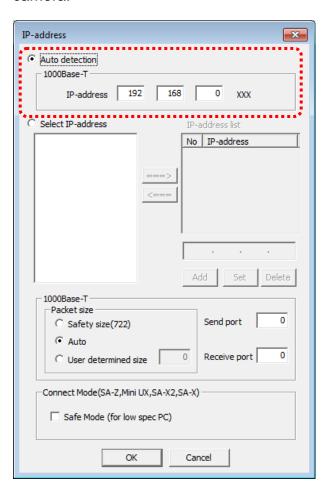
iv.   Automatically search for the camera with PFV.

The PFV includes a feature to automatically search for the specified IP address. Check the feature settings with the following procedure.

1. Start the PFV and then select [Configuration] from the upper [Option] menu.

2. Confirm that the interface you are using is checked under the [Camera Interface List]. Also confirm that the camera you are using is checked under the [Device List]. If these items are not checked, please check them now.

3. Click the [Setup] button under [Network Configuration] in the
    [Configuration] window to display the [IP-address] settings window.
    Confirm that [Auto detection] is checked. The IP address displayed
    below that item is the IP address used to automatically search for the
    camera.

v.   Use a command prompt to check the connection between the camera and the PC.

Run a Ping command from the command prompt to check that the connection between the camera and the PC is not being blocked. Use the following procedure to execute the Ping command.

1.   From the [Start] menu, open [Accessories] -> [Command Prompt].

2.   Input "ping 192.168.0.10" and press the Enter key.

3.   If the following type of response is displayed, the camera and the PC are connected. If the live images are still not displayed on the PFV under these conditions and there is no change, then there is a possibility that it is being blocked by the firewall. Refer to procedure iii or procedure viii.


```
C:¥WINDOWS>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time=40ms TTL=127
Reply from 192.168.0.2: bytes=32 time=40ms TTL=127
Reply from 192.168.0.2: bytes=32 time=40ms TTL=127
Reply from 192.168.0.2: bytes=32 time=40ms TTL=127

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),192.168.0.2
Approximate round trip times in milli-seconds:
    Minimum = 40ms, Maximum = 40ms, Average = 40ms
```

4.   If the following type of response is displayed, the camera and the PC are not connected. Check the LINK LED with procedure i and the IP address with procedure ii.


```
C:¥WINDOWS>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```
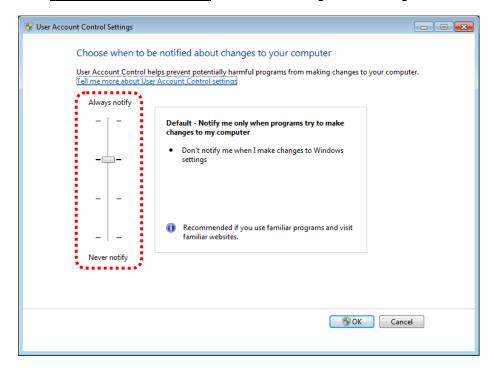
vi.   Check the [User Account Control] settings.

Some manufacturer's PCs are unable to properly connect unless the [User Account Control] feature is turned off. Use the following procedure to turn off the [User Account Control] feature.

1. From the [Start] menu, open [Control Panel] -> [User Accounts] and select [Change User Account Control settings].
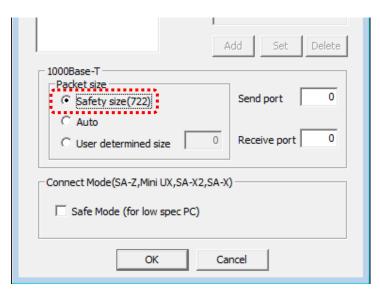

2. Move the left slider in the displayed window all the way to the bottom. The **PC must be restarted** after the settings are changed.

vii. **Check the packet size.**

The packet size may be restricted for some reason. The PFV has a feature to change the packet size. Use the following procedure to check the packet size.

1. Start the PFV and then select [Configuration] from the upper [Option] menu.

2. Click the [Setup] button under [Network Configuration] in the [Configuration] window to display the [IP-address] settings window. Check the [Safety size] item under [Packet size] in the lower part of the window.

viii. **Check any third-party firewall settings.**

Communication between the camera and the PFV may be blocked by third-party firewalls. After checking the Windows Firewall settings with procedure iii, check the settings of any third-party firewalls.
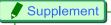
ix.　Check the following points when using the FASTCAM SA-X2/SA-Z.

Please note the following points regarding the LAN connection and the IP address when using the Photron FASTCAM SA-X2/SA-Z high-speed camera. Check the following points in addition to procedures i to viii.

◆ The FASTCAM SA-X2/SA-Z includes two Gigabit Ethernet interface connectors. Note that the factory default for the IP address of "GIGABIT ETHER2" is set to "192.168.1.10".

◆ Confirm the LAN connection interface. The connection may not work well or be unstable when connecting to the LAN with a PCI board, PCMCIA card, or USB-LAN unit.

◆ The FASTCAM SA-X2/SA-Z can connect using two LAN cables. For this reason, there are two IP addresses, but only one IP address should be specified for the PFV connection setting. If both IP addresses are specified, then they will be recognized as two separate cameras.

x.   Check the following points after checking procedures i through ix.

◆ Check that the NIC (LAN board) supports Gigabit Ethernet. Cards that only support 10/100 Base cannot connect. It is possible to route through a Gigabit Ether switching hub, but the communication will be slower.

◆ Check that you are not using a wireless LAN. The wireless LAN may be searched when searching the network, so try setting the wireless LAN to "Disable".

◆ Check to see if the terminal that is set is different from the LAN terminal you are using. Please be careful if there are two or more local area connections shown on the Windows network connections screen.

◆ In some cases the camera's IP address may have changed (the camera's factory default IP address is "192.168.0.10"). In this case, you need to connect the optional remote controller to confirm and change the address. Some models may be reset. Please contact our engineering manager regarding the supported models.

◆ Connect the camera head when using the FASTCAM MC2 / MC2.1 / MH4.

◆ When two or more cameras or PCs connect through a hub, the devices may have the same IP address and be unable to connect. Set a different IP address for each device.

◆ Confirm that the camera cable is Enhanced Category 5 or higher.

✎ Supplement

• If the issue is still unresolved after performing procedures i through x, please contact our engineering manager. Please also inquire about any points that are unclear in each procedure.

11. FAQ

Q.1.

Is a driver required for Gigabit Ethernet interface, as is the case with IEEE1394 and optical interface systems?

A.1.

No, it is not necessary to install any driver because communication takes place via the TCP/IP Ethernet connection.

Q.2.

What is "Jumbo Frame"?

A.2.

A frame that is bigger than the standard maximum frame size of Ethernet (1,518 byte) is called a "Jumbo Frame" or "Jumbo Packet".

When a "Jumbo Frame" is activated, the maximum size of data to be sent at one time becomes bigger and the actual data transfer speed (throughput) is increased.

To use the Jumbo Frame function, all devices are required to be compatible with Jumbo Frame, not only the devices on both sides, which communicate each other, but also other network devices like the network hub.

Q.3.

What is the difference between simply selecting **[Auto detection]** and selecting **[Select IP-address]** to register each IP address on **[IP-address dialog]**?

A.3.

There may be some difference in the startup time when starting up the PFV application. When **[Auto Detection]** is selected**,** the application looks for applicable camera systems by the IP address, which takes a little more time.

You can control only the specified camera(s), if there are several camera systems on the Network, if the IP address of each camera is registered.

On the other hand, if the network has a DHCP server in it, which assigns IP addresses for all devices in the network, the IP addresses assigned to cameras may be changed every time they are connected to the network, and the PC is required to be set in the **[Auto detection]** mode in advance to find the camera systems.

Q.4.

Is it possible to use the camera systems by connecting them to an existing 1000BASE-T network? Is it also possible to control the cameras in a WAN-connected network (e.g., controlling a camera remotely from other locations)?

A.4.

It is technically possible but we do NOT recommend it because of possible security issues involved. Please note there is NO assurance of security.

We only recommend using the camera system in a closed network.

Please contact our engineering manager regarding cases in which you connect multiple PCs and cameras.

Q.5.

How can multiple camera systems be connected to one PC?

A.5.

Multiple cameras can be connected to one PC by splitting the cables through a hub and assigning a unique IP address to each camera. However, the hub must be 1000BASE-T compatible. In addition, if you wish to use the "Jumbo Frame" function, the hub must also be compatible with the function.

Q.6.

Camera is not recognized by the software when starting up the PFV application.

A.6.

Try to read the applicable hardware manual well, such as the PFV manual and this document. Many possible causes are considered.

One typical cause may be that, at the first time the PC is connected to the camera system, the Firewall of Windows 7 may block the connection.

Another cause may be that, even thought the PFV software seems to be reacting correctly, the image presents some problem. Choosing **[Safety Size (722)]** may possibly solve the problem.

12.   *Contacting Photron*

For inquires related to this manual, contact Photron at the contact information listed below.

Additionally, the following items will be verified when inquiring, so please prepare them in advance.

Items Verified	Concrete Example
Contact Information	Company, school or organization name, customer contact name, contact phone number, Contact e-mail.
Condition of the system and what is known about it.	

Contact Information	
In Americas and Antipodes	**PHOTRON USA, INC.** 9520 Padgett Street, Suite 110 San Diego, CA 92126-4426, USA Phone : 800-585-2129 or 858-684-3555 Fax : 858-684-3558 E-mail : image@photron.com www.photron.com
In Europe, Africa and India	**PHOTRON EUROPE LIMITED** The Barn, Bottom Road, West Wycombe, Buckinghamshire, HP14 4BS, U.K. Phone : +44(0) 1494 48 1011 Fax : +44(0) 1494 48 7011 E-mail : image@photron.com www.photron.com
In other areas	**PHOTRON LIMITED** 21F, Jimbocho Mitsui Bldg., 1-105 Kanda Jimbocho, Chiyoda-Ku, Tokyo 101-0051 Phone : +81 3 3518 6271 Fax : +81 3 3518 6279 E-mail : image@photron.co.jp www.photron.co.jp

GigabitEthernet Interface

Connected Manual   Revision 1.11E

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