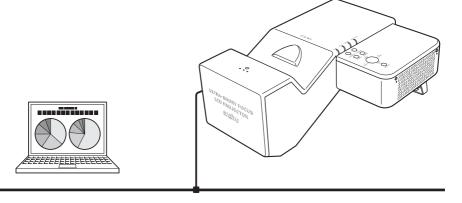


Owner's Manual

Network Set-up and Operation For Macintosh

Wired and Wireless Setting
Projector Set-up and Operation
Network Capture



This is the manual for the Network function.

Read this manual thoroughly to operate the Network function.

First, read the owner's manual of the projector to understand the basic operation of the projector and the safety instructions.

The safety instructions in the owner's manuals should be followed strictly.

Compliance

Federal Communications Commission Notice

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.

Model Number : QXXAVC922---P

Trade Name : Sanyo

Responsible party : SANYO FISHER COMPANY

Address : 21605 Plummer Street, Chatsworth, California 91311

Telephone No. : (818)998-7322

This device complies with Part 15 of FCC Rules and RSS-Gen of IC Rules. Operation is subject to the following two conditions: (1) the device may not cause interference, and (2) the device must accept any interference, including interference that may cause undesired operation of this device.

CAUTION: Properly shielded a grounded cables and connectors must be used for connection to host computer and /or peripherals in order to meet FCC emission limits.

VGA cable with ferrite core must be used for RF interference suppression.

For Canadian Users

This Class B digital apparatus complies with Canadian ICES-003.

Cet apparei numérique de la classe B est conforme à la norme NMB-003 du Canada.

FCC Warning

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

FCC RF Exposure Warning

- -This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.
- -This equipment complies with FCC radiation exposure limits set forth for uncontrolled equipment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65. This equipment must be installed and operated with at least 20cm and more between the radiator and person's body (excluding extremities: hands, wrists, feet and ankles).



The CE Mark is a Directive conformity mark of the European Community (EC).



The Alert Mark is a Directive conformity mark of the European Community.

| English | Hereby, SANYO Electric Co., Ltd., declares that this WLAN Module (QXXAVC922P) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. |
|---|---|
| Česky [Czech] | SANYO Electric Co., Ltd. tímto prohlašuje, že tento WLAN Module (QXXAVC922P) je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES. |
| Dansk [Danish] | Undertegnede SANYO Electric Co., Ltd. erklærer herved, at følgende udstyr WLAN Module (QXXAVC922P) overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF. |
| Deutsch [German] Hiermit erklärt SANYO Electric Co., Ltd., dass sich das Gerät WLAN Module (QXXA Übereinstimmung mit den grundlegenden Anforderungen und den übrigen ei Bestimmungen der Richtlinie 1999/5/EG befindet. | |
| Eesti [Estonian] | Käesolevaga kinnitab SANYO Electric Co., Ltd. seadme WLAN Module (QXXAVC922P) vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. |
| Español [Spanish] | Por medio de la presente SANYO Electric Co., Ltd. declara que el WLAN Module (QXXAVC922P) cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE. |
| Ελληνική [Greek] | ME THN ΠΑΡΟΥΣΑ SANYO Electric Co., Ltd. ΔΗΛΩΝΕΙ ΟΤΙ WLAN Module (QXXAVC922P) ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ. |
| Français [French] | Par la présente SANYO Electric Co., Ltd. déclare que l'appareil WLAN Module (QXXAVC922P) est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. |
| Italiano [Italian] | Con la presente SANYO Electric Co., Ltd. dichiara che questo WLAN Module (QXXAVC922P) è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE. |
| Latviski [Latvian] | Ar šo SANYO Electric Co., Ltd., deklarē, ka WLAN Module (QXXAVC922P) atbilst Direktīvas 1999/5/ EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. |
| Lietuvių [Lithuanian] | Šiuo SANYO Electric Co., Ltd.deklaruoja, kad šis WLAN Module (QXXAVC922P) atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. |
| Nederlands [Dutch] | Hierbij verklaart SANYO Electric Co., Ltd. dat het toestel WLAN Module (QXXAVC922P) in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. |
| Malti [Maltese] | Hawnhekk, SANYO Electric Co., Ltd., jiddikjara li dan WLAN Module (QXXAVC922P) jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC. |
| Magyar [Hungarian] | Alulírott, SANYO Electric Co., Ltd. nyilatkozom, hogy a WLAN Module (QXXAVC922P) megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak. |
| Polski [Polish] | Niniejszym SANYO Electric Co., Ltd. oświadcza, że WLAN Module (QXXAVC922P) jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC. |
| Português [Portuguese] | SANYO Electric Co., Ltd. declara que este (QXXAVC922P) está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE. |
| Slovensko [Slovenian] | SANYO Electric Co., Ltd. izjavlja, da je ta (QXXAVC922P) v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES. |
| Slovensky [Slovak] | SANYO Electric Co., Ltd. týmto vyhlasuje, že (QXXAVC922P) spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES. |
| Suomi [Finnish] | SANYO Electric Co., Ltd. vakuuttaa täten että (QXXAVC922P) tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. |
| Svenska [Swedish] | Härmed intygar SANYO Electric Co., Ltd. att denna (QXXAVC922P) står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. |
| Islenska [Icelandic] | Hér með lýsir SANYO Electric Co., Ltd. yfir því að (QXXAVC922P) er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC. |
| Norsk [Norwegian] | SANYO Electric Co., Ltd. erklærer herved at utstyret (QXXAVC922P) er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF. |

Safety instructions



CAUTION IN USING THE PROJECTOR VIA NETWORKS

- When you find a problem with the projector, remove the power cable immediately and inspect
 the unit. Using the projector with failure may cause fire or other accidents.
- If you remotely use the projector via networks, carry out a safety check regularly and take particular care to its environment. Incorrect installation may cause fire or other accidents.



CAUTION IN USING NETWORK FUNCTION

 SANYO Electric Co., Ltd. assumes no responsibility for the loss or damage of data, or damage of the computer caused by using this projector. Making back-up copies of valuable data in your computer is recommended.

Caution about Radio Wave

This unit operates in 2.4 GHz band, the same frequency band used for industrial, scientific, and medical equipment (such as pacemaker), as well as amateur radio stations.

Please read "Safety Instructions" section and make sure the following cautions.

- 1. Be sure that there are no other devices in the area that may use the same frequency band as Projector.
- If any other devices are causing radio interferences, change the communication frequency channel or move to other location.

Trademarks and Copyright

- Macintosh is a registered trademark of Apple, Inc. in the USA and other countries.
- PowerPC is a registered trademark of IBM Corporation.
- Intel Core is a registered trademark of Intel Corporation in the USA and other countries.
- Other company names, product names or other names noted in this manual are trademarks or registered trademarks of the respective companies. Note that * and TM marks are not indicated in the text of this manual.

Notes

- The contents of this manual are subject to change without notice.
- You may not copy the printed materials accompanying with the software.
- We shall not be responsible for any damages caused by reliance on this manual.

Expression/Abbreviation

The OS of the computer and the Web browser described in this manual is MAC OS X v10.4 and Safari 3. In case of another OS or Web browser, some instruction procedures may differ from the actual operation depending on your computer environment.

Use of this manual

This manual does not provide the description of basic operation and functions for computer, web browser, projector and network. For instructions about each piece of equipment or application software, please refer to the respective booklet.

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Operating environment and configuration

Required operating environment for computers

When operating the projector via the networks, computers should meet the operating environment below.

| OS | | MAC OS X v 10.4 or later | |
|------------------------|--------------|--|--|
| CPU | | 800 MHz PowerPC G4 or faster, or 1.8 GHz Intel Core processor or faster | |
| Memory | | 256MB or more (512MB is recommended) | |
| Free HDD Space | | 100MB | |
| Screen Resolution | | Required to support any of VGA (640 x 480), SVGA (800 x 600), XGA (1024 x 768), The color number should be either 16 bit (65536 colors) or 24/32 bit (16.77 million colors). | |
| Communication Protocol | | TCP/IP | |
| Network | Wireless LAN | Correspond to IEEE802.11b/g | |
| Correspond | Wired LAN | Correspond to 100BASE-TX (100Mbpd) /10BASE-T (10Mbps) | |
| Browser Application | | Safari 3.0 or later | |

Network specifications of the projector

LAN Terminal

| Data communication speed | 100Base-TX (100Mbps)/10Base-T (10Mbps) |
|--------------------------|--|
| Protocol | TCP/IP |

Wireless LAN

| Interface | IEEE802.11b/g |
|------------------------------|--|
| Communication Mode | AdHoc, Infrastructure |
| Data Transfer Speed | 1/2/5.5/11Mbps (IEEE802.11b) 6/9/12/18/24/36/48/54Mbps (IEEE802.11g) |
| Wireless Frequency (Channel) | 2412MHz–2462MHz (CH1–CH11) |
| Modulation Form | IEEE802.11g OFDM 54/4Mbps 64QAM, 36/24Mbps 16QAM, 18/12Mbps QRSK, 9/6Mbps BPSK IEEE802.11b DSSS 11/5Mbps CCK, 2Mbps DQPSK, 1Mbps DBPSK |
| Protocol | TCP/IP |
| Security | WEP 64Bit (Open/Shared) /WEP 128Bit (Open/Shared), WPA-PSK(TKIP), WPA2-PSK(AES), SSID, ESSID |
| Service area | about 30 m (without disturbance) Differs according to the operating environment. |

Compliance

| | JAPAN: VCCI ClassB,TELEC (Wireless) |
|-------------------------|---|
| Countries and Standards | USA: FCC Part15 Subpart C (Wireless) FCC Part15 Subpart C, Class B |
| | Canada: IC RSS-210 (Wireless), IC ICES-003 ClassB |
| | Europe: R&TTE, EMC, LVD |

1. About LAN functions

This chapter describes the features, the mechanism, and connection procedures of the LAN.

LAN functions and the features

This product is loaded with a LAN network function which enables you to project an image on the computer through a projector via Network with dedicated software.

With the software, you can also manipulate the projecting image and the projector.

This software has functions below and you can use the projector under various network environments to meet the wide-ranging needs of the operation.

- Accept both Wired and Wireless LAN environment. When the projector is operated via Wireless LAN, there is no need for wire connection.
- One computer image can be projected up to 5 projectors simultaneously.
- Network capture function to project the computer's screen image through the projector.
- Remote function which allows you to operate the projector from a distance.
- · Monitoring function for the projector operation.
- E-mail function which reports the operating status to your maintenance management.
- Multi control function which can operate multiple projectors (up to 100) simultaneously.

Image projecting system via LAN

The images are projected through an image capturing system which helps to project the faithful computer images. With this system, you can use the product under various application environments despite the differences of application software.

Flow of Image Transfer

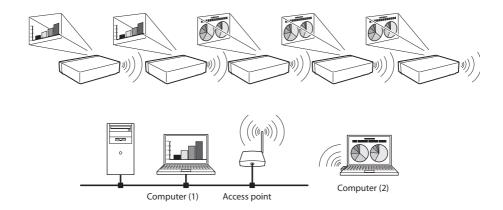
- 1. Download the computer image with the dedicated software faithfully to the real image.
- 2. The downloaded data will be compressed to the digital signal and transferred to the projector via the LAN (Wired or Wireless). (One computer can operate up to 5 projectors simultaneously.)
- 3. Digital signal will be reproduced into RGB image signal and will be projected by the projector.
- *The image will be transferred to each projector. The time lag can occur between each projection.

CAUTION: This product does not correspond to the application with DirectX, MS-Office assistant, and video replay such as DVD.

An example of the connection

The illustration below shows an example of the projection via the LAN.

You can project the image on Computer (1) (Wired LAN connection), or Computer (2) (Wireless LAN connection) through the selected projector .

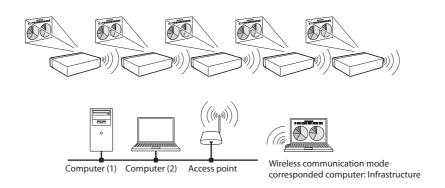


LAN connection modes

Connection modes differ depending on the LAN and computer environments. Connect appropriately for each environment.

■ Wireless LAN, Infrastructure Communication Mode

Communicate over an access point between Wired LAN equipment and Wireless LAN equipment. Or, communicate over an access point among multiple Wireless LAN equipment. Wireless LAN equipment will select an access point to communicate SSID/ESSID modes. These communication modes are used when both Wireless LAN and Wired LAN are used in the same network environment.



■ Wireless LAN, AdHoc Communication Mode

Communication mode between Wireless LAN equipment. (Communication mode via SSID/ESSID)

Wireless communication mode :AdHoc

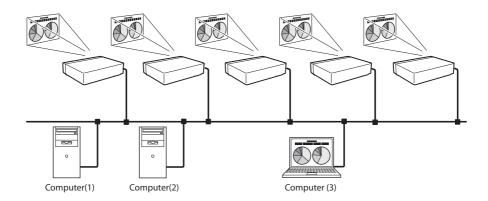
Network Projector



Wireless communication mode corresponded computer: AdHoc

■ Wired LAN Communication Mode

Communicate via the LAN line.



* Operate the computer mouse with the remote control.

When the projector's remote control employs mouse operating function, you can operate the computer by the remote control. To use the remote control, point to the projector. You do not need to connect the USB cable to operate the computer mouse.

(The remote control which is provided with the projector does not have the mouse operating function.)

2. Setup procedures

This chapter describes how to install the Network Capture 5 software and how to set up the networks.

To use the projector via the networks, follow the setup procedures below.

STEP 1

Install the software on computers.



Install the software recorded in CD-ROM on each computer which will be operated. Read following pages of this chapter to install.

STEP 2

Select Wired LAN or Wireless LAN then connect the LAN and set the configuration.

Decide depending on the LAN environment.

Wired LAN......Refer to "4. Wired LAN Configurations" (pp.25–31).

Wireless LAN Refer to "5. Wireless LAN Configurations" (pp.33-42).

Detailed LAN configurations need to be done with a browser later.

Ÿ

First, complete the Wired or Wireless LAN connection between computers and projectors, then start browser configurations.

→ "6. Basic setting and operation" (pp.43–62).

STEP 3

Network Configuration has completed.

Follow each chapter to project an image and operate the projector.

- Operate and manage the projector → "7. Controlling the projector" (pp.63-84)
 - → "Power control and status check" (p.64)
 - → "Controls" (p.66)
 - → "PC adjustment" (p.70)
 - → "Setting up the projector" (p.71)
 - → "Timer setting" (p.74)
 - → "Projector information" (p.77)
 - → "Multi-control" (p.79)
- Project an image on the computer → "8. Network capture functions" (pp.85-94)
 - → "Use of real time capture" (p.89)

^{*} Even if Network Capture 5 is not installed into the computer, the wireless LAN can be set up with USB memory. (p.93)

Installing the software

It is required to install the software into your computer to use the Network Capture function . Please install the software as follows.

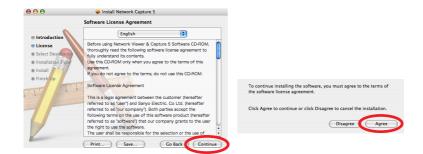
Note: To install the software into the computer, logon as an administrator. Before installation, make sure that the other applications are closed, otherwise proper installation cannot be made.

Network Capture 5 installation

- 1 Set the supplied Network Capture 5 CD-ROM into the CD-ROM drive of your computer. Double click Network Capture 5.pkg.
- 2 Click **Continue** on the introduction screen.



3 As the "License Agreement" will appear, read contents carefully, click Continue button and click Agree if you agree on the next screen to the license agreement to proceed with installing.



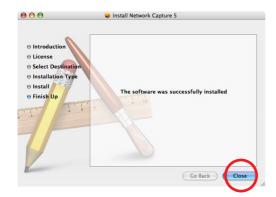
 $m{4}$ Select a Destination, and Click $m{Continue}$.



5 Click **Install** to perform a basic installation.



 $\bf 6$ Click **Close** to complete the installation.



Installed software

The following software is installed on your computer.

• Network Capture 5:

Captures the displayed image of the computer and serves it to the projector via the network.



^{*} Move to Trash to uninstall this software.

Chapter 3

3. Names and functions of the operation screen

This chapter describes the functions of each part of the operation screen.

Network connection standby display

Turn on the projector and select either "Wired" or "Wireless" from the input menu of the projector. The "Please wait..." message will be displayed on the screen. After short time, the network connection standby display screen will appear as below. While the "Please wait..." message is shown, some operations are invalid.

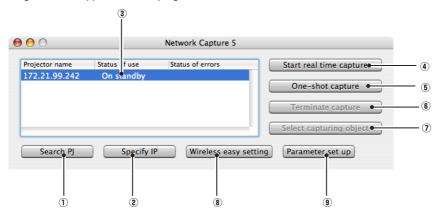
Ready for use.

Network Connection Standby Display

Network Capture 5 window

This software is to project the computer screen via the networks.

Click "Network Capture 5" from "Macintosh HD" --> "Application" --> "Network Capture 5" menu, then following screen will appear. Then the program will start.



Parts Names and Functions of the Screen

- Search PJ button
 Search the projector connected to the networks.
- ② Specify IP button When connected to a different segment network, the projector can not be retrieved automatically. In that case, press this button, the "Search specified IP address list" window appears, and then click Add button and enter the IP address directly to specify the projector in another window. The
- In that case, press this button, the "Search specified IP address list" window appears, and then click Add button and enter the IP address directly to specify the projector in another window. The registered multiple IP addresses can be searched at a time.

 ③ Network Projector List
- Display all the projectors connected to the networks.

 Show unoccupied projector as "On standby" and occupied projector as "Real time capturing" or "In One-shot mode". The indication of the status of use with "#" indicates that your computer is now using the network capture function.
 - After double-clicking on a projector name, the web browser gets activated and the projector setup screen will be displayed.

- ④ Start real time capture button Capture (Project) the computer screen in real time. After the execution of "Start real time capture", the application window disappears. ••• ◆
- Terminate capture button
 Terminate the real time capture and the One-shot capture.
- Select capturing object button It is possible to designate the window to capture individually. This button is disabled by default, so the full screen is captured. It is possible to change the capturing object function setting at parameter settings. For detail, refer to "Parameter set up" (p.88).
- Wireless easy setting button / Wireless easy release button Configure the Wireless LAN setting just by clicking this button. (The setting will be stored as AdHoc system) For details, refer to "5. Wireless LAN configurations"-->"Easy wireless setting" (p.39). To restore the easy setting, press the Wireless easy release button.
- Parameter setup button
 Activate the parameter setup window, and execute the connections setting and the image setting.
 For detail, refer to "Parameter set up" (p.88).
- To show the application window again, refer to the item "Commands on the menu bar" (p.87).

Using the multiple network adaptors

When your computer provides multiple network adaptors, the network adaptor selecting window will appear each time the Network Capture 5 software starts. Select a network adaptor and check the "Set network adaptor as default" and then click OK. To change the setting, refer to the item "Parameter set up" (p.88).



Chapter 4

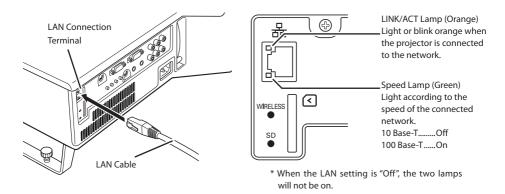
4. Wired LAN configurations

This chapter describes the preparation for Wired LAN setting with projectors and how to set the LAN environment.

Setting procedures and contents differ depending on the LAN installation location. When installing, consult your system administrator to set up the LAN appropriately.

Connecting to the LAN line

Connect the LAN cable to the LAN connection terminal of the projector.



Network environment settings

Set the Wired LAN network through the projector menu.

Detailed network settings will be made with browser. Refer to "6. Basic setting and operation" (p43-62). First, complete the settings described in this chapter before performing steps in "6. Basic setting and operation."

Setting Procedure

- 1. Turn on the projector and select "Wired" from the input menu of the projector.

 The projector's LINK/ACT Lamp will be on or blink. If the "Wired setting" is "Off", it will not be on.

 Follow step 2 and 3 to blink the lamp.
- 2. Select "Wired Setting" in the projector menu, and press **SELECT** button.

 Select similar LAN environment among LAN1, 2 and 3 with the Point ◀ ▶ buttons. (LAN1, 2, and 3 are the factory default setting environments. You can select three different environment among setting LAN1–3. For each setting, refer to the chart on page 31.)
 - When selecting "Off" in the "Wired setting", the LAN connection will be cut off. Use the function when disconnecting the projector from the network.
- 3. Press the Point ◀ ▶ buttons then the "Please wait..." message will appear and switching operation will start. Switching will take a while and after completing the operation, the "Ready for use" message will appear. During the switching period, the projector cannot be operated.

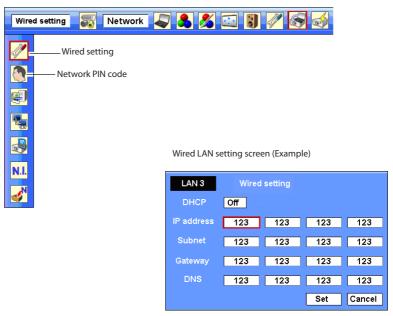
4. Press **SELECT** button.

LAN setting screen will appear and selected LAN settings will be displayed. Adjust each item to the setting environment. Consult your system administrator about the detailed settings.

Adjust the figures with the Point $\blacktriangle \blacktriangledown$ buttons and move among the items with the Point $\blacktriangleleft \blacktriangleright$ buttons.

5. After completing all the settings, select "Set" and press **SELECT** button. Now, all procedures have been done. To cancel the adjusted settings, select "Cancel" and press **SELECT** button.

To confirm whether the settings are correct, follow the procedures described from the next page. You can confirm the LAN settings you have made from "Network Information" (p.30). In such cases that the LAN cannot be connected, see this screen.



| Item | Description |
|------------|--|
| DHCP | Sets DHCP function On or Off. When you setup the network setting manually, select "Off". |
| | When it is set On, IP address, Subnet, Gateway and DNS are automatically set according to your |
| | network environment *1. |
| IP address | Sets IP address of the projector |
| Subnet | Sets Subnet mask. Normally sets 255.255.255.0 |
| Gateway*2 | Sets IP address of the default gateway (Router) |
| DNS*2 | Sets IP address of the DNS server. |

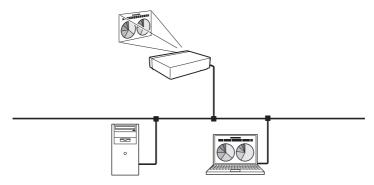
^{*1} Set "On" only when the DHCP server is available on your network environment.

^{*2} Set [255.255.255] if the network does not provide the gateway (router).

^{*3} Set [255.255.255.255] if you do not use the function E-mail alert.

Confirming the operation

Confirm that the projector has connected to the LAN properly.



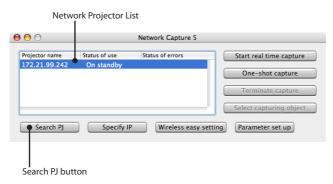
- 1. Activate "Network Capture 5" which is installed into the computer connected to the LAN.
- 2. After "Searching projector" message appears, the name of the projector* appears on the Network Projector List, then the network setting has completed properly.

When the name of the projector does not appear and error screen appears, the network has not connected yet. Try searching again with the **Search PJ** button. If error screen appears again, reconfirm the LAN setting. When the projector is set in the location separated by the router, see next page.

When Firewall function (Anti-virus software) is effective, network projector may not be found. In that case, disable the Firewall function and try searching again.

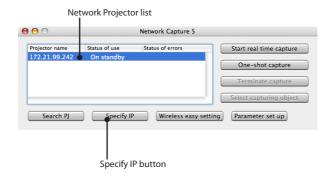
* If the projector is named, the name will be displayed. The name can be set with the following procedures in "6. Basic setting and operation" > "Initial setting" (p48). If the projector is not named, IP address of the projector will be displayed.

Network Capture screen



When set up the projector in the location separated by the router and the segment is different; Projector will not be found nor displayed. In that case, the projector needs to be searched directly by the IP address.

- 1. Press Specify IP button. The "Search specified IP address" window appears.
- 2. Click Add button, "IP address set up" window appears. Enter the IP address of the projector and Click OK button. Then, the projector will be added on the "Search specified IP address" window. Multiple projectors are registered and they are stored even when the application is closed.
- 3. Click OK button on the "Search specified IP address" window, the registered multiple projectors will be searched. Then, the projector will be added on the Network Projector List of the application window.



"Search specified IP address" window



"IP address set up" window



Network PIN code

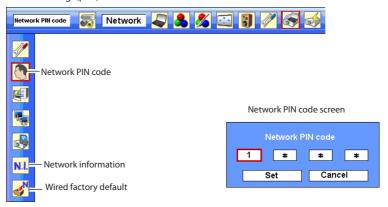
The Network PIN code is to restrict the access from the networks to the projector.

After setting the Network PIN code, you need to enter it to operate the projector via the networks.

- Select Network PIN code menu, and press SELECT button.
 The Network PIN code screen will appear.
- 2. Set the Network PIN code.

Set the figures with the Point $\blacktriangle \blacktriangledown$ buttons and move to the next items with the Point $\blacktriangleleft \blacktriangleright$ buttons. Select "Set" and press **SELECT** button to set. To cancel the preset Network PIN code, select "Cancel". When you do not want to set the Network PIN code, set "0000".

It is recommended to set the Network PIN code if you use the projector via the networks. The Network PIN code can be set also through the networks. See "6. Basic setting and operation" \rightarrow "Initial setting" \rightarrow "Network PIN code setting" (p49).



Network information

(See the menu above.)

Select Network information from the projector menu and press **SELECT** button to show LAN setting environment of the currently selected projector. (The description below is an example and different from what will be shown.)

Network information

MAIN PROGRAM: V1.000

MAC ADDRESS: 08007B650056

IP ADDRESS: 172.21.95.202

Wired factory default

(See the menu above.)

Select "Wired factory default" from the projector menu and press **SELECT** button. All the wired LAN settings will go back to the factory default settings. For details, refer to "Wired LAN factory default settings" (p.31).

Wired LAN factory default settings

| Devenuentes | SELECTED LAN | | |
|------------------|-----------------|-----------------|-----------------|
| Parameter | LAN1 | LAN2 | LAN3 |
| IP ADDRESS | 169.254.100.100 | 192.168.100.100 | 192.168.100.100 |
| SUBNET MASK | 255.255.0.0 | 255.255.255.0 | 255.255.255.0 |
| GATEWAY ADDRESS | 255.255.255.255 | 255.255.255.255 | 255.255.255.255 |
| DNS ADDRESS | 255.255.255.255 | 255.255.255.255 | 255.255.255.255 |
| IP CONFIGURATION | MANUAL | DHCP | MANUAL |

Chapter 5

5. Wireless LAN configurations

This chapter describes the preparation for Wireless LAN setting with projectors and how to set the LAN environment.

This projector contains the Wireless LAN module.

The setting procedures and configurations differ depending on the LAN installation location. Consult your system administrator for installation and set the LAN appropriately.

To operate via Wireless LAN, your computer has to be equipped with a Wireless LAN card adapter which supports IEEE 802.11b/g.

If connecting in Infrastructure mode with an access point, the access point is required to support IEEE 802.11b/g.

Caution: Do not use a mobile phone or PHS near (within 20cm/8inch) the projector. It may

Setting the network environment

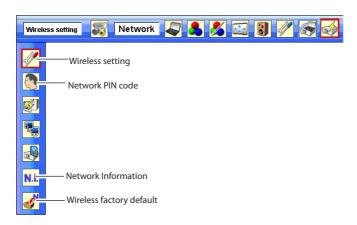
The projector contains the Wireless LAN adapter.

Set the Wireless LAN network through the projector menu.

Detailed network settings will be made with browser. Refer to "6. Basic setting and operation". →"Network configuration" (p.51). Complete the settings described in this chapter before performing the steps in "6. Basic setting and operation."

Setting procedures

- 1. Turn on the projector and select "Wireless" from the input menu of the projector. The "Please wait..." message will be displayed on the screen. After short time, the network connection standby display screen will appear. Refer to "3. Names and Functions of the Operation Screen" (p.21).
- 2. Select "Wireless Setting" from the projector menu and press SELECT button.
 Select similar environment between LAN 4 and LAN 5 with the Point ◀▶ buttons. (LAN 4, LAN 5, and SIMPLE* are factory default settings. Select similar environment to the installation location. For each settings, refer to "Wireless LAN factory default settings" on page 42.)
- * "SIMPLE" mode is used for simple setting without complicated LAN setting procedures to connect to the Wireless LAN. See "Easy wireless setting" (p.39) for details.
- 3. Press the Point button then the "Please wait..." message will appear and switching operation will start. Switching will take a while and after completing the operation the message will disappear. During the switching period, the projector cannot be operated.



4. Press SELECT button. LAN setting screen will appear and the selected LAN settings will be displayed. Adjust each item to the setting environment. Consult your system administrator for the detailed settings.

Adjust the figures with the Point ▲▼ buttons and move among the items with the Point ◀ ▶ buttons. When the network type is "AdHoc", you do not have to change "Sub net" and "Gateway" and leave them as default settings.

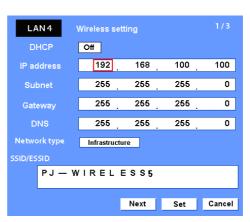
SSID/ESSID for the network type "Infrastructure" and "AdHoc" are required to be entered the same characters into the projector, the access point, and the Wireless LAN compatible computer (up to 32 characters). Characters can be selected from A~Z, a~z, blank (space), 0–9, or - (hyphen) with the Point ▶ buttons. Move to the next character with the Point ▶ buttons.

You can confirm that the projector settings from "Network Information" in the projector menu (p.40).

5. After completing all the settings, select "Set" and press **SELECT** button. Now, all procedures have been done. To cancel the adjusted settings, select the "Cancel" and press **SELECT** button.

To confirm whether the settings are correct, follow the procedures in "4. Wired LAN configurations" → "Confirming the Operation" (p.28).

For configuring of WEP, WPA-PSK, WPA2-PSK security, select "Next". Refer to "Configuring security with the projector" on next page for details.



| Item | Description |
|--------------|---|
| DHCP | Sets DHCP function On or Off. When you setup the network setting manually, select "Off". When |
| | its set On, IP address, Subnet, Gateway and DNS are automatically set according to your network |
| | environment *1. |
| IP address | Sets IP address of the projector |
| Subnet | Sets Subnet mask. Normally sets 255.255.255.0 |
| Gateway*2 | Sets IP address of the default gateway (Router) |
| DNS*2 | Sets IP address of the DNS server. Must be set when the E-mail function is used. |
| Network type | Sets Infrastructure or AdHoc mode. When the "AdHoc" is selected, the security "WPA-PSK" and |
| | "WPA2-PSK" are not available. |
| SSID/ESSID | dentifier of the wireless access point. |

^{*1} Set "On" only when the DHCP server is available on your network environment.

^{*2} Set [255.255.255.255] if the network does not provide the gateway (router).

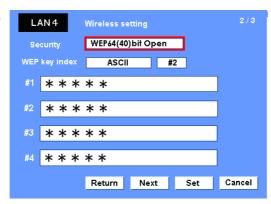
^{*3} Set [255.255.255.255] if you do not use the function E-mail alert.

Configuring security with the projector

Configure security with the projector by following the steps below.

After configuring the network in "5. Wireless LAN Configurations" (p.33-42), select "Next" in the LAN setting screen and press **SELECT** button. The security configuration screen appears. Refer to "6. Basic setting and operation" → "Configuring wireless LAN setting and security setting" (p.53) as well.

WEP configuration screen



Use the Point ▲▼ buttons to select the security type. To disable the security, select "Disable."

Use the Point ◀▼ buttons to move among the items; use the Point ▲▼ buttons to adjust settings.

This projector provides the following security options. Use optimum security option on your network environment.

WEP64(40)bit Open WEP64(40)bit Share WEP128(104)bit Open WEP128(104)bit Share WPA-PSK(TKIP) WPA2-PSK(AES)

Notes when entering characters:

The "¥" symbol is displayed as "\" when the ASCII key is used. The "*" symbol is treated as a character by the ASCII key, but it is not interpreted as a character by the HEX key. In HEX, the "*" symbol is displayed in red and setting is denied.

You can not set all the characters with the "*" symbol. This will be considered as no operation.

ASCII key characters : Space - 0 to 9 A to Z a to z ! " # \$ % & ' () * + , . / : ; < = > ? @ [¥] $^ [$ } ~ HEX key characters : 0 to 9 a to f

Use of security type "WEP"

- 1. Use the Point ▲▼ buttons to select "WEP" security type.
- 2. Select "WEP Key index". Use the Point ▲▼ buttons to choose the HEX or ASCII key. The four (#1–#4) kinds of WEP keys can be configured. Use the Point ◀▶ buttons to move to the right frame; use the Point ▲▼ buttons to select a WEP key number (#1–#4).

Refer the table below for the usable number of characters at the WEP security option.

| WEP option | Characters |
|----------------------|---------------|
| WEP64(40)bit ASCII | 5 characters |
| WEP64(40)bit HEX | 10 characters |
| WEP128(104)bit ASCII | 13 characters |
| WEP128(104)bit HEX | 26 characters |

WEP configuration screen



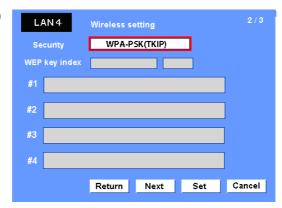
- 3. Use the Point ◀ ▶ buttons to select the Type field of the WEP key number that corresponds to the one you selected above and press SELECT button. The WEP key entry screen appears. In the WEP key entry field, all characters are displayed in "*". Use the Point ▲▼ buttons to select a character; use the Point ◀ ▶ buttons to select a character position. Enter all the characters displayed with "*".
 - When you select HEX at WEP key index and the entry key contains "*", the "*" symbol is displayed in red and setting is denied.
- 4. Use the Point ◀ ▶ buttons to select "Set" and press **SELECT** button to return to the Wireless setting screen. Select "Set" in the Wireless setting screen to complete the network setting.



Use of security type "WPA-PSK", "WPA2-PSK"

 Use the Point ▲▼ buttons to select "WPA-PSK" security type. WEP security setting fields are grayed out.

WPA-PSK configuration screen



2. Select "Next" and press **SELECT** button. The PSK key confirmation screen appears.



3. Use the Point ◀ ▶ buttons to select the key field and press SELECT button. The PSK key entry screen appears. Enter the PSK key by using the Point buttons. If the input PSK key has an error, the PSK key is indicated in red.

Available PSK key characters

ASCII code8 to 63 digits Hex code64 digits



4. Use the Point ◀ ▶ buttons to select "Set" and press SELECT button to return to the PSK confirmation screen. Select "Set" and press SELECT button to complete the PSK key setting and the Wireless setting screen appears. Select "Set" and press SELECT button to complete the network configuration.

^{*} Security "WPA-PSK" and "WPA2-PSK" modes are not available when the "AdHoc" network type is selected.

^{*} When you set the PSK keys with 64 digits, the projector checks whether all of the entered PSK keys are in Hex code or not. If any of the ASCII code is included in the entered PSK keys, the entered PSK keys are indicated in red as error.

Easy wireless setting

With this setting, you do not need any complicated LAN setting procedures.

The network type will be AdHoc mode.

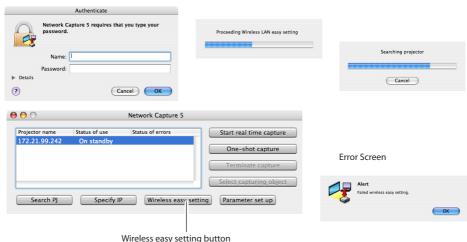
CAUTION: This function can be used only when logged in by Administrative right. The using network adaptor should be "AirMac".

Setting Procedures

- 1. Turn on the projector and select "Wireless" from the input menu of the projector.
- 2. Select "Wireless Setting" from the projector menu and press **SELECT** button.
- 3. Select "SIMPLE" with the Point ◀ ▶ buttons. Press the Point button then the "Please wait..." message will appear and switching operation will start. Switching will take a while and after completing the operation the message "Ready for use" will appear. During the switching period, the projector cannot be operated. ("SIMPLE" LAN settings will be shown by pressing SELECT button. The settings cannot be changed.)
- 4. Activate "Network Capture 5" which is installed in the computer.
- 5. Authentication window will appear. Type your Name and Password and then click **OK** button. The Wireless LAN setting screen will appear and the computer will start to set up the Wireless LAN setting. (Adjust the computer's Wireless LAN environment to the "SIMPLE" setting LAN environment.) After completing the settings, the computer will start searching the projector which was set as "SIMPLE" and will display the name of the projector or the IP address on the projector list. Confirm whether the LAN has been set correctly and works properly. Refer to "4. Wired LAN configurations" → "Confirming the operation" (p.28) for the confirmation procedures. If the network setup is not succeeded, the error screen will appear.

You can also set the easy wireless setting by clinking the Wireless easy setting button.

Setting screen



^{*} The projector should be set up previously to complete the easy wireless setting.

Computer environment and Wireless LAN connection;

Wireless LAN with Wireless Easy setting connection will be made via AdHoc mode. For setting contents, refer to "Wireless LAN factory default settings" (p.42).

With the Easy setting, computer's LAN environment setting will be switched to the setup environment. Because of that, the LAN cannot work for the other operation while using "Network Capture 5".

After terminating the application or pressing the Wireless Easy Setting button, the LAN environment will automatically go back to the previous state.

Network PIN code

The Network PIN code is to restrict the access from the networks to the projector.

After setting the Network PIN code, you need to enter it to operate the projector via the networks. Select "Network PIN code" from the projector menu and press **SELECT** button. Set with the same procedures as setting Wired LAN Network PIN code. Refer to "4. Wired LAN Configurations" → "Network PIN code" (p.30).

Network information

Display the current LAN connecting environment. Select "Network Information" from the projector menu and press **SELECT** button.

Wireless Information (Example)

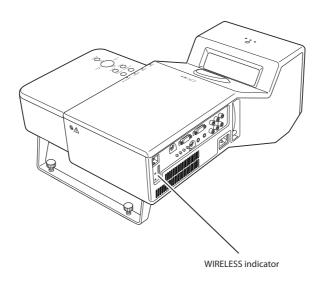
| Netwo | rk information |
|----------------|----------------|
| MAIN PROGRAM: | V1.000 |
| MAC ADDRESS: | 08007B650056 |
| IP ADDRESS: | 169.254.53.0 |
| WIRELESS MODE: | 802.11b |
| NETWORK TYPE: | AdHoc |
| CHANNEL: | 11 |
| SSID/ESSID: | WIRELESS |
| | |

Wireless factory default

Select "Wireless factory default" from the projector menu (p.34) and press **SELECT** button. All the wireless LAN settings will go back to the factory default settings. For details, refer to "Wireless LAN factory default settings" (p.42).

WIRELESS indicator display

When the wireless LAN configuration is set up correctly and the wireless communication is established with the access-point or the computer in the network, the WIRELESS indicator on the side panel lights up. While the projector scans the equipment in the network, the WIRELESS indicator blinks.



Wireless LAN factory default settings

Factory default settings for LAN4, LAN5, and SIMPLE as follows.

| Catting Itams | Selected LAN | | |
|-------------------------------------|-----------------|-----------------|-----------------|
| Setting Items | LAN4 | LAN5 | SIMPLE * |
| IP ADDRESS | 169.254.100.100 | 192.168.100.100 | 169.254.*.* |
| SUBNETMASK | 255.255.0.0 | 255.255.255.0 | 255.255.0.0 |
| GATEWAY ADDRESS | 255.255.255 | 255.255.255 | 255.255.255.255 |
| DNS ADDRESS | 255.255.255.255 | 255.255.255.255 | 255.255.255.255 |
| IP CONFIGURATION | MANUAL | DHCP | MANUAL |
| WIRELESS CHANNEL | 11 | 11 | 11 |
| NETWORK TYPE | 802.11b AdHoc | INFRASTRUCTURE | 802.11b AdHoc |
| WIRELESS SSID/ESSID (SSID/ESSID) | PJ-WIRELESS5 | ANY | PJ-WIRELESS5 |
| WEP (WEP encryption) | DISABLE | DISABLE | DISABLE |
| WPA-PSK (PSK key) | DISABLE | DISABLE | DISABLE |
| WPA2-PSK (PSK key) | DISABLE | DISABLE | DISABLE |

Chapter 6

6. Basic setting and operation

Describes basic operation and settings below by using the web browser.

· Initial setting

Setup the basic setting such as Projector name, Network PIN code, Time setting, etc.

· Network setting

Configure Wired/Wireless LAN environment.

· E-mail Setting

Configure E-mail function to manage the projector.

SNMP Setting

Configure SNMP function to manage the projector.

Caution: When operating the projector with the browser, connect the projector to the computer with Wired or Wireless LAN. Complete the connection in advance.

Starting up the Browser

- 1. Turn on the projector.
- 2. Start up the Network Capture 5. The Network Capture 5 searches projectors in the network and lists up the IP address or projector name of the projector on the Network Projector List.
- 3. Double click the projector to set from the Network Projector List.
- 4. The web browser will start up and display the setting page of the projector.



Select a display mode and login

This product provides 2 types of control mode, Standard Mode and Light Mode as below. Select a proper mode to match your PC and network environment by clicking on the text link. Once you select your desired display mode, the setting page you selected display mode will be displayed automatically from the next login. To change the display mode, click "Top" on lower-right corner of the setting page (p.45).



STANDARD MODE

LIGHT MODE

For computer display, displays graphical menus and settings. This mode is recommended for standard use.

Displays with 200 x 300 dots. This mode is optimized for use of the handheld computer, PDA, etc. It is also convenient if the network traffic is heavy. (This mode has some limitations on the multi-control functions.)

| "id = user" | s page, you need to log in to area on 172.21.99.242. rd will be sent in the clear. |
|-------------|--|
| Name: | user |
| Password: | |
| Rememb | per this password in my keychain |
| | Cancel Log In |

If the password has been set on the setting page, the authentication window will appear. In that case, type "user" onto the **User Name** text area and the login Network PIN code onto the **Password** text area and then click **Log in** button.

[Note]

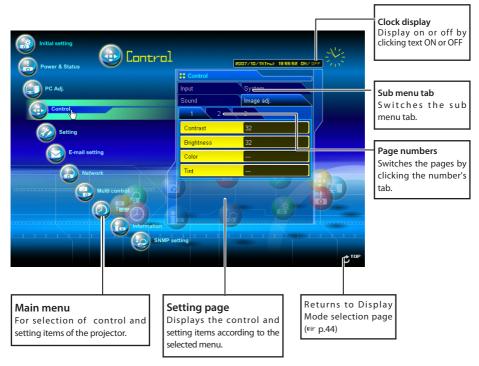
When the projector is accessed for the first time or the Network PIN code "0000" is set, the auto-login is performed and the next main setting page is displayed.

^{*} The entered User Name must be "user" and it can not be changed.

Display of main setting page

The following main setting page will be displayed depending on your display mode selection. Perform various kinds of settings through this page. Click on the menus to display the control and setting pages.

1 Main setting page in the Standard Mode display

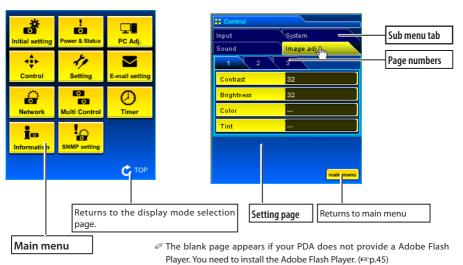


- * To change the screen language, use the initial setting menu (p.48)
- This Standard mode display is mainly used through this manual for the setting and control description.
- If your computer does not have the Adobe Flash Player version 6 or later, follow the message on the control page to install the Adobe Flash Player. For further product information or installing, see the Adobe homepage.

http://www.adobe.com

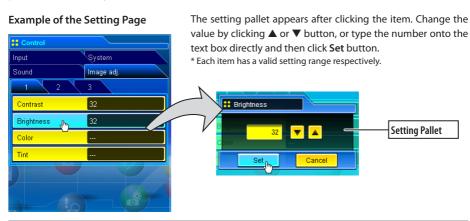


2 Main setting page in the Light Mode display



How to use the setting page

To control and set up the projector, use the setting menus on the web browser. The basic operation and procedures commonly used on this manual are described below.



The value in the text box indicates current value.

Each item has a valid setting range. The setting value exceeding its range becomes invalid. Some control items can not be used depending on the selected input mode or functions of the projector you use. In that case, the values of those items are indicated with "---".

Type of the setting pallet

Text box setting

Enter the number or text and then click **Set** button.

or

Change a value with ▲ or ▼ button and then click **Set** button. The value changes quickly when ▲ or ▼ button is kept pressing.







Pull-down menu setting

Select an item with pull-down menu button and then click **Set** button.

or

Select an item by clicking \blacktriangle or \blacktriangledown button.





Radio button setting

Select an item by selecting a radio button



Check box setting

Select items by ticking on check boxes.





Initial setting

After installing the projector, perform the following basic initial setting. Click **Initial Setting** on the main menu to display the initial setting page.



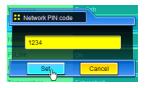
| Item | Description |
|------------------|--|
| Language | Switches display language on the setting page. English or Japanese. |
| Model name | Indicates the model name of the projector. |
| Projector name | Sets the name of projector. This projector name is listed on the application window of the Network Capture software. |
| Network PIN code | Sets the Network PIN code to login the setting page (@p.30, p.40) |
| PJLink | Switches PJLink password authentication on or off. |
| Password | Password for PJLink function |

Network PIN code setting

This is to set the Network PIN code to restrict the access from an unauthorized person through the network.

Enter a 4-digit number as the Network PIN code onto the text box and click **Set** button.

The projector's network part begins restarting and it takes about 20 seconds. Close (Quit) the web browser and access to the login page again in 20 seconds. This is to perform the login authentication firmly.



The default Network PIN code as [0000], which means no Network PIN code is set.

- When you connect the projector to the network, it is recommended to set a new Network PIN code. Only a four-digit number is valid for the Network PIN code.
- If you forget the Network PIN code to the projector, you can check it by selecting "Network PIN code" sub menu from "Network" menu on the projector. For further information, please see item "Network PIN code setting" (☞p.30, p.40).

PJLink and password setting

This is to set the PJLink password authentication on or off. If "On" is set with the PJLink pull-down menu, the password must be required. Enter a password* onto the text box and click **Set** button.

Refer to the projector owner's manual for further details of the PJLink function.



1 to 32 alphanumeric characters can be used for the password.

What's PJLink?

The projectors equipped with PJLink function can be used together on the same network, regardless of model or brand, for centralized control and monitoring. This standard was established by the Japan Business Machine and Information System Industries Association (JBMIA). http://pjlink.jbmia.or.jp/



| Item | Description |
|--------------|--|
| NTP address | Enter the address of NTP server. Please consult your network administrator for setting up of the NTP server. |
| Temperature | Switches display temperature unit Centigrade or |
| | Fahrenheit |
| Time setting | When clicking AUTO button, the date and time set on |
| | your computer are set to the projector. The timer icon appears when time is set up correctly. |
| Current time | Indicates current date and time set on the projector |
| Date | Sets date in manual |
| Time | Sets time in manual |

Date and time setting

NTP is abbreviated expressions of Network Time Protocol. It is a protocol to acquire the exact current time via the network. This projector acquires the current time from the NTP server and update the time in the network module. After setting the NTP address, the projector acquires the time per 24 hours. If the projector fails acquiring the time from the NTP server, the projector tries to acquire the time every 1 hour until it succeeds.

When the NTP address is not set, perform the time setting with "Auto-setting" or "manual setting" described below.

Auto setting

Click **AUTO** button on the page, the date and time set on your computer are set to the projector.

Note:

Confirm that your computer has a correct clock time before performing the auto time setting.

Manual setting

Click the item **Date** or **Time** and enter the date or time on the input box with adequate format.

Date is in year/month/day format.

ex. 2007/10/05

Time is in 24-hour:minute format.

ex. 18:30





This projector does not provide the built-in battery. The date and time information are lost when the projector turns off (when "Eco" is set for the stand-by mode (Refer to p.72)), or the network configuration is reset, or the input mode "Wired" or "Wireless" is turned. The timer function is disable until time is set up correctly. When using the NTP address for time setting, the current time is acquired at the projector starting up and the timer function is activated after finishing the time setting correctly.



Network configuration

Click **Network** on the main menu. The following setting page is displayed. Set up the projector's network environment on this **Setting** sub menu.



Setting of LAN

1. Select a type of LAN from **Change setting** pull down menu.

LAN1(Wired)

LAN2(Wired)

LAN3(Wired)

LAN4(Wireless)

LAN5(Wireless)

Simple(Wireless)

For the default setting of the above LAN, see the items "Factory Default Setting".

| Item | Description |
|-------------------|---|
| Change setting | Selects LAN1 to LAN5 and Simple |
| IP configuration | Sets DHCP or Manual |
| IP address | Sets IP address of the projector |
| Subnet mask | Sets Subnet mask. |
| Default gateway*1 | Sets IP address of the default gateway (Router) |
| DNS*2 | Sets IP address of the DNS server. |

^{*1} Set [255.255.255.255] if the network does not provide the gateway (router).

^{*2} Set [255.255.255.255] if you do not use the function E-mail alert.

Chapter 6 Basic setting and operation

- 2. Select either "Manual" or "DHCP" from IP configuration pull down menu. When "DHCP" is selected, IP address, Subnet mask, Default Gateway, DNS are automatically configured by DHCP function. Only the DNS address allows you to set up manually if the DNS address information is not provided on your DHCP server. When selecting "Manual", configure all the items manually. For further information, contact your network administrator. The address must be entered as 4 number groups separated by a dot like [192.168.001.101].
- 3. After completing the network configuration, press Regist button to register the network information. The Simple(Wireless) setting is fixed, which cannot be changed from factory default value.



- 4. To apply the setting, press Set button. The network of the projector starts re-booting and applies the setting. It takes about 20 seconds to complete. Close the web browser and access to the login page again in 20 seconds.
 - On the screen of the projector, the "Please wait..." message will appear and switching operation will start. Switching will take a while and after completing the operation, the "Ready for use" message will appear. During the switching period, the projector cannot be operated.

When you use LAN4(wireless) or LAN5(Wireless), the setting items of page [2] and [3] are activated and you can setup Wireless LAN setting and Security setting. See the item "Configuring Wireless LAN Setting and Security Setting" for further setting.

Configuring wireless LAN setting and security setting

Configure the wireless LAN setting and security setting for LAN4 and LAN5.

Configuring wireless LAN setting

1. Click page [2] of setting pages. Following wireless LAN setting can be done. After completing the configuration, press **Set** button.



| ltem | Description |
|---------------|---|
| Wireless Mode | Select the Communication standard 802.11b or 802.11b/g |
| Network Type | Select either "Infrastructure" or "AdHoc". When selecting the "AdHoc", the security |
| | "WPA-PSK" and "WPA2-PSK" mode are not available. |
| SSID/ESSID | Set the SSID/ESSID. (up to ASCII 32 characters) |
| | SSID/ESSID is case-sensitive. Even though all characters on the Wireless |
| | information is uppercase, it is necessary to distinguish between upper case and |
| | lower case characters. |
| Channel | If you use the projector in 802.11AdHoc mode, select the channel, from 1 to 11. |

Configuring wireless LAN security setting

Click page [3] of setting pages. Following wireless LAN security setting can be done. After completing the configuration, press **Set** button.



Item Description

Network security ...Sets the type of encryption. Following types are available.

WEP64(40)bit Open WEP64(40)bit Share WEP128(104)bit Open WEP128(104)bit Share WPA-PSK(TKIP)

WPA2-PSK(AES)

Input type.....ASCII or HEX. See item "Notes for entering characters"

Key index1 - 4.....Enter keys of encryption.

The used number of character changes as the table below according to the type of WEP encryption and input type.

| WEP option | Characters |
|----------------------|---------------|
| WEP64(40)bit ASCII | 5 characters |
| WEP64(40)bit HEX | 10 characters |
| WEP128(104)bit ASCII | 13 characters |
| WEP128(104)bit HEX | 26 characters |

Four key indexes can be set, however, the only one with check on its radio button is effective. Both of the number and value of the key index in effect must be same as those of your computer and the access point.

Depending on computers and access points, you may be allowed to select only one WEP key. In that case, use key index1.

PSK......Available when the "WPA-PSK(TKIP)" or "WPA2-PSK(AES)" is selected.

The PSK key must be no fewer than 8, nor more than 63 digits with ASCII code, and 64 digits with Hex code.

Notes for entering characters:

The "¥" symbol is displayed as "\" when the ASCII key is used. The "*" symbol is treated as a character by the ASCII key, but it is not interpreted as a character by the HEX key. In HEX, the "*" symbol is displayed in red and setting is denied.

You can not set all the characters with the "*" symbol. It will be considered as no operation.

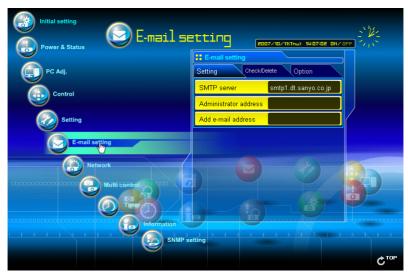
ASCII key characters: Space - 0 to 9 A to Z a to z!" #\$ % & '()*+,./:;<=>?@[¥]^_`{|}~

HEX key characters: 0 to 9 a to f



E-mail setting

This product has an E-mail function which can send an alert message to users or an administrator if it detects an abnormality on the projector or run out of the life span of the lamp. Click E-mail Setting on the main menu and follow the below steps.





| Item | Description |
|--------------------------------|---|
| SMTP server*1 Administrator | Sets server name or IP address of the SMTP server |
| address Add e-mail | Sets E-mail address of administrator |
| address | Sets E-mail address of the user to send a mail when the |

1 Setting SMTP server and administrator address

Set the server name or IP address of the SMTP server* and administrator address. The administrator address is set to "Reply-To" address of the message sent from the projector.

*1The SMTP server is a server for sending E-mail. Please contact your network administrator to have this SMTP server address. When the server name for SMTP server is used, DNS must be set up to activate the E-mail function.(exp.51)

If the projector sends an alert message due to the abnormality on the projector but the SMTP server is down in some other reason, the message will not be sent. In that case, the message "Unable to connect to server." will be displayed on the setting page. To clear this message, set up SMTP server address again.

To use the E-mail function, it must be set the DNS address on the Network setting page correctly.

You cannot use this E-mail function if the DNS server and SMTP server cannot be used in your network environment.

The projector does not send message to the address set in "Administrator address" text box. If you want to send e-mails to the administrator address, enter the administrator address into "Add e-mail address" text box.

2 Registering and deleting E-mail addresses

Click "Add E-mail address" and type the E-mail address onto the text box and click **Set** button. To check the registered addresses, click **Check/Delete** sub menu tab. The addresses are listed as the figure on the right.

Up to 10 E-mail addresses can be registered.

To delete the registered addresses, check the address you want to delete and click **Delete** button.

3 Option selection for sending alert mail

Click **Option** sub menu tab. Check the condition items under which alert mail will be sent and click **Set** button.

Please refer to the item "Examples :Type and contents of alert mail" described on the next page.



Check / Delete



Option



- lamp off.

 When the signal is interrupted.
- ☐ When Auto Play is failed.

[3]----

When lamp Corres. Value reaches

[] hours.

Attached message

- "When PJ lamp is off" signifies the lamp goes out without user operation. "When PJ is turned into Standby in proper user operation" signifies that the projector is turned on by using the web browser and then it is turned into standby with ON/STANDBY button on the top control or the remote control.
- The length of message should be less than 255 characters.
- Up to 99,999 hours can be set for use time.

Examples: Type and contents of alert mail

When the projector has an abnormality, the following alert messages are sent to the registered E-mail address depending on your selected condition. Administrator or user can take an efficient action quickly by receiving this message. This is very useful to maintain and service the projector. The following are examples of received messages.

• When internal PJ temperature is too high:

TITLE: Message from projector

10-03-2007 00:59

Projector Model Name: model name

TCP/IP: 192.168.1.201 Projector Name: Proj05

It sends you following message.

*The Projector lamp is turned off, because internal Projector temperature is too high. Wait for the completion of the cooling process and make sure the projector has been turned into Standby. Then turn the projector on again.

If the Indicator continues flashing, check the air filter for dust accumulation.

[A] 81.5 degrees fahrenheit [B] 134 degrees fahrenheit [C] 95.6 degrees fahrenheit Temperature of Sensor B is too high.

The projector let users know the information which thermal sensors inside the projector detected the abnormal temperature risen and so the projector was turned off. Please refer to item "Power control and status check" (** p.64) for the location of the sensors and each temperature . Also see the owner's manual of the projector for further details.

• When internal PJ power circuit is failed:

TITLE: Message from projector 10-03-2007 00:59 Projector Model Name: model name TCP/IP: 192.168.1.201 Projector Name: Proj05 It sends you following message. *The Projector lamp is turned off, because Projector power circuit is failed. Unplug the Projector from AC outlet and ask servicing to qualified service personnel. MAIN. P-FAIL OK MAIN. 1.8V OK Error information P-FAIL NG MCI.

The projector lamp was turned off, because the projector power circuit failed.
Unplug the projector from AC outlet and contact a qualified service personnel for service with the error information.

• When PJ lamp replacement time is reached:

TITLE: Message from projector 10-03-2007 00:59 Projector Model Name: *model name* TCP/IP: 192.168.1.201 Projector Name: Proj05

It sends you following message.

*The PJ lamp replace time is reached.

Replace it with a new lamp immediately and reset the lamp counter. If the projector is used without resetting the lamp counter, the alert mail is sent to users in every power-on of the projector. This alert mail will not be sent when the mail sending condition "When the life span of lamp is reached" is unchecked.

• When lamp corres. value reaches preselect use time:

TITLE: Message from projector 10-03-2007 00:59 Projector Model Name: *model name* TCP/IP: 192.168.1.201 Projector Name: Proj05

It sends you following message.

*The accumulated lamp use time reaches 1800 hours. Prepare for the lamp replacement.

Discretional messages

The projector sends a free message when the lamp use time (Corresponding value) reaches the preselected lamp use time. It can be used for preparation of the lamp replacement and the maintenance required.



This product provides a SNMP (Simple Network Management Protocol) agent function. The SNMP consists of a manager and agents. The group which exchanges information with SNMP is called "Community". There are two access modes in a

community, Refer (read only) and Set (read-write). This product allows to use Refer (read only) only. The SNMP message informs the projector status called "Trap" to an administrator. Click **SNMP Setting** on the main menu and set up each item.





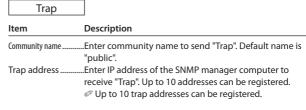
| PJ information |
|----------------|
|----------------|

| Item | Description |
|-------------|---|
| Contact | Enter user name of the projector etc. (optional) |
| Place | Enter place of the projector (optional) |
| Community | |
| name(refer) | Enter community name (read only). Default name is |
| | "public". |

The SNMP agent provided with this product is based upon MIB-2 defined by RFC1213. For private MIB information, refer to file "Mibinfo/XUPjNet.mib" in the CD-ROM.

Chapter 6 Basic setting and operation







Trap check/delete

Check and delete the trap address

Checking the registered trap address and deleting the address.

To delete the address, tick the check box in front of the IP address and click **Delete** button.



Trap option

Trap option setting

Tick the check boxes in front of the condition item to send the trap. Click **Set** button if you tick or un-tick the check box on a page.

| [1] When PJ lamp is off. When PJ lamp replacement time is reached. When internal PJ power circuit is failed. When internal PJ temperature is too high. |
|---|
| [2] When PJ is turned into Standby in proper user operation. When accumulated filter use time reaches [] hours. When Power management function turns PJ lamp off. |
| [3] ¬ When the signal is interrupted. ¬ When Auto Play is failed. ¬ When lamp Corres. Value reaches [] hours. |

[&]quot;When PJ lamp is off" signifies the lamp goes out without user operation. "When PJ is turned into Standby in proper user operation" signifies that the projector is turned on by using the web browser and then it is turned into standby with ON/STANDBY button on the top control or the remote control.

Up to 99,999 hours can be set for the time setting.

7. Controlling the projector

Describes controlling and setting of the projector by using the web browser.



Power control and status check

Click **Power & Status** on the main menu. The control page will be displayed.

By clicking **ON** or **Standby** button on the page, the power of the projector can be controlled.





Popup confirmation window

| ltem | Description |
|------|-------------|
| | |

PJ status

Power control......Controls the projector power by clicking the "ON" or "Standby" button.

PJ temp.

Inside temp.ADisplays the surrounding temperature of lamp in the projector. Inside temp.BDisplays the surrounding temperature of panel in the projector.

External temp.Displays the surrounding temperature of the intake vent.

.......The warning icon will appear if the temperature exceeds a specified value. Check if there is no object to obstruct the airflow around the intake or exhaust vent. It might be airfilter clogged. Clean up the airfilter.

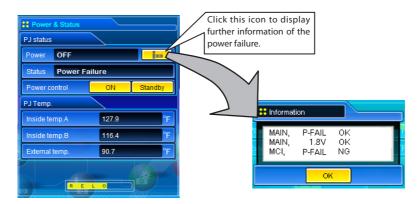
*The temperature unit can be set either Centigrade or Fahrenheit in the item "Initial Setting". (©p.50)

The projector cannot be turned on while the projector is cooling down.

The web browser checks and updates the projector's condition every 30 seconds automatically.

About projector condition

| Status | Description |
|-----------------------------------|---|
| Normal | Projector is operating normally. |
| Power management in operation | Power management is operating |
| Lamp failure | Lamp failure is occurring |
| Abnormal Temperature | The temperature of the projector became too high |
| Cooling down after abnormal Temp. | Projector detects abnormal temp. and is cooling down itself. |
| Standby after Abnormal Temp | Projector detects abnormal temp. and is set into standby mode. |
| Power failure | Power failure has occurred inside the projector. Projector is turned off. |
| | Unplug the AC cord and contact a qualified service personnel for service. |
| | If the power failure occurs on the projector, "Power failure" is indicated on |
| | the status column and the information icon appears on the power column |
| | as shown below. Click this icon to display further information of the power |
| | failure. |



When a security (PIN code lock) has been set on the projector, you also cannot control it through the network. To control the projector through the network, unlock the security on the projector using with the projector's menu control.

Caution about turning on/off the projector via the networks

When turning on/off the projector via the networks, preset the projector as follows:

- 1. Select "Setting" from the Projector menu.
- 2. Select "Standby mode" from the Setting menu and set it as "Normal".

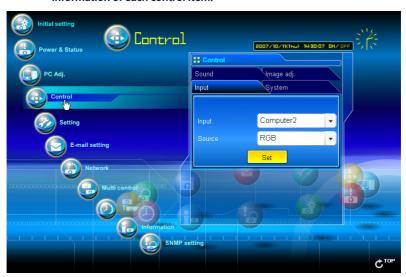
If you set this function as Normal, the network part of the projector is constantly provided with power even if the projector is turned off. If you set this as Eco, then the network part will be turned off when you turn off the projector. Consequently, you cannot turn on/off the projector via the networks.



Controls

Click **Control** on the main menu. The setting method differs depending on the contents of the page. Click on the page number to change pages and select desired setting items.

Please see the owner's manual of the projector to have the further information of each control item.



Input

This function is to select the input mode and source mode of the projector. Click **Set** button after selecting the input and source mode.



| Item | Description | | |
|--------|------------------------|--|--|
| Input | Selects input mo | de of the projector. | |
| Source | Selects signal sou | arce of the input. | |
| | Computer1 : | RGB RGB(Scart) | |
| | Computer2 : Video : | RGB Auto Video S-video Component | |
| | Network: | Wired Wireless | |

The control page displays valid control items depending on the selected input mode, signal or functions of the projector you use, therefore, there may be different controls between the described items and actual control items on the page display. For further information, refer to the projector's owner's manual.

When the projector is standby, only the timer on the setting menu is available; others are not available.

System

This function is to select the system of signal input to the projector. The available system modes are listed on the pull-down menu button according to the input signal. Select a system and then click **Set** button.



Available selection at the RGB input

| 1 | Item | Description |
|---|------|--|
| | XGA1 | lt automatically switches to the proper computer |
| | | system of the input signal. |
| 1 | | * The computer system modes (VGA, SVGA, XGA. SXGA, |
| | | UXGA, WXGA) which meet the input signal listed. |

Available selection at the Video/S-video/Scart input

| Item | Description |
|------|---|
| AUTO | It automatically switches to the proper color system of |
| | the input signal. |
| | * The selectable color systems are PAL, SECAM, NTSC, |
| | NTSC4.43, PAL-M and PAL-N. |
| | * AUTO is fixed at the Scart input. |

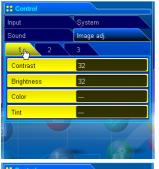
Available selection at the Component input

| Item | Description |
|------|---|
| AUTO | It automatically switches to the proper scanning system |
| | of the input signal. |
| | * The selectable scanning systems are 480i, 575i, 480p, |
| | 575p, 720p, 1035i and 1080i. |

If the modes (Mode1 to Mode5) stored in the item "PC Adjustment" (FF p.70) are available, they are also listed together with the above mode.

Image adjustment

This function is to adjust the projected picture image and save the image mode. To store the adjusted value, click **Store** button, and to load the adjusted value, click **Load** button.



| Item | Description |
|------------|----------------------------------|
| Contrast | Adjusts picture contrast |
| Brightness | Adjusts picture brightness |
| Color | Adjusts picture color saturation |
| Tint | Adjusts picture hue |



| item | Description |
|---------------|--|
| Color temp | Sets a color temperature mode. |
| White balance | |
| Red, Green, | |
| Blue | Adjusts each white balance respectively. |
| Sharpness | Adjusts picture sharpness. |

* When the value of the white balance is changed, the color temp. indicates "Adj."



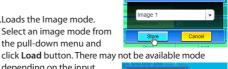
| Item Des | cription |
|----------|----------|
|----------|----------|

Gamma...... Adjusts brightness of darker part of the picture. Noise reduction Switches noise reduction mode Progressive.....Switches progressive mode Reset.....Resets the Image adjustment to previous levels. Store.....Stores the Image adjustment values. Select an item [Image 1 - Image 4] from the pull-down menu and click

Store button.

...Loads the Image mode. Select an image mode from the pull-down menu and

depending on the input mode as shown in the table left.



** Store

Image 1

Input source Image mode Video Computer Dynamic Standard Real Cinema Blackboard(Green) Colorboard Image 1 - 4

source. The error message appears when the disabled image mode indicated with "*" is selected.

Sound

This function is to adjust the sound of the projector. The values in the text box represent the current control value or status.



| Item | Description |
|--------|---|
| Volume | Adjusts the sound volume from the speakers. |
| Mute | Suppresses the sound. |



PC adjustment

Click **PC Adj.** on the main menu. This function is to adjust the signal from the computer connected to the projector to obtain the proper picture image on the screen.





| | | 9 |
|---|--------------|---|
| ī | Item | Description |
| | Current mode | Displays a current mode like VGA, SVGA, XGA, SXGA, UXGA, |
| l | | WXGA, etc. or MODE1 - MODE5 are the customized mode |
| l | | created by using the "Mode Store" function described below. |
| l | Auto PC adj | Performs automatic adjustment. |
| l | Fine sync | Performs Fine Sync adjustment. |
| l | Total dots | Adjust the number of total dots in the horizontal period. |
| l | Clamp | Adjusts the phase of the clamp. |
| l | Display area | |
| l | Horizontal | Adjusts the image area horizontally. |
| | Vertical | Adjusts the image area vertically. |
| | | |
| | | |



| Item | Description |
|------------|--|
| Position | |
| Horizontal | Adjusts the horizontal position of the screen. |
| Vertical | Adjusts the vertical position of the screen. |
| Reset | Resets the PC adjustments to the previous levels. |
| Mode Store | Stores the PC adjustment values. Select a mode no. |
| | [Mode1 - Mode5] from the pull-down menu. |
| Mode Free | Clear the PC adjustment values. Select a mode no. |
| | [Mode1 - Mode5] from the pull-down menu. |



Setting up the projector

Click Setting on the main menu. This function is to set up the projector. Select the sub menu [Screen setting], [Setting 1] or , [Setting 2] and then set up each setting.





| ltem | Description |
|------|-------------|

Screen....

.Switches the screen mode. There may not be available mode depending on the input mode as shown in the table below.

| Input source | | | | |
|---------------|-------|----------|--|--|
| Screen mode | Video | Computer | | |
| Normal | ~ | ~ | | |
| True | * | ~ | | |
| Wide | ~ | ~ | | |
| Full | * | ~ | | |
| Digital zoom+ | ~ | ~ | | |
| Digital zoom- | ~ | ~ | | |

^{The mark "✓" indicates the available screen mode in the selected input source system. The error message appears when the disabled screen mode indicated with "*" is selected.}

Chapter 7 Controlling the projector



| Item | Description |
|--------------|--|
| Language | Sets the language display of projector's on-screen display menu. |
| Auto setup | Executes the Auto PC Adj, and Input Search function |
| | below according to the each setting after clicking Start |
| | button. |
| Auto PC Adj | Sets Auto PC Adjustment mode. |
| Input Search | Sets the auto-input signal detection mode. |
| Blue back | Sets the blue screen background when no signal input. |
| Display | Switches on or off the on-screen menu display on the |
| | screen. |
| | Countdown off Displays image during the starting up. |



| Item | Description |
|--------------|---|
| Logo | Sets the logo display on the screen during the startup. |
| Ceiling | Sets the image top/bottom and left/right reversed. |
| Rear | Sets the image left/right reversed. |
| Standby mode | Sets the network function enable or disable in the |
| , | standby mode. |
| | NormalEnable |
| | EcoDisable |
| No show | Sets the black out image temporarily. |
| | |
| | |



| ltem | Description |
|----------------|---|
| Freeze | Sets the image to freeze mode. |
| Power | |
| management | Sets into the selected power management mode if the |
| | input signal is interrupted and no control key is pressed |
| | for the specified period of time. |
| | *The specified time can be set 1 to 30 min. |
| On start | Sets the power-on mode when the AC cord is |
| | connected to the outlet. |
| Lamp control | Selects lamp control mode. |
| Remote control | Sets the remote control code. |
| | |
| | |



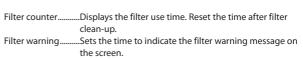
| Item | Description |
|--|---|
| Key lockSets the prohibition of controls either Projector or | |
| | Remote control. |
| Fan | Sets the cooling options after turning off. |
| | L1 Normal cooling |
| | L2 Silent cooling |
| Fan controlSets the fan control speed. | |
| | Off Normal mode |
| | On1 Highland mode 1 |
| | On2 Highland mode 2 |
| Zoom | Sets the zoom function. (Reset, Memory1, Memory2) |
| Uniformity AdjSets the uniformity adjustment. (Reset, Memory1, | |
| | Memory2) |
| Terminal | Sets the COMPUTER IN 2/MONITOR OUT terminal to |
| | Computer 2 or Monitor Out. |



Lamp Corres. Value (h)Displays the lamp use time (Corresponding value) . Reset the time after the lamp is replaced. Lamp counter resetting 1. Select a Lamp radio button and then click Reset button. 2. Click OK button to execute the reset.

Description

Item





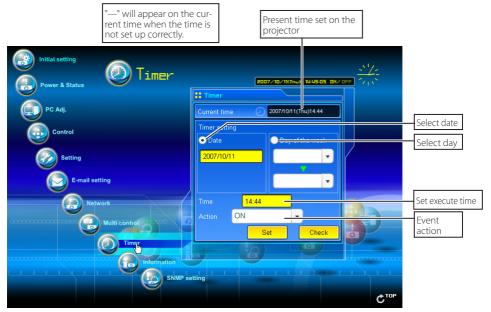
| Item | Description |
|-----------------|--|
| Factory default | . Sets all of the projector control items to the factory default setting except the following items. |
| | Lamp Corres. Value, PJ time, Filter time, PIN code lock and Logo PIN code lock. |
| P-TIMER | Switches the P-TIMER display. |
| | ON Starts P-TIMER indication |
| | STOP Stops P-TIMER counting |
| | OFF Stops P-TIMER indication |



Timer setting

This page is to set the timer to turn the projector off or on at a programmed day/date and time. Follow the steps below for setting.

Click Timer on the main menu.



How to set the timer

1 Set a day or date

To set the timer event at the same time everyday or every week,

select day entry with radio button and then select desired day from the pull-down menu button. The selectable days are as follows:

- Same time everyday

- Every week (days from Monday to Sunday)

To set the timer event on specified date,

select date entry with radio button and then type the date with (Year/Month/Date) format.

Ex.: Type [2007/12/20] if you specify [December 20, 2007].

This projector does not provide the built-in battery. The date and time information are lost when the projector turns off (when "Eco" is set for the stand-by mode (Refer to p.72)), or the network configuration is reset, or the input mode "Wired" or "Wireless" is turned. The timer function is disabled until time is set up correctly. When using the NTP address for time setting, the current time is acquired at the projector starting up and the timer function is activated after finishing the time setting correctly.

2 Set an execute time

Type the time with (Hour:Minute) and 24 hours format.

Ex.: Type [18:25] if you specify [PM 6 o'clock and 25 minutes].

3 Select an event action

Select an event action from the pull-down menu.

| Event | Action |
|-------------|-------------------------------|
| ON | Turns on the projector |
| OFF | Turns off the projector |
| Lamp Auto | Changes lamp mode to "Auto" |
| Lamp Normal | Changes lamp mode to "Normal" |
| Lamp Eco | Changes lamp mode to "Eco" |

4 Register an event

Click **Set** button to register the set timer event. Repeat steps 1 to 4 for another timer event setting.

Check the timer events

To check the set timer events, click **Check** button. The timer events are listed. The event with blue background color represents the timer-OFF event.



Change the event mode

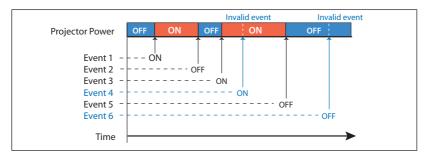
On the event list appearing by clicking **Check** button, click on the event you want to delete, disable or enable. Click **Cancel**, **Delete**, **Timer ON** or **Timer OFF** button on the popup pallet.

| Button | Operation |
|-----------|-------------------------------------|
| Cancel | Cancels the setting |
| Delete | Deletes the timer event |
| Timer OFF | Disable the timer event temporarily |
| Timer ON | Enable the timer event |



Notes on timer setting

Up to 10 timer events can be registered. Timer events always operate according to the next valid event depending on the projector's power status. In the example below, event 3 turns on the projector so next event 4 (also turning on projector) will not be effective because the projector is already turned on. Similarly, when the projector is turned off by event 5, event 6 OFF will not be effective in turning it off again. But these secondary events (event 4 and event 6) will become effective if a person turns off the projector (after event 3 and before event 4) or turns on the projector (after event 5 and before event 6).



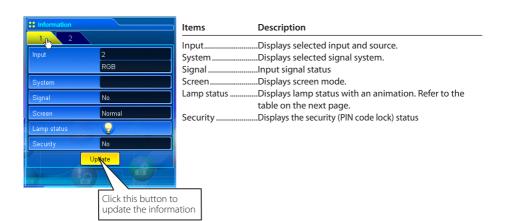
- When the timer events are set at the same time, the last event set will override the previous events. For example, if there is an event like "ON at 8:00 everyday" and then new event is set like "OFF at 8:00 everyday", only the last setting event is effective.
- When the timer event ON occurs during cooling down period, this is invalid event because the projector cannot be turned on during that cooling down period.



Projector information

This page is to display the basic information of the projector status. Click **Information** on the main menu.





Indication of the lamp status

| lcon display/background | Status | |
|-------------------------|--|--|
| White-Yellow/Blue | Lamp on (Normal) | |
| White-Yellow/Red | .amp on (Lamp is being used over a specified use time, replace lamp immediately) | |
| Gray/Blue | Lamp off (Normal) | |
| Gray/Red | Lamp off (Lamp is being used over a specified use time, replace lamp immediately) | |
| Red/Blue with X | Lamp failure (Lamp failure, check the lamp condition) | |
| Red/Red with X | Lamp failure (Lamp failure and lamp is being used over a specified use time, replace the lamp immediately) | |



| Items | Desc | ription | |
|---|-------|--|--|
| PJ time Lamp Corres. | Displ | ays the accumulated use time of the projector. | |
| Value | | Displays the use time (Corresponding value) of the lamp. | |
| Filter time | Displ | ays the use time of the filter. | |
| TimerDisplays the timer setting status. | | ays the timer setting status. | |
| | ON | Timer has been set. | |
| | OFF | No timer setting. | |



Multi-control

Controlling and setting the multi-projectors

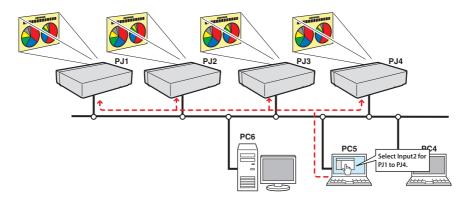
When you install multiple projectors in the network, you can control and set up them together. Click **Multi Control** on the main menu to display the control page.

Note:

To control the multiple projectors, each projector must be set the same Network PIN code.



Example of multi control



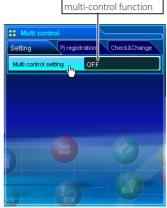
Start/stop the multi control

To start or stop controlling the multi-projectors, click Multi control setting menu and select ON or OFF.

Multi control setting

OFF.......Stops multi control function
ON......Starts multi control function. The multi control
menu will appear when ON is set. These items of
menu are linked to the main menu.





Switches on and off the



The multi controllable menus are "Power & Status", "PC adjustment", "Control", "Setting", "E-mail setting", "Timer", and "SNMP setting". Click each menu and perform setting and adjustment.

The word "MULTI CONTROL" appears on the each control page while the multi control is operating.



This shows the multi control is operating now.

Register the projector

To use the multi control function, register the IP address of the projector you intend to control. Click **PJ** registration sub menu tab and set the IP address, Memo and Multi control item, then click **Set** button.



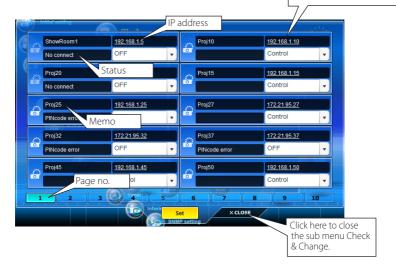
| Items | Description | |
|------------------|---|--|
| IP address | Enter IP address of the projector to control | |
| Memo | Enter projector name or installed location etc. | |
| Multi control it | tem | |
| Control | Controlling the projector | |
| Control & Image | Controlling and displaying images | |
| Image | Displaying the images | |

Confirmation of registered projector

To check the registered information, click **Check & Change** sub menu tab. The registered information of the projector is listed as the below.

* The word "none" is displayed if the "Memo" function is used.

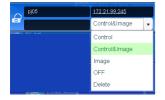
* When you click on a listed IP address, the login page for the selected projector will be displayed with a new window.



¹⁰ projectors can be registered per page and up to 100 sets can be registered for the multi-control.

Change the mode of the registered projector

To change the mode of the registered projector, select a mode with the pull-down menu button under the IP address of the target projector and then click **Set** button.



| Mode | Operation |
|-----------------|-----------------------------------|
| Control | Controlling the projector |
| Control & Image | Controlling and displaying images |
| Image | Displaying the images |
| _ | Excluding from the multi-control |
| Delete | Deleting from the multi-control |
| | 3 |

^{*} The multi control item is not available with the light mode.

Status

If some of the registered projectors are disabled by some reasons (such as disconnecting the power source, disconnecting the LAN cable, disconnecting from the network), control changes will continue to be effective for the projectors that are still active. At the same time, the deactivated projectors are excluded from the multi-control. The status of the registered projectors are indicated under the projector name. See the table below for status indications.



| Status | Description |
|----------------|---|
| (blank) | The projector is connected to the network correctly |
| No connect | The projector may not be connected to the network. Please check the connection and network |
| | configuration of this projector. |
| PIN code error | The PIN code is incorrect. The PIN code for the multi-controlled projectors must be the same. |
| | Change the PIN code of this projector to the common PIN code. (p.30, p.40) |
| File Error | Not displaying the images. Check if this projector is using the Network Capture function, or in |
| | the standby mode. |

^{*} The projector updates the status at the time when the multi-control function is executed.

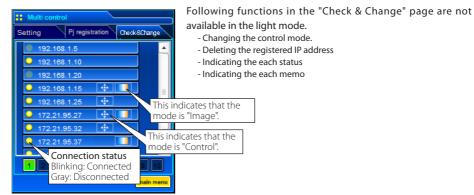
If the multi-controlled projector is in the standby mode, items of "PC adj.", "Control" and "Setting" cannot be operated.

It is recommended that a specified projector should be chosen for setting as a master when you use this multi-control function. The control for the multi-controlled projectors will become too complicated operation if this function is used for each projector.

If the registered projector is not connected to the network, it will take a while to complete the multi-control operation because of waiting for the response from each registered projector.

There are some disabled items in the multi-control function for the light mode.

Check & Change page in the light mode



(Check & Change page in the light mode)

Controlling all together

"Power & Status", "PC adjustment", "Control" and "Setting" can be controlled all together. Set "ON" the multi control setting and adjust controls of each menu. The setting value is applied to the registered projectors sequentially.

This is effective only if the multi control item of the registered projector is set to either "Control & Image" or "Control".



Setting all together

"E-mail setting", "SNMP setting" and "Timer" can be set all together. Set "ON" the multi control setting and items of each menu. The setting value is applied to the registered projectors sequentially.

This is effective only if the multi control item of the registered projector is set to either "Control & Image" or "Control".



8. Network capture functions

Network Capture is a function to display the screen image of the computer via the network.

- Real Time Capture

About Network Capture function

The Network Capture is a function to display the screen image of the computer which has a Network Capture 5 software by the projector through the network. This function has a mode as below.

- Real Time Capture (¹³⁷p.89)

A function to display the screen image of the computer by the projector through the network in real time.

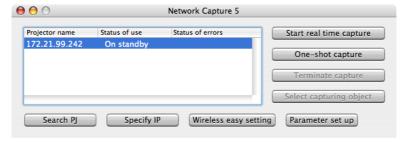
Up to 30 computers can be registered.

Start up the Network Capture 5

To start up the Network Capture 5, click "Network Capture 5" from "Macintosh HD" - "Application" - "Network Capture 5" menu. The application window will appear and search the projectors in the network and list them on the projector list.

If any projector is not listed, check followings and then search again by pressing Search PJ button.

- Is the projector turning on and connected to the network?
- Is the network setting of projector and computer configuring correct?
- Is the same capture port no. used among computer and projectors?



Commands on the menu bar

When the Network Capture 5 icon on the menu bar is clicked, the popup menu will appear. It provides according to the operating modes as shown in the table below.



Network Capture activating

Parameter set up... Window show... Version information... Shut down

Menu during Real time capturing

One-shot executing

Start real time capture One-shot capture Terminate capture

Window show.. Version information.. Shut down

Real time capture executing

One-shot capture Terminate capture

Window show... Version information... Shut down

| Items | Description |
|-------------------------------------|---|
| Start real time / Terminate capture | Starts / Terminates the real time capturing. (🖙 p.89) The screen image of the computer |
| | is projected on the screen in real time. |
| One-shot capture | Transfers the one-shot screen image of the computer. |
| Select capture object* | Sets to display the capture window selection dialog. |
| | *This menu will appear when "Select capturing object" is checked on the parameter setting. (p.88) |
| Parameter set up | Sets the communication parameter between the computer and projector. For further |
| | information, see item "Parameter set up" on the next page. |
| Window show | Displays the application window on the screen. |
| Version information | Displays the version of this software. |
| Shut down | Quits the Network Capture 5 application. |

Parameter set up

Click Parameter set up button and setup the parameters on the Parameter setup window.

| tems | Description | | |
|---|---|---|---|
| | | | |
| | Sets the capture port no. on the | |). |
| | Sets the Network PIN code on th | | |
| | Sets the time to search the proje | ector between 1 to 60 sec | onds. Default is 5 seconds. |
| ☐ Select normal | I network adapter | | |
| | Uses default setting. Default is u | | |
| ☐ Auto-power o | onThe projector turns on and proje | | - |
| | automatically when the network | capture is executed whi | le the projector is in the stand |
| , , | ject Check if you want to select an in function when you open the mu execute the capturing, the wind from the dialog window. The pro projector's screen size. | ıltiple windows on the co ow selection dialog appe | mputer's screen. When you ars. Select a window name |
| | "Medium", "Low" | | |
| Reduce image | | Capture port | 9000 |
| | image resolution is more | | |
| | than projector's panel | Pincode | •••• |
| | resolution (XGA), | | |
| Capture start up time Sets the delayed time from the capture start in second. | • | PJ search time | 5 |
| | the capture start in second. | Select normal ne | twork adapter |
| | | _ Sciece normal ne | twork adapter |
| | | Auto-power on | |
| | | | |
| | | | |
| | | Select capturing | object |
| | | Sharpness | High |

Reduce image

Capture start up time

OK

0

Cancel

<sup>Ø To check the Capture Port number, see item "Control by the web browser" (® p.91). To check the PIN code, see item

"Network PIN code setting" (№ p.30, p.40).</sup>

Specify the port number of TCP/IP. The default port setting is 9000. There are some reserved port numbers and also some applications may use their own port numbers. If one of those port numbers is used, the alert dialog window will appear and let you know that it is an invalid port number. In that case, use another port number.

The reserved port numbers are http (80), ftp (21), telnet (23), (25), (110), etc. The port no. 4352, 10000, 10001 are reserved to control the projector through the LAN port.

The "Parameter set up" can not be operated during the real time capturing.

Using the Real Time Capture

This is a function to project the screen image of the computer by the projector in real time. The captured image projected by the projector can be selected from the computer, web browser and the projector respectively.

Registering the computers

Up to 30 computers can be registered.

- 1 Access to the control page of the projector by using the web browser. From the Network menu, click Capture tab to display the setting page.
- 2 Switch to Connection Setting page by clicking the page number tab [3]. Enter the IP address of the computer to the PC number, and then click Set button. Click Set button to register the IP address for each page.



If no window is opened, no window title is displayed on the window list as shown on the left figure. Even the

new window is opened, the display of the Select capturing object window would not change. If you would like to capture the new window opened, click Update button to show the window list, select it and click OK button.





The registered computer enables to start capturing if only the Network Capture 5 is activated.

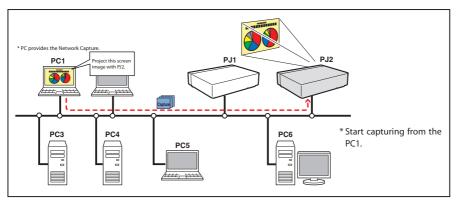
The transfer speed of the captured image using the Real Time Capture function is depending on the network environment and data volume of the image. It cannot be supported for movie pictures.

The projector can not reproduce the sound during the real time capturing.

[&]quot;Spinning wait cursor are cannot be captured.

If you start capturing with the Select capturing object on the parameter set up window checked, the Select capturing object window below(right side) appears. Select the desired window title from the window list and click OK button.

[1] Control by the computer

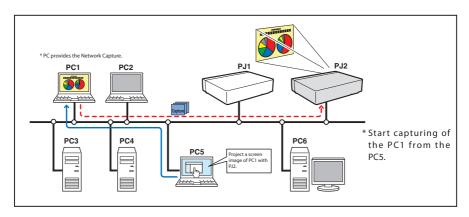


Select input mode to "Network" previously.

- 1 Start up Network Capture 5.
- 2 Select the projector(s) listed on the projector list on the application window and click Start real time capture. The application window will disappear and then the screen image of the computer will appear on the projected screen in real time.
 - * You can select multiple projectors (up to 5) on the projector list.
 - To stop capturing, click **One-shot capture** on the popup menu appearing by clicking on the Network Capture 5 icon on the menu bar. The captured image of the computer on the screen is frozen.
 - To restart capturing, click **Start real time capture** on the popup menu.
- **3** To end capturing, click **Terminate capture** on the popup menu appeared by clicking on the Network Capture 5 icon on the menu bar.

One-shot capture
Terminate Capture
Window show..
Version information..
Shut down

[2] Control by the web browser



Select "Network" as input mode previously.

- 1 Access to the control page of the projector by using the web browser. From the Network menu, click Capture tab to display the setting page.
- 2 Select the computer number from the pull-down menu button of "Connecting PC" and click Start button. The screen image of the selected computer will appear on the projected screen in real time.
 - To stop capturing, click **One-shot** button. The captured image of the computer on the screen is frozen.
 - To restart capturing, click **Start** button.
- **3** To end capturing, click **End** button.



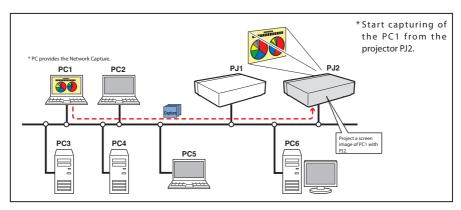
| Item | Description |
|---|--|
| Interrupt connectionSet enable or disable the real time capturing | |
| | connection from other computers during executing |
| | the real time capturing operation. |

The IP address of the connecting PC should be registered previously (Fig. p.89).

^{Ø If the error message appears, check item "Parameter set up" (☞ p.88).}

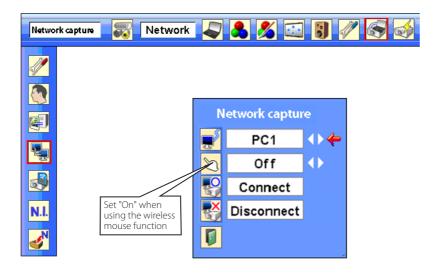
To use the capture function from the web browser or projector, the Network Capture 5 on the captured computer must be activated.

[3] Control by the projector



Select "Network" as input mode previously.

- 1 Select "Network Capture" icon from "Network" menu. Press SELECT button on the projector twice to display the network capture setting pallet.
- **2** Select PC number to connect.
- **3** Select "Connect" and then press **SELECT** button to start capturing. The screen image of the selected computer will appear on the projected screen in real time.
- **4** To end capturing, select "Disconnect" and then press **SELECT** button.

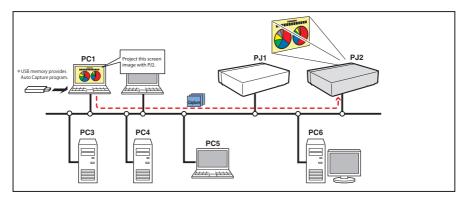


If the error message appears, check item "Parameter set up" (p.88).

The projector does not provide the function to register the IP address of the computer and to set the parameter of the capturing. They should be registered by using the web browser previously (** p.89-90).

The remote control which is provided with the projector does not have the mouse operating function.

[4] Control by the computer with USB memory



The real time capture function can run automatically on the computer without the Network Viewer & Capture 5 software installed by executing the Auto Capture program in the USB thumb drive connected to the computer.



- Copy the MacAutoCap5 software from the Network Viewer & Capture 5 CD-ROM to the commercialrelease USB thumb drive by drag and drop.
- 2. Turn on the projector and select "Wireless" from the input menu of the projector.
- 3. Select "Wireless Setting" from the projector menu and press **SELECT** button. Select "SIMPLE" with the Point ◀▶ buttons. (☞ p.39)
- 4. By connecting the USB thumb drive with the MacAutoCap5 software, the removable disk window appears. Then, double-click "MacAutoCap5" in the "US" folder from "AutoCapture".
- 5. Automatically, the activated executable file configures the Easy wireless setting, searches the projector, and starts the real time capture of the computer screen.
- 6. For the following operations, refer to Page 90.

Setting condition for automatically starting the real time capture function

Projector: Power: On, Input mode: Wireless, Wireless setting: SIMPLE

The searching result becomes only one projector.

Computer PC1: Log in by Administrative

Software: NIL

Activate MacAutoCap5 in USB thumb drive

^{Ø If the error message appears, check item "Parameter set up" (☞ p.88).}

When you start capturing with "Select capturing object" on the parameter set up window checked, the Select capturing object window (** p.89) appears.

Error information

Error messages Cause and corresponding Error when Start real time capture is executed. The other capture, viewer or Cannot be displayed as PJ is under memory viewer function is now operating. display. → Wait until the communication function is available. Cannot establish the connection with the projector when Capture transfer, Cannot connect to PJ. Start real time capture or Terminate capture is executed. → Check connection of the network cable. Cannot transfer the data to the projector when Capture transfer, Start real time capture or Terminate capture is executed. The time-out period is 10 Cannot transfer data to PJ. → Check the connection of the network cable. When the parameter is set, the reserved port number is specified. Invalid port number → Check the parameter setting (FSP p.88)

Chapter 9

9. Appendix

Use of telnet

Web browser setting

Firewall setting

Troubleshooting

Terminology

Use of telnet

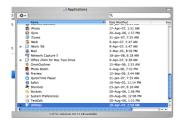
You can control the projector by using the telnet application installed on your computer. Normally, the telnet application is available on your computer.

* The telnet 10000 port is used to control the projector.

Control

(For example, in case of using the telnet application of Mac OS X v 10.4)

- 1. Select **Terminal** from **Applications** --> **Utilities**. Type as below on the displayed window.
 - > telnet [return]





2. The telnet application will start and the following window will be displayed.



- 3. Type as below to connect the projector.
 - > open_172.21.99.251_10000 [return]
 - * Use the IP address assigned to the projector



4. When communication is established correctly, the word "PASSWORD:" appears on the window. Type the login password (Network PIN code⁻²) for the projector and then press "Enter" key on the keyboard. If you do not set up the Network PIN code, just press "Enter" key.

When the word "Hello" is replied, login has been succeeded.

* The password "1234" is used for the example.

```
GO GO Terminal - teinet — 80x24

Last Logins. Tuo Feb 26 15:003:39 on thyps

Walcose to Convini

Maintenine:—ggi Steinet

teinets upon 127:21:09:251, 108000

Connected to 127:21:09:251, 108:251

Escope contracter to "6]*.

PASS0000: 1294
```

- 5. Type the commands, refer to below table, to control the projector and then press "Enter" key for termination. For example, type "C00" which is a command to turn on the projector, and press "Enter" key. Confirm the projector is turning on.
 - * Enter with ASCII 64-byte capital characters and one-byte characters.

To disconnect the communication, press "Control" key and "]" key at the same time, type "close" and then press "Enter" key on the Keyboard.

> close [return]

The table below shows the typical command lists for controlling this projector and please consult your local dealer for further information of another commands.

Command list table

| Command | Function |
|---------|------------------|
| C00 | Power on |
| C02 | Power off |
| C09 | Volume up |
| C0A | Volume down |
| COB | Audio Mute on |
| C0C | Audio Mute off |
| C1C | Menu display on |
| C1D | menu display off |
| | |

^{*1} Further instructions about the telnet application, please see the on-line guide on your computer.

^{*2}The password is a Network PIN code decided item "Network PIN code setting" (1887 p.30, 40). If the authentication of the entered password is failed 4 times continuously, the communication will be disconnected automatically. Please try again for the connection.

^{*3} If the password or any command is not entered for more than 30 seconds, the communication will be disconnected automatically. Please try again for the connection.

Web browser setting

This product is designed to enable the projector to be set up and controlled from an Internet web browser. Depending on the preference settings of the web browser, some control functions may not be available. Please make sure that the following functions are set up properly in the web browser.

JavaScript enable

There are some control items used with the JavaScript function in the setting pages. If the web browser is set not to use this JavaScript function, it may not control the projector properly. In that case, the following warning message will be displayed on the top of the page. To enable the JavaScript, please see further instructions on the next page.



Flash Player enable

The setting page of this product contains the Flash contents. To display the setting page, the Adobe Flash Player version 6 or later is required to be installed on your computer. For further product information, see the Adobe homepage. (http://www.adobe.com). Even if your computer provides the Adobe Flash Player, the setting page does not appear on the web browser, in which case, check that Flash Player Plug-In(Shockwave Flash) is installed and set up



correctly. Please see further instructions on the next page and it is depending on the web browser.

Proxy setting

In some cases, your web browser is set up to use the proxy server for the internet or intranet connection. In that case, when you install this product into the local network, you should set up the proxy setting of web browser preference correctly. Especially when connecting the projector and computer with a UTP cross cable directly, or when the network does not provide the proxy server, make sure that "not use proxy server" is set up in your web browser preference. Please see item "Examples: OS/Browsers" in the next page for further setting up procedure.

There are various ways to change your browser preferences depending on the version or applications. Please see the setting instructions on next page showing examples and also refer to on-line help of your web browser.

Examples: OS/Browsers

MAC OS X v 10.4

Safari

JavaScript and Flash Player enable setting

Select **Preferences...** from **Safari** on the web browser and then select **Security** tab and check **Enable plug-ins** (for flash player) and **Enable JavaScript**.



Proxy setting

- 1 Open Preferences... from Safari menu on the web browser Safari. The preference menu appears.
- $oldsymbol{2}$ Select $oldsymbol{\mathsf{Advanced}}$ icon and then click $oldsymbol{\mathsf{Proxies:}}$ Change $oldsymbol{\mathsf{Settings}}$
- 3 Select Proxies tab and properly set up your web browser Safari's the proxy server settings according to the local area network environment to which the projector is connected.

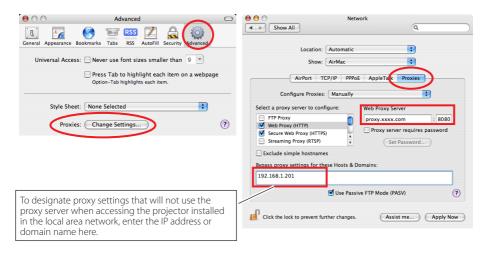
- Using proxy server

To use an external internet connection from the local area network, check the items **Web Proxy (HTTP)** and **Secure Web Proxy (HTTPS)** of **Select a proxy server to configure** window and enter the proxy server address and port correctly in **Web Proxy Server** window. For further instruction please consult your network administrator.

- Not using proxy server

Uncheck the items Web Proxy (HTTP) and Secure Web Proxy (HTTPS) of Select a proxy server to configure.

If you connect the projector to the computer directly with UTP cross cable, they must be unchecked.



Firewall setting for MAC OS X v 10.4

When you use Macintosh OS X v 10.4 and Network Capture 5, you can cancel the firewall blocking following to the steps below;

- 1 Open System Preferences from Apple menu, click Sharing icon. The Sharing setting window will appear.
- $oldsymbol{2}$ Select **Firewall** tab and click "**New...**", then a dialog box appears.
- ${oldsymbol 3}$ Specify the items as follows;

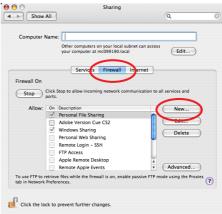
Port Name : **Other**TCP Port Number(s) : **9000**UDP Port Number(s) : **9000**

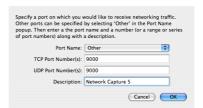
Description : You can name as you like. "Network capture 5" on the figure is just an

example.

4 Click **OK** to close setting.







Firewall setting for MAC OS X v 10.5

If you use Macintosh OS X v 10.5 and Network Capture 5, you may see the security warning dialog as below. In that case, click "Always Allow" button on the dialog to enable the function of Network Capture 5.



Even if you select "Deny", you can cancel the blocking following to the steps below;

- 1 Open System Preference from Apple menu, click Security icon. A security setting window appears.
- 2 Select Firewall tab, check Limit incoming connections to specific services and applications, and then click "+". A finder menu appears.
- 3 Select Network Capture 5 and click add button. The application name will be added in the column.



- 4 Click the options of "Allow incoming connections" or "Block incoming connections" in the column and select "Allow incoming connections".
- **5** Close setting.







Troubleshooting

If you have any trouble in setup or operation of the projector, refer to the troubleshooting items and check the relevant matters described.

■ The computer cannot connect projectors.

Wired LAN

Is the LAN cable connected to the projector properly? Is the LINK/ACT lamp of the LAN terminal lighting properly?

Not lighting: The LAN setting of the projector is set "On"?

See "Wired setting" in the projector menu.

The LAN cable is connected to the network HUB properly?

Wireless LAN

Is the WIRELESS indicator on the side panel of the projector lighting?

If there are not any problems, confirm the LAN setting again. Refer to the next item.

If the computer supports Wireless LAN, activate the Network Capture 5 and try to connect with the Easy setting button. Refer to "5. Wireless LAN configuration" → "Easy wireless settings" ([ssp.39).

If the wireless LAN card provides the firewall function itself, set up to disable its function.

■ Cannot connect with easy wireless setting function

The projector should be set up previously to complete the easy wireless setting. Depending on the wireless LAN card or computer, this easy wireless setting function may not be available.

■ Wireless LAN Connection cannot be established.

AdHoc Mode:

When selecting LAN4(factory default setting)

| Check each item in t | he Wireless Setting menu of the projector as follows: |
|----------------------|---|
| *IP Address | Is the address appropriate? Should not be the same as the other IP address. |
| *Sub net | Should be the factory default value, 255.255.0.0. |
| *Gateway | Should be the factory default value, 255.255.255.255 |
| *Network Type | Should be AdHoc mode |
| *ESSID/SSID | Should be the same as the setting of computer |
| | ->Check the setting for the computer |
| #1 - 41 \A/: | and the said front of the same and the same said |

^{*}Is the Wireless channel set as 11 both for the computer and the projector?

^{-&}gt; The factory default channel of the projector is 11.

^{*}WEP (Wired Equivalent Privacy) Should be disabled.

Infrastructure Mode:

When selecting LAN5 (factory default setting)

| Check each item below i | in the Wireless Setting menu of the projector as follows: |
|---|--|
| *IP Address | No setting is required. |
| *Sub net | Should be the same as the setting of the access point |
| *Gateway | Should be the same as the setting of the access point |
| *Network Type | Should be the Infrastructure mode |
| *ESSID/SSID | Should be same as the setting of the access point |
| Check the settings for pr | ojector Client computer |
| | No setting is required. Automatically set as DHCP. |
| *Wireless Channel | Should be 11 |
| *ESSID/SSID | |
| | Should be disabled. |
| servers communicate For detail of the sett administrator of the r | it is necessary DHCP server is under the environment enabling those through networks. Some access points may have the DHCP function ings, refer to the owner's manual for the devices or consult a systemetwork. |
| Specify IP Address directly of "Confirming the Operation" (Fig. 1) | on the optional setting. Refer to "4. Wired LAN Configurations" -3 p.28–29). |
| Connection between compo | uter and the projector via Wired LAN cannot be established. v default setting) |
| Check IP address, Sub net an configuration, contact your sy | nd Gateway of the projector and computer. For further details of the system administrator. |
| Is the segment where the pro | jector is installed different from the projector? on the optional setting. Refer to "4. Wired LAN Configurations" → ③ p.28–29). |
| Cannot start up the browse | r |
| Is the connection between PC | and the projector with Network Capture 5 established? |
| No Check setting | gs for Wireless/Wired LAN. |
| YesCheck settin | gs of the proxy setting at browser. Refer to "Web browser setting" |

Although the connection between PC and the projector is established, images are not projected on the screen.

Make sure Wireless/Wired is selected from the Input source menu of the projector.

Cannot be turned on/off with the web browser.

Make sure the settings of the projector are correct to use the projector with it. Set the item Standby mode to "Normal" from Main menu \rightarrow Setting menu. Refer to "7. Controlling the projector" \rightarrow " Power control and status check" (\mathbb{F}_{∞} p.65).

■ Wired / Wireless input cannot be changed. Network Capture 5 cannot be operated.

Restart the projector or Network Capture 5.

Execute "Wired factory default" or "Wireless factory default" menu on the projector.

Caution: After executing "Wired factory default" or "Wireless factory default" in the projector menu, all the network settings you have made will return to the factory default settings. See the items "Wired factory default" (**p.31) and "Wireless factory default" (**p.41) for the each factory default value.

Network capture

■ Why doesn't the computer screen appear on the projected screen?

- 1. Make sure that the input mode of the projector is "Wired" or "Wireless".
- 2. Check the parameter set up (FSP p.88).
 - Make sure that the numbers of the capture port is the same as the projector's port number. The default port number is 9000. If the alert message "Invalid Port No." appears, your computer may be using this port number already. In that case, use another port number.
- 3. Check the IP address of the computer is registered to the projector correctly (PSP p.89).
- 4. Make sure that your computer is not using the firewall function. The projector may not be able to use the port due to this firewall function. In that case, please turn off this function temporarily. There are also some port limitations on the network equipment such as router. Please consult your network administrator. (**p.101-102)

■ Speed of playing back images are very slow.

When connecting on AdHoc mode, check which Wireless channel you are using.

If the computer using the same channel as yours is existing closely, the networking speed may be reduced or the communication unstable. Change the channel to resolve the problem. The channels of the projector and projector Client computer must be the same. Or adjust the Quality selection in the parameter setting.

Refer to "Parameter set up" (\$\tilde{\text{P}}\$ p.88).

Terminology

DHCP server (Dynamic Host Configuration Protocol)

It is necessary to set an IP address for each computer or equivalent equipment when a network is established by TCP/IP. If there exists DHCP server on the network, it will assign IP addresses to client computers every time they request it. If there exists equipment with DHCP server functions (such as a server and a router) on the network, the DHCP server function may be automatically operating. Ask your system administrator whether the DHCP server is operating.

ESSID (Extended Service Set Identifier)

ESSID is the ID that is set to computers on Wireless LAN or access point in order to prevent each computer from being crossed. The computers or access point to which the same ESSID is set can communicate with each other. If an ESSID is different, it is impossible to communicate. ESSID distinguishes between lowercase and uppercase characters, and allows you to use English one byte characters and half-size symbols up to 32 characters.

WEP (Wired Equivalent Privacy)

WEP is a security protocol for Wireless LAN. It protects computers on Wireless LAN and access point from unauthorized access by setting a description code onto them. It is necessary to set the same decryption code for equipment.

Wi-Fi (the Standard for Wireless Fidelity)

Wi-Fi is short for Wireless fidelity and a marketing brand name for IEEE 802.11b High-Rate. Only the products that have passed an inter-operation test carried by WECA is approved as Wi-Fi. Any products approved as Wi-Fi are certified as interoperable with each other by WECA. It is recommended to use the products approved by Wi-Fi when you introduce network equipment such as local area network.

Wireless Channel

It is necessary to divide frequency spectrums into some Wireless channels for Wireless communication, and to tune to the same channel between Wireless equipment. If you use the same channel on the same floor, and there are some Wireless LANs that have a different ESSID for each, the communication speed may become slow. In that case, using different channels for each Wireless LAN is effective, which lowers a possibility of mutual interference between Wireless LANs

WECA (Wireless Ethernet Compatibility Alliance)

WECA is an organization promoting IEEE802.11b High -Range standard and assuring the compatibility of products that meet the standard.

MAC address (Media Access Control Address)

MAC address is a physical address for every network interface. The MAC address consists of 6-byte hex number. The first 3 bytes are a Vendor ID controlled and assigned by IEEE. The last 3 bytes are controlled and assigned by the manufacturers of network interface (no duplication of MAC address). Therefore, MAC address is a unique physical address in the world. Ethernet sends and receives frames on the basis of MAC address.

