

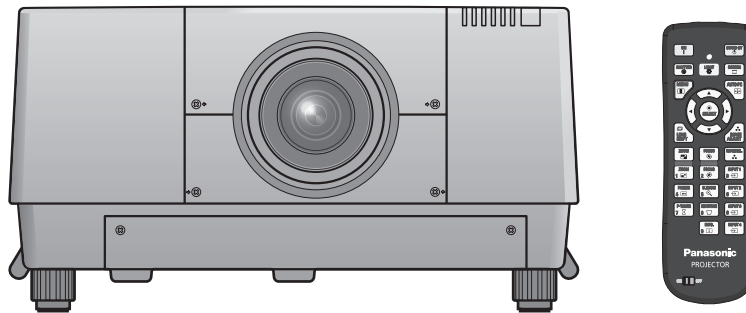
# Panasonic®

## Operating Instructions Network Operations

LCD Projector Commercial Use

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Model No. **PT-EX16KE**  
**PT-EX16KU**



- This manual explains the network operation of the projector.  
For information other than the network operation, such as the usage, inspection and replacement of parts, see "Operating Instructions - Projector Operations".

ENGLISH

SO-K2TA

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**Notes**

The illustrations and screenshots in this manual may be different from those on your computer.  
Expressions used in this document  
Pages to reference within this document are indicated as (See page ○○), and pages to reference in the supplemental “Operating Instructions - Projector Operations” are indicated as (See page ○○ of the Projector Operations).

# Request Regarding Security

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When using this product, security breaches of the type described below are conceivable.

- Leakage of your private information via this product
- Illegal operation of this product by a malicious third-party
- Harm to or cessation of operation of this product by a malicious third-party

Be sure to implement sufficient security measures.

- Set passwords, and limit the users that are permitted login access.
- Make sure the password is as hard to guess as possible.
- Change the password periodically.
- Panasonic Corporation and its affiliated companies never directly ask customers for their password. Do not give out your password even if directly asked by a third-party representing themselves as Panasonic Corporation.
- Always use on a network that has safety protection such as a firewall implemented.

## What you can do

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### <WEB control> (See page 11)

The following operations are possible when using WebBrowser.

- Setting and adjusting the projector
- Displaying the projector status
- Setting for message transmission

### <PJLink> (See page 23)

Compatible with PJLink Class 1. The following operations can be performed from a computer when PJLink protocol is used.

- Setting the projector
- Querying the projector status

### <Command control>

**(Refer to “Serial terminal” in “Technical Information” of the Projector Operation manual)**

You can control the projector from a computer, using the control commands of the serial terminals.

# Check your computer

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## Necessary environment for computers to be connected

- First, check your computer to see whether or not it has a wired LAN \* function.  
\*“Glossary” (See page 26)
- Before connecting the projector to the computer, be sure to check the following settings.

### ■ Wired LAN

#### Check 1 For LAN cable

- Is the cable properly connected?
- Use LAN cable that is compatible with category 5 or above.

#### Check 2 Wired LAN settings

##### <Computer with a built-in wired LAN function>

- Is your wired LAN switched on?

##### <Computer without a built-in wired LAN function>

- Is your wired LAN adapter properly recognized?
- Is your wired LAN adapter switched on?
- Install the wired LAN adapter driver beforehand.

For details on how to install the driver, refer to the instructions accompanying the wired LAN adapter.

#### Check 3 For WebBrowser

- WebBrowser is necessary to use WEB control.
- Compatible OS : Windows XP/Windows Vista/Windows 7, Mac OS X v10.4/v10.5/v10.6
- Compatible WebBrowser : Internet Explorer 7.0/8.0/9.0, Safari 4.0/5.0 (Mac OS)

#### Notes

Do not touch the LAN terminal or the metal part of the LAN cable, the static electricity may discharge from our hand (body) causing a malfunction.

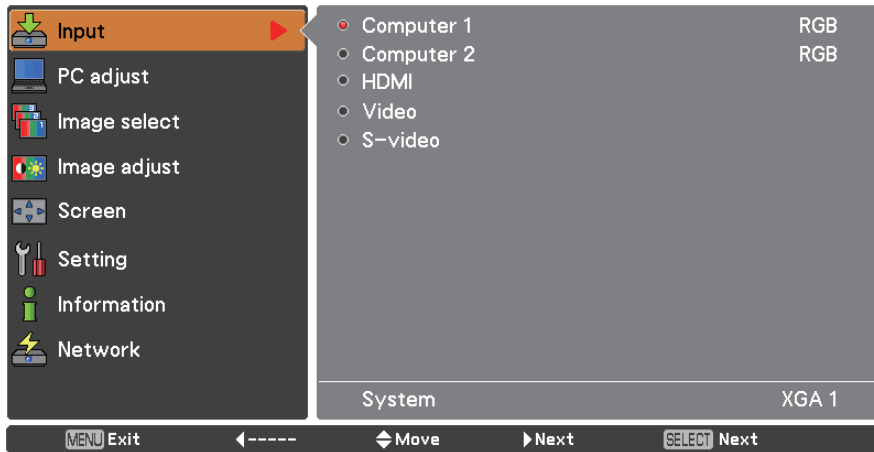
# NETWORK menu

To connect the projector and the computer by changing the setting at the time of purchase, change the setting by displaying the menu with the following procedure.

## Displaying the NETWORK menu

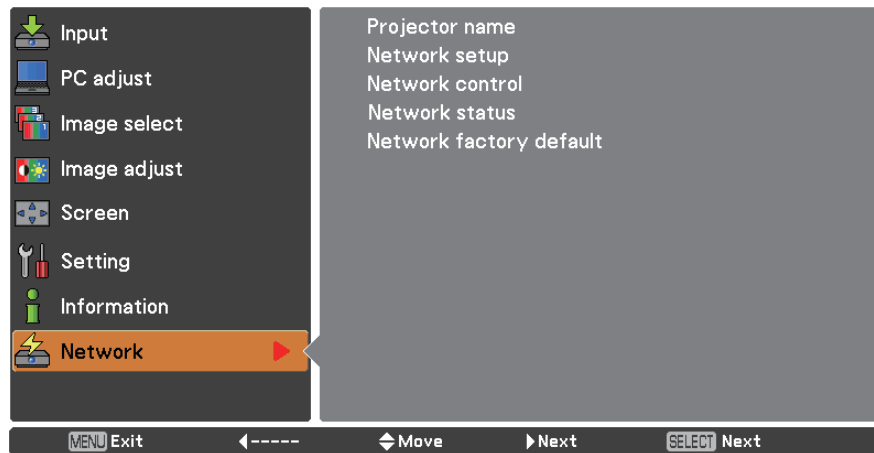
### 1 Press the <MENU> button on remote control.

The main menu appears.



### 2 Select [NETWORK] with the ▲▼ buttons.

The network menu appears.



### 3 Press the <SELECT> button.

You can select the sub-menu item.

#### Note

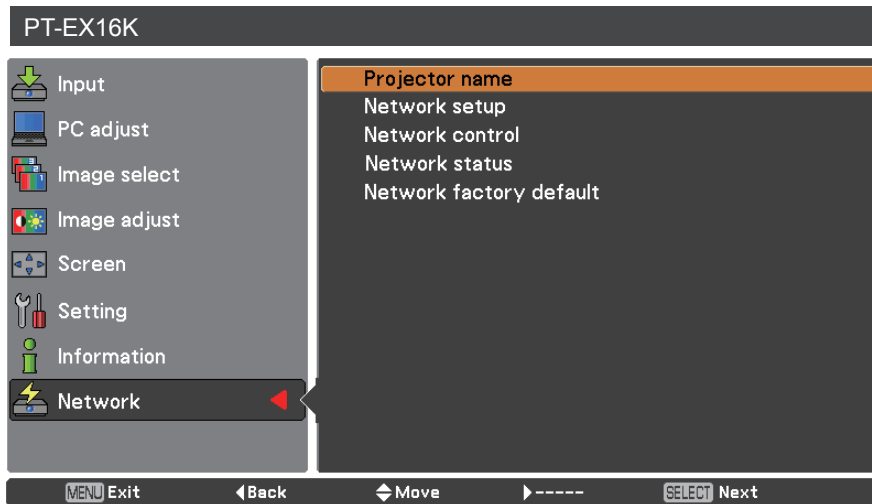
Unavailable items on the menu screen are grayed out and cannot be selected.

# NETWORK menu (continued)

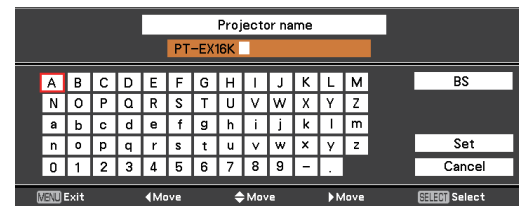
## Projector name

You can change the projector name to be displayed on the network.

- 1 Press **▲▼** to select [Projector name], and press **<SELECT>** button.



- 2 Select characters with the **▲▼◀▶** buttons and press the **<SELECT>** button to enter the projector name.



- 3 Select [SET] with the **▲▼◀▶** buttons and press the **<SELECT>** button.

Select [CANCEL] to undo the changes and then press the **<SELECT>** button.

- 4 Select [YES] or [No] with the **▲▼◀▶** buttons and press the **<SELECT>** button.

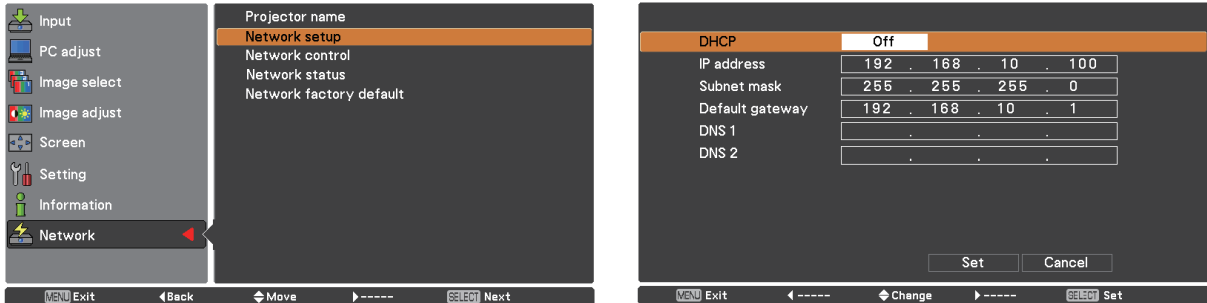
# NETWORK menu (continued)

## Network setup

You can make detailed wired LAN settings.

### 1 Press ▲▼ to select [Network setup], and press <SELECT> button.

The detailed [Network setup] screen will be displayed.



### 2 Press ▲▼ to select an item, and change the setting according to the instructions.

<b>DHCP *</b> (DHCP client function)	On: If a DHCP server exists in the network to which the projector is connected, the IP address will automatically be acquired. Off: If a DHCP server does not exist in the network to which the projector is connected, additionally set [IP address*], [Subnet mask *] and [Default gateway *].
<b>IP address *</b> (Display of IP address and setting)	Enter the IP address if DHCP server is not used.
<b>Subnet mask*</b> (Displaying and setting the subnet mask)	If not using a DHCP server, enter the subnet mask.
<b>Default gateway *</b> (Display of gateway address and setting)	Enter the gateway address if DHCP server is not used.
<b>DNS</b>	Sets IP address of the DNS server.

\* "Glossary" (See page 26)

### 3 Press ▲▼◀▶ to select [Set], and press <SELECT> button.

Save the current network settings.

#### Notes

Before using the DHCP server, make sure the DHCP server is already functioning.  
For details of IP address, subnet mask, gateway and DNS, ask the network administrator.

#### Default wired LAN settings

The following settings are set before the projector leaves the factory.

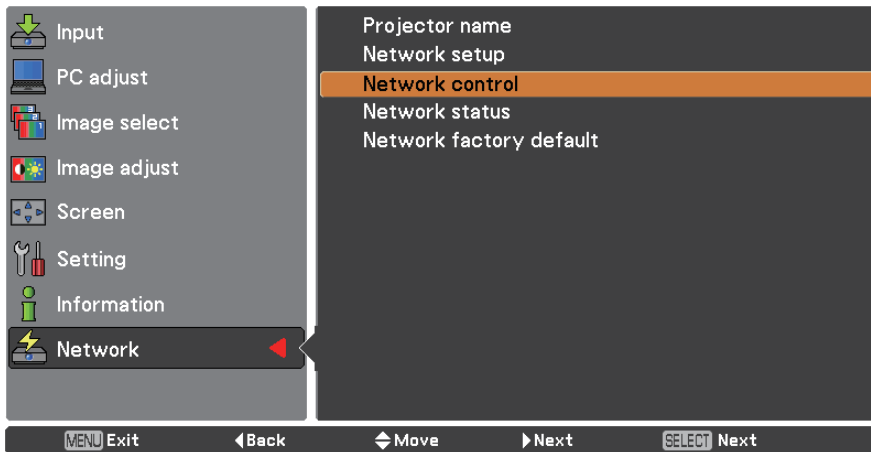
DHCP	Off
IP address	192.168.10.100
Subnet mask	255.255.255.0
Default gateway	192.168.10.1
DNS 1	
DNS 2	

# NETWORK menu (continued)

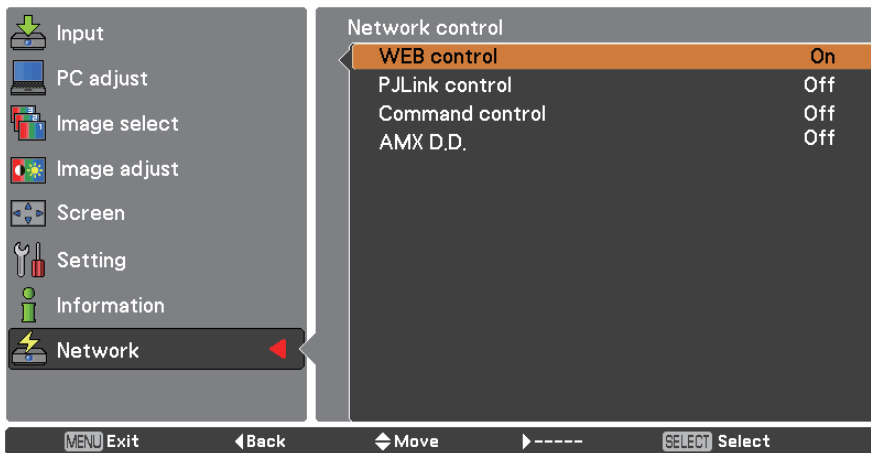
## Network control

Set when you want to control the projector from a computer connected to the network.

**1** Press **▲▼** to select **[Network control]**.



**2** Press **<SELECT>** button or the **▶** button to access the submenu. Select **[WEB control]**, **[PJLink control]**, **[Command control]**, **[AMX D.D.]** items with the **▲▼** buttons.



### Notes

[AMX D. D.] function allows the projector to be detected by AMX Device Discovery. For more details about AMX D.D., visit <http://www.amx.com/>.

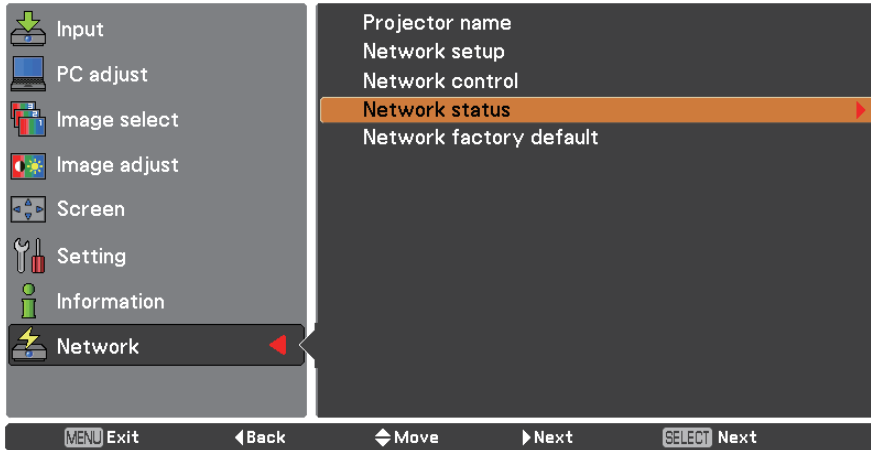


# NETWORK menu (continued)

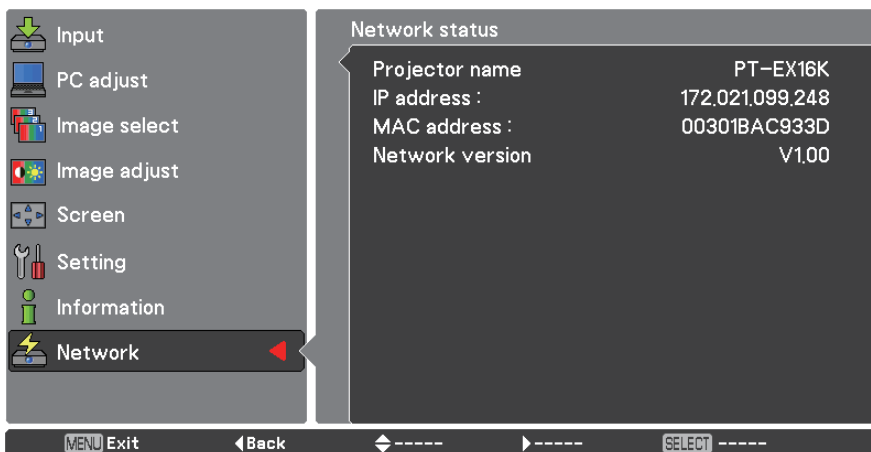
## Network status

This function shows the LAN setting environment of the currently selected projector.

**1** Press ▲▼ to select [Network status].



**2** Press <SELECT> button or the ► button to show the information of the current projector status.

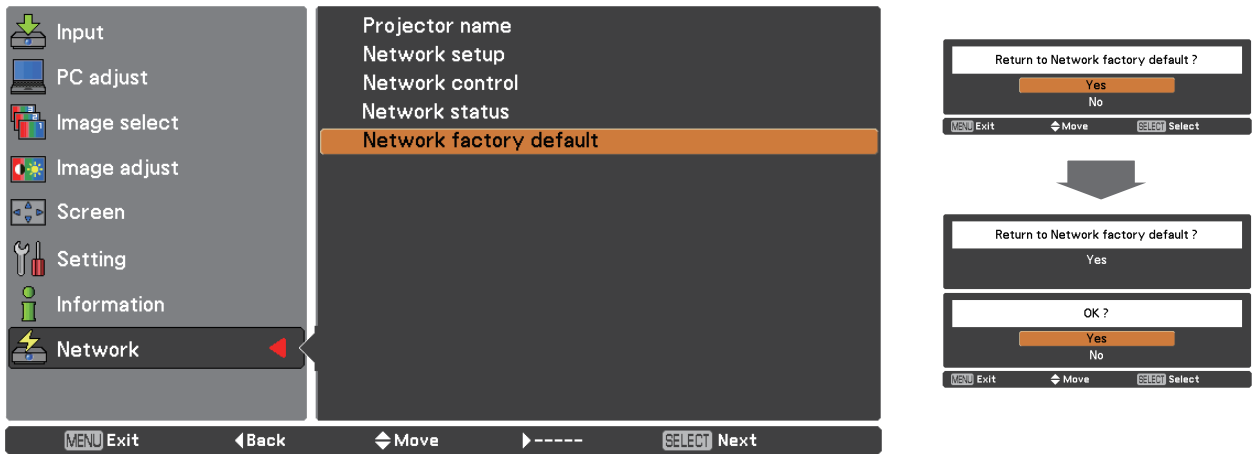


# NETWORK menu (continued)

## Network factory default

You can reset the network setting to the factory default of the projector.

- 1 Press ▲▼ to select [Network factory default], and press <SELECT> button.
- 2 A confirmation box appears and select [Yes] and then press <SELECT> button. Another confirmation box appears and select [Yes] and then press <SELECT> button.



# Connecting with Wired LAN

## Computer operation

Connection can be made with wired LAN. However, confirm to your system administrator on network settings before changing any settings.

- 1 Turn on the computer.
- 2 Make the network setting according to your system administrator.  
If the projector settings are the default settings, the computer can be used with the following network settings.

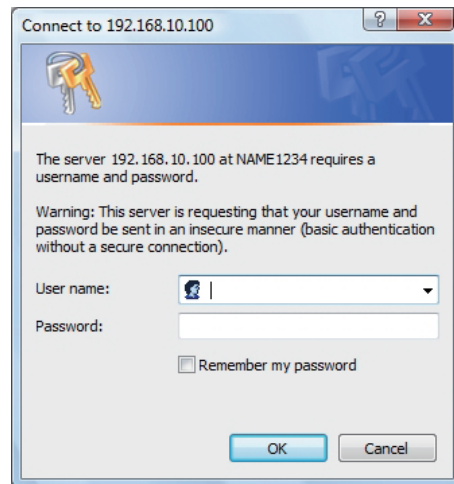
DHCP	Off
IP address	192.168.10.101
Subnet mask	255.255.255.0
Default gateway	192.168.10.1
DNS 1	
DNS 2	

# Using Web Browser

## Accessing from the Web browser

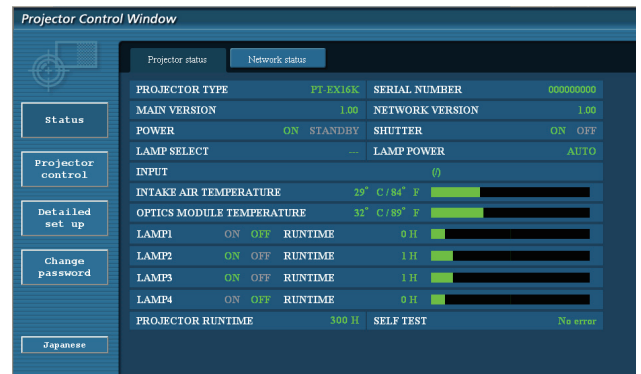
- 1 Activate the Web browser in the personal computer.
- 2 Enter the IP address set by the projector into the URL input field of the Web browser.
- 3 Enter your “User name” and “Password”.

The factory default settings are user1 (user privileges) or admin1 (administrator privileges) for the use name and panasonic (lowercase letters) for the password.



- 4 Click [OK] to display the Projector status page.

“Projector status” page is displayed.

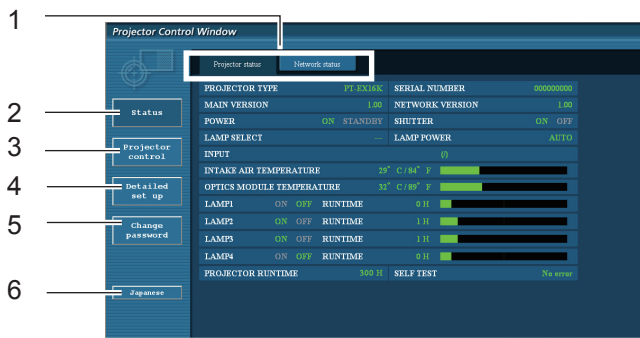


### Notes

- Avoid activating two or more Web browser simultaneously to work out setting or control actions.
- Change the password first of all.
- Administrator privileges enable the use of all functions. User privileges enable the use of only “Projector status”, “Network status”, “Basic control”, “Advanced control”, and “Change password”.
- If you want to control the projector using a Web browser, set [Web control] under [Network control] in the network menu to [On].

# Using Web Browser (continued)

## ■ Description of each item



- 1 Page selection tabs  
Click these to switch pages.
- 2 Monitor information button  
Click this item, and the status of the projector is displayed.
- 3 Projector control button  
Click this item to display the projector control page.
- 4 Detailed set up button  
Click this item to display the advanced settings page.
- 5 Change password button  
Click this button to display the password change page.
- 6 Language switch button  
Click this button to switch language between English and Japanese.

## Projector status page

Click [Status], then [Projector status] to display the Status information page.  
This page displays the projector statuses established for the items shown below.



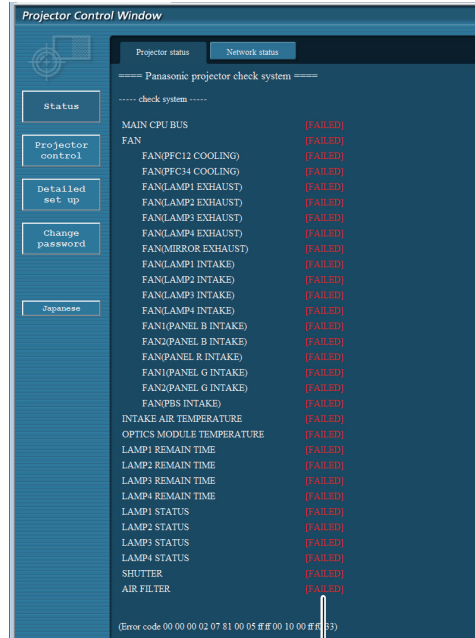
- 1 Displays the type of projector.
- 2 Displays the firmware version of the projector main unit.
- 3 Displays the power source status.
- 4 Displays the selection of the lamps.
- 5 Displays the serial number of the projector.
- 6 Displays the firmware version of the network.
- 7 Displays the shutter status.
- 8 Displays the lamp power status.
- 9 Displays the status of input switch.
- 10 Displays the intake temperature status of the projector.
- 11 Displays the optics module temperature status of the projector.
- 12 Displays the usage time of each lamp.
- 13 Displays the self diagnostics information.  
(See page 13)
- 14 Displays the operating time of the projector.

# Using Web Browser (continued)

## Error information page

If [Error (Detail)] is displayed in the self-diagnosis information display column on the [Projector status] screen, click the part to display the details of the error.

- Depending on the nature of the error, the projector may be placed in the standby mode for its own protection.



OK: Normal operation  
 FAILED: Occurrence of trouble

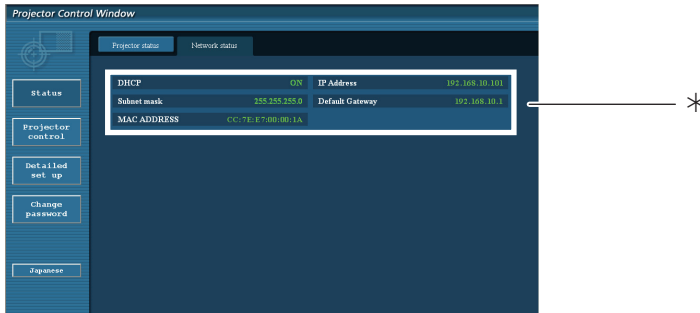
### ■ When [FAILED] has appeared for an item

Parameter	Description
MAIN CPU BUS	Trouble has occurred in the microcomputer circuitry. Consult your dealer.
FAN	Trouble has occurred in the fan or its drive circuit. Consult your dealer.
INTAKE AIR TEMPERATURE	Intake air temperature is high. It could be because it is used in an environment of high temperature such as close to a heating device, etc., the air intake is blocked, or the air filter is clogged.
OPTICS MODULE TEMPERATURE	Optics module temperature is high.
LAMP1-4 REMAIN TIME	The lamp runtime has exceeded the prescribed cumulative time, and it is now time to replace the lamp.
LAMP1-4 STATUS	The lamp has failed to light. Wait a short while for the lamp to cool off, and then turn on the power.
SHUTTER	Trouble has occurred in the shutter.
AIR FILTER	Too much dust is on the air filter. Check the air filter.

# Using Web Browser (continued)

## Network status page

Displays the current configuration information of the network.



\*Displays the configuration details of wired LAN.

## Basic control page

To move from another page, click [Projector control], then [Basic control].



1 Power On/Off control

2 Use these to select the input signals

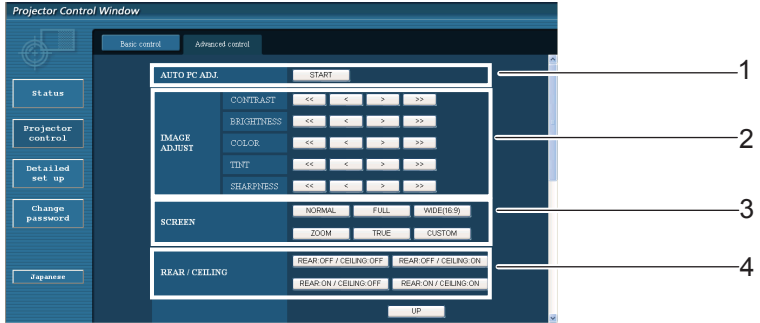
3 Switches image mode

4 Turn on or off the Shutter function

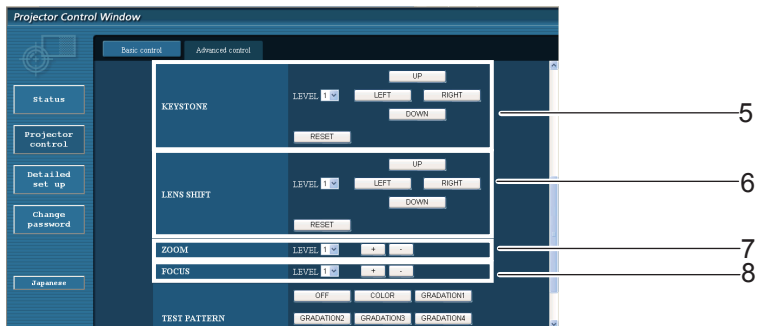
# Using Web Browser (continued)

## Detail control page

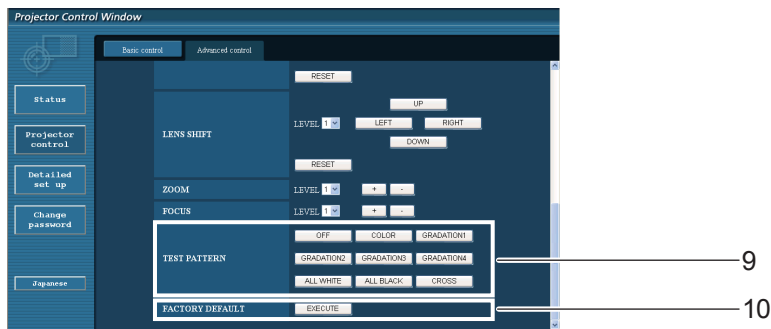
Click [Projector control], then [Advanced control] to display the Detail control page.



- 1 Execute Auto setup function
- 2 Operations on Image adjust
- 3 Operations on Screen mode
- 4 Operations on Rear/Ceiling



- 5 Operations on Keystone function
- 6 Operations on Lens shift
- 7 Operations on Zoom
- 8 Operations on Focus

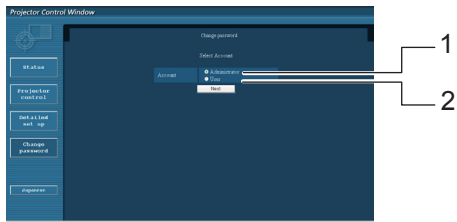


- 9 Operations on Test pattern
- 10 Return to factory default setting

# Using Web Browser (continued)

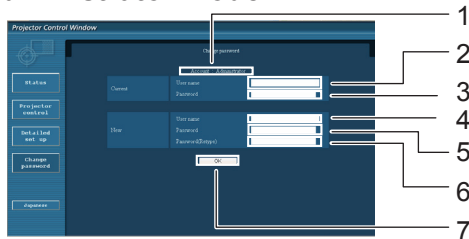
## Change Password page

Click [Change password].



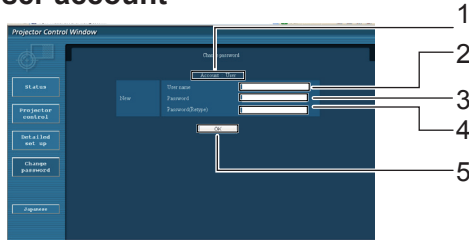
- 1 Administrator
- 2 User

### Administrator mode



- 1 Account
- 2 Current user name input field
- 3 Current password input field
- 4 New user name input field
- 5 New password input field
- 6 New password input field (re-enter for confirmation)
- 7 Button for executing password change

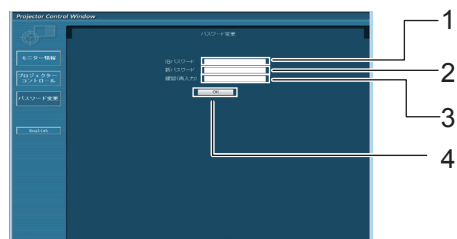
### User account



- 1 Account
- 2 New user name input field
- 3 New password input field
- 4 New password input field (re-enter for confirmation)
- 5 Button for executing password change

### User mode

A user can change password only.



- 1 Current password input field
- 2 New password input field
- 3 New password input field (re-enter for confirmation)
- 4 Button for executing password change

**Note**

- When changing the administrator account, both “Current user name” and “Current password” are required.
- No account is not available .
- Administrator account and user account should be differed.



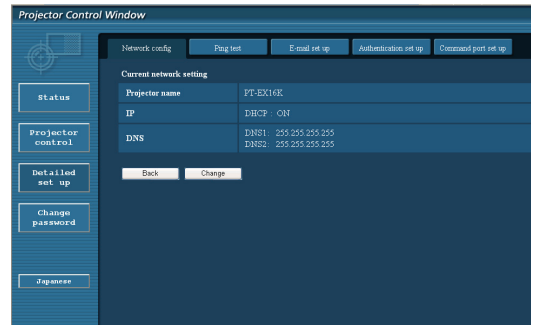
# Using Web Browser (continued)

## Network config page

You can make detail network settings on projector, when connecting without the administrator authority or when connecting through an access point (infrastructure mode).

### LAN settings

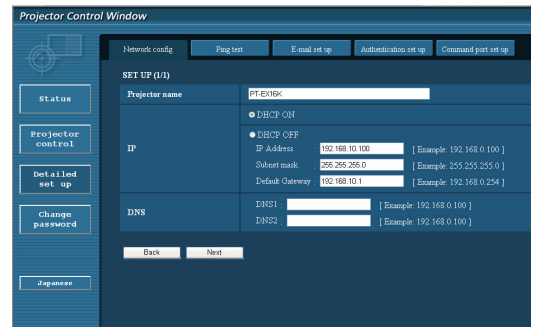
- 1 Click [Detailed set up] in the menu.
- 2 Click [Change] to change the LAN settings. To return to the previous window, click [Back].



- 3 Complete the detailed settings and click [Next].

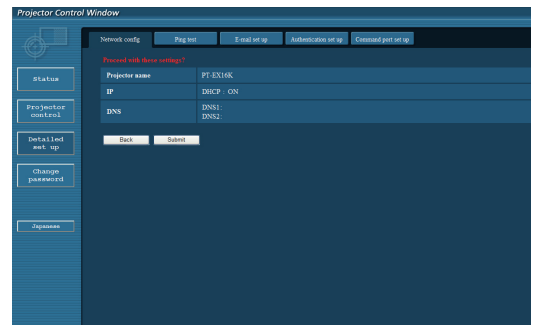
When [Next] is clicked, the next page appears, enabling you to complete the detailed settings as desired.

Settings performed here are the same as the settings performed with the [Network] menu of the projector.



- 4 Click [Submit].

The settings will be registered.



### Notes

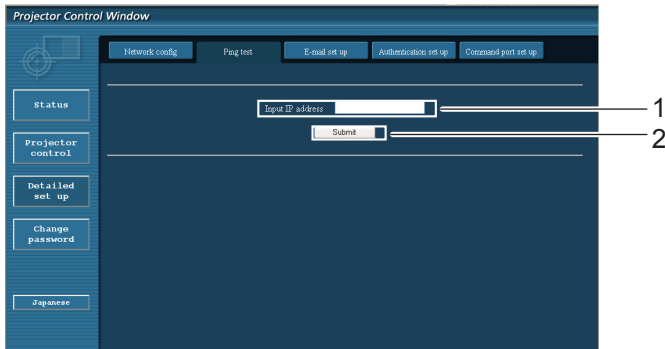
Changing the setting of LAN while connected with LAN might disconnect the connection.

## Using Web Browser (continued)

### Ping test page

This page makes it possible to check whether the network is connected to the e-mail server, POP server, DNS server, etc.

Click [Detailed set up], then [Ping test] to display the Ping test page.



Display which appears when the connection was successful.

```
PING 198.245.80.20 (198.245.80.20): 56 data bytes
64 bytes from 198.245.80.20: seq=0 ttl=64 time=0.837 ms
64 bytes from 198.245.80.20: seq=1 ttl=64 time=0.483 ms
64 bytes from 198.245.80.20: seq=2 ttl=64 time=0.479 ms
64 bytes from 198.245.80.20: seq=3 ttl=64 time=0.485 ms

--- 198.245.80.20 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 0.479/0.571/0.837 ms
```

Display which appears when the connection failed.

```
PING 198.245.80.15 (198.245.80.15): 56 data bytes

--- 198.245.80.15 ping statistics ---
4 packets transmitted, 0 packets received, 100% packet loss
```

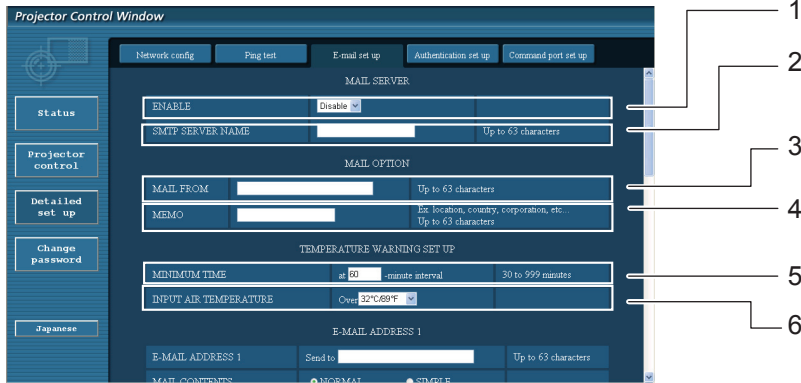
- 1 Enter the IP address of the server to be tested.
- 2 Button for conducting the test.

# Using Web Browser (continued)

## E-mail setup page

With this projector, if a problem occurs or if the lamp usage time reaches a set value, an e-mail message can be sent to one or more preset e-mail addresses (maximum two addresses).

Click [Detailed set up], then [E-mail set up] to display the E-mail setup page.



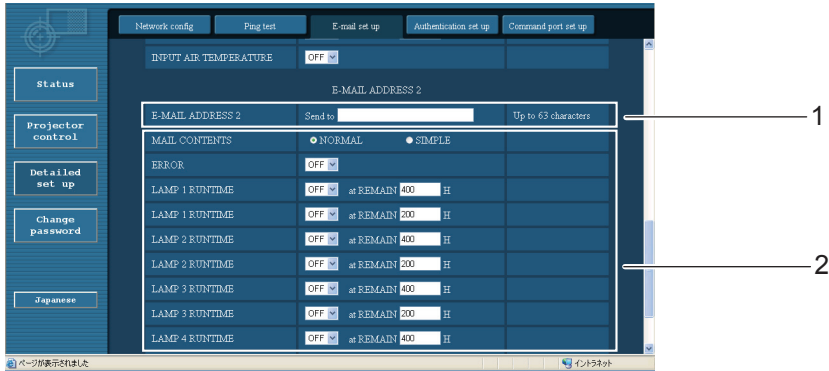
- 1 Select ENABLE to use the e-mail function.
- 2 Enter the IP address or server name of the e-mail server (SMTP). The DNS server must be set if the server name is entered.
- 3 Enter the e-mail address of the projector. (maximum 63 characters)
- 4 The user can enter the location of, for example, the installed projector so that the recipient may easily identify the originator of the e-mail. (maximum 63 characters)
- 5 The user can modify the minimum time interval of temperature warning mail. The default value is 60 minutes. In this case, the user cannot send another mail for 60 minutes after sending previous temperature warning mail even the set warning temperature is reached again.
- 6 Select the temperature of the intake sensor at which to send a warning message.



- 1 Enter the E-mail Address1 of your desired recipient.
- 2 Select the conditions for sending e-mail.
  - MAIL CONTENTS: Select [NORMAL] or [SIMPLE].
  - ERROR: An error is detected by self-diagnosis.
  - LAMP1-4 RUNTIME: Remaining lamp service time has reached the value set in the field.
  - INTAKE AIR TEMPERATURE: Intake air temperature has reached the value set in the field.

# Using Web Browser (continued)

## E-mail setup page (continued)



- 1 Enter the E-mail Address2 of your desired recipient.
- 2 Select the conditions for sending e-mail.  
 MAIL CONTENTS: Select [NORMAL] or [SIMPLE].  
 ERROR: An error is detected by self-diagnosis.  
 LAMP 1-4 RUNTIME: Remaining lamp service time has reached the value set in the field.  
 INTAKE AIR TEMPERATURE: Intake air temperature has reached the value set in the field.

## Authentication set up page

The POP/SMTP server is set on this page when POP/SMTP authentication is required for mail transmissions. Click [Detailed set up], then [Authentication set up] to display the Authentication server setup page.



- 1 Select the authentication method specified by your Internet service provider.
- 2 Set this if SMTP authentication has been selected.
- 3 POP server name field  
Available input characters:  
Alphanumeric characters (A - Z, a - z, 0 - 9), hyphen (-), period (.)
- 4 POP/SMTP server user name field
- 5 POP/SMTP server password field
- 6 Enter the port number for the SMTP server (normally "25").
- 7 Enter the port number for the POP server (normally "110").
- 8 Button to update settings

# Using Web Browser (continued)

## Contents of mail sent

- Mail with the contents shown below is sent when the e-mail settings have been established.

```
=== Panasonic projector report(CONFIGURE) ===
Projector Type:PT-EX16K
Serial No:123456789
----- E-mail setup data -----
TEMPERATURE WARNING SETUP
MINIMUM TIME          at [ 30] minutes interval
INTAKE AIR TEMPERATURE Over [ 32 degC / 89 degF ] |

ERROR                 [ OFF ]
LAMP1 RUNTIME         [ OFF ] at REMAIN [ 0] H
LAMP1 RUNTIME         [ OFF ] at REMAIN [ 0] H
LAMP2 RUNTIME         [ OFF ] at REMAIN [ 0] H
LAMP2 RUNTIME         [ OFF ] at REMAIN [ 0] H
LAMP3 RUNTIME         [ OFF ] at REMAIN [ 0] H
LAMP3 RUNTIME         [ OFF ] at REMAIN [ 0] H
LAMP4 RUNTIME         [ OFF ] at REMAIN [ 0] H
LAMP4 RUNTIME         [ OFF ] at REMAIN [ 0] H
INTAKE AIR TEMPERATURE [ OFF ]

----- check system -----
MAIN CPU BUS          [ FAILED ]
FAN                   [ FAILED ]
  FAN (PFC12 COOLING) [ FAILED ]
  FAN (PFC34 COOLING) [ FAILED ]
  FAN (LAMP1 EXHAUST) [ FAILED ]
  FAN (LAMP2 EXHAUST) [ FAILED ]
  FAN (LAMP3 EXHAUST) [ FAILED ]
  FAN (LAMP4 EXHAUST) [ FAILED ]
  FAN (MIRROR EXHAUST) [ FAILED ]
  FAN (LAMP1 INTAKE)  [ FAILED ]
  FAN (LAMP2 INTAKE)  [ FAILED ]
  FAN (LAMP3 INTAKE)  [ FAILED ]
  FAN (LAMP4 INTAKE)  [ FAILED ]
  FAN1(PANELB INTAKE) [ FAILED ]
  FAN2(PANELB INTAKE) [ FAILED ]
  FAN (PANELR INTAKE) [ FAILED ]
  FAN1(PANELG INTAKE) [ FAILED ]
  FAN2(PANELG INTAKE) [ FAILED ]
  FAN (PBS INTAKE)    [ FAILED ]
INTAKE AIR TEMPERATURE [ FAILED ]
OPTICS MODULE TEMPERATURE [ FAILED ]
LAMP1 REMAIN TIME     [ FAILED ]
LAMP2 REMAIN TIME     [ FAILED ]
LAMP3 REMAIN TIME     [ FAILED ]
LAMP4 REMAIN TIME     [ FAILED ]
LAMP1 STATUS          [ FAILED ]
LAMP2 STATUS          [ FAILED ]
LAMP3 STATUS          [ FAILED ]
LAMP4 STATUS          [ FAILED ]
SHUTTER               [ FAILED ]
AIR FILTER            [ FAILED ]

(Error code 00 00 00 02 07 81 00 05 ff ff 00 10 00 ff f0 33)

Intake air temperature  :[ 10 degC / 50 degF ]
Optics module temperature :[ 30 degC / 86 degF ]

PROJECTOR RUNTIME      400 H

LAMP1 ECO              300 H
LAMP1 NORMAL          200 H
LAMP2 ECO              300 H
LAMP2 NORMAL          200 H
LAMP3 ECO              300 H
LAMP3 NORMAL          200 H
LAMP4 ECO              300 H
LAMP4 NORMAL          200 H
LAMP1 REMAIN          1600 H
LAMP2 REMAIN          1600 H
LAMP3 REMAIN          1600 H
LAMP4 REMAIN          1600 H

----- Current status -----
MAIN VERSION          1.00
NETWORK VERSION       1.00
LAMP STATUS           LAMP1=ON
                     LAMP2=OFF
                     LAMP3=ON
                     LAMP4=OFF
INPUT                 DVI-D
SIGNAL NAME           XGA60
SIGNAL FREQUENCY      0.00kHz / 0.00Hz

----- Wired Network configuration -----
DHCP Client OFF
IP address 192.168.11.65
MAC address cc:7e:e7:00:00:00

----- Memo -----
```

# Using Web Browser (continued)

- Mail with the contents shown below is sent when an error has occurred.

```
=== Panasonic projector report(ERROR) ===
Projector Type:PT-EX16K
Serial No:000000000

----- check system -----
MAIN CPU BUS           [ FAILED ]
FAN                    [ OK ]
INTAKE AIR TEMPERATURE [ OK ]
OPTICS MODULE TEMPERATURE [ OK ]
LAMP1 REMAIN TIME     [ OK ]
LAMP2 REMAIN TIME     [ OK ]
LAMP3 REMAIN TIME     [ OK ]
LAMP4 REMAIN TIME     [ OK ]
LAMP1 STATUS          [ OK ]
LAMP2 STATUS          [ OK ]
LAMP3 STATUS          [ OK ]
LAMP4 STATUS          [ OK ]
SHUTTER               [ OK ]
AIR FILTER             [ OK ]

(Error code 00 00 00 00 00 01 00 00 00 00 00 00 00 00 00)

Intake air temperature  :[ 29 degC / 84 degF ]
Optics module temperature :[ 33 degC / 91 degF ]

PROJECTOR RUNTIME      400 H

LAMP1 ECO              300 H
LAMP1 NORMAL           200 H
LAMP2 ECO              300 H
LAMP2 NORMAL           200 H
LAMP3 ECO              300 H
LAMP3 NORMAL           200 H
LAMP4 ECO              300 H
LAMP4 NORMAL           200 H
LAMP1 REMAIN           1600 H
LAMP2 REMAIN           1600 H
LAMP3 REMAIN           1600 H
LAMP4 REMAIN           1600 H

----- Current status -----
MAIN VERSION          1.00
NETWORK VERSION       1.00
LAMP STATUS
LAMP1=OFF
LAMP2=OFF
LAMP3=OFF
LAMP4=OFF

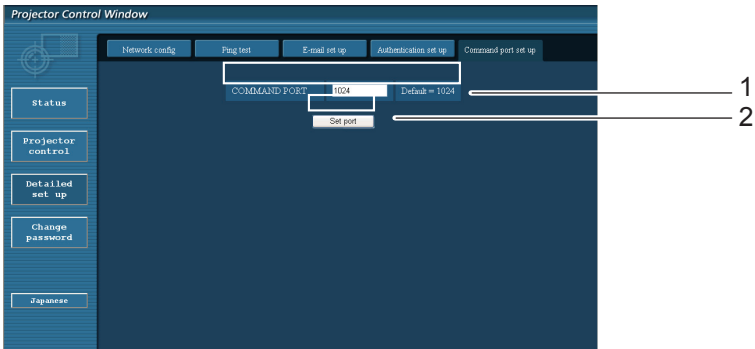
INPUT                 1 HDMI
SIGNAL NAME           ---
SIGNAL FREQUENCY      0.0kHz / 0.0Hz

----- Wired Network configuration -----
DHCP Client           OFF
IP address            192.168.11.145
MAC address           08:00:7b:65:00:11

----- Memo -----
```

## Command port set up page

Set the port number to be used with command control.  
Click [Detailed set up] → [Command port set up].



- 1 Input the port number to be used with command control
- 2 Setting update button

# PJLink protocol

The network function of the projector supports PJLink class 1, and the PJLink protocol can be used to perform projector setting and projector status query operations from a computer.

## Control commands

The following table lists the PJLink protocol commands that can be used to control the projector.

Command	Control details	Notes
POWR	Power supply control	Parameters 0 = Standby 1 = Power ON
POWR ?	Power supply status query	Parameters 0 = Standby      1 = Power ON 2 = Cool-down in progress
INPT	Input selection	Parameters
INPT ?	Input selection query	11:RGB 1    12:RGB 2    13:RGB 3    21:VIDEO 1    22:VIDEO 2 25: VIDEO 5    31:DIGITAL 1    32: DIGITAL 2    33: DIGITAL 3 46:AUX1    47:AUX2    48:AUX3    49:AUX4
AVMT	AV MUTE control	Parameters
AVMT ?	AV MUTE status query	30 = AV MUTE mode off 31 = AV MUTE mode on
ERST ?	Error status query	Parameters 1st byte : Indicates fan errors, range 0 – 2 2nd byte : Indicates lamp errors, range 0 – 2 3rd byte : Indicates temperature errors, range 0 – 2 4th byte : Fixed at 0 5th byte : Indicates filter errors, range 0 – 2 6th byte : Indicates other errors, range 0 – 2  Definitions for each value from 0 to 2 are as follows. 0 = No error known    1 = Warning    2 = Error
LAMP ?	Lamp status query	Parameters 1st digits (1 – 5 digits) : Lamp cumulative operating time 2nd digit : 0 = Lamp off, 1 = Lamp on
INST ?	Input selection list query	The following are returned as parameters. “ 11 12 13 21 22 25 31 32 33 46 47 48 49”
NAME ?	Projector name query	The name set for [NAME CHANGE] in [NETWORK] is returned.
INF1 ?	Manufacturer name query	“Panasonic” is returned.
INF2 ?	Model name query	Answer the model name with EX16K
INF0 ?	Other information query	Information such as version number is returned.
CLSS ?	Class information query	“1” is returned.

## PJLink security authorization

When using PJLink with security authorization, either of the password set for administrator privileges and the password set for user privileges with Web browser control can be used as the password for PJLink (See page 16). When using PJLink without security authorization, set use without the password for administrator privileges and the password for user privileges of Web browser control.

For specifications regarding PJLink, refer to the Japan Business Machine and Information System Industries Association website.

URL <http://pjlink.jbmia.or.jp/>

# Control commands via LAN

When WEB Control administrator rights password is set (Protect mode)

## Connection method

- 1) Obtain the IP address and port number (Initial set value = 1024) of the projector and make a request for connection to the projector.

Acquire the IP address from the menu screen of the projector, and the port number from the WEB control page.

**IP address :** Obtain from MAIN MENU → [Network] → [Network status]

**Port No. :** Acquire from the WEB control “Detailed set up” → “Command port setting” page

- 2) There is a response from the projector.

Response data

Data section	Blank	Mode	Blank	Random number section	Termination symbol
“NTCONTROL” (ASCII string)	‘ ’ 0x20	‘1’ 0x31	‘ ’ 0x20	“ZZZZZZZZ” (ASCII code hexadecimal number)	(CR) 0x0d
9 bytes	1 byte	1 byte	1 byte	8 bytes	1 byte

Mode : 1 = Protect mode

- 3) Generate a 32-byte hash value from the following data using MD5 algorithm.

“xxxxxx:yyyyy:zzzzzzzz”

xxxxxx : Administrator rights user name for WEB CONTROL (Default user name is “admin1”)

yyyyy : Password of above administrator rights user (Default password is “panasonic”)

zzzzzzzz : 8-byte random number obtained in Step 2

## Command transmission method

Transmit using the following command format.

Transmitted data

Header		Data section	Termination symbol
Hash value (See above <Connection method>)	‘0’ 0x30	‘0’ 0x30	Control command (ASCII string)
32 bytes	1 byte	1 byte	Undefined length

Receive data

Header		Data section	Termination symbol
‘0’ 0x30	‘0’ 0x30	Control command (ASCII string)	(CR) 0x0d
1 byte	1 byte	Undefined length	1 byte

Error response

Error message	Termination symbol
“ERR1” “ERR2” “ERR3” “ERR4” “ERR5” “ERRA”	Undefined control command Out of parameter range Busy state or no-acceptable period Timeout or no-acceptable period Wrong data length Password mismatch
4 bytes	(CR) 0x0d 1 byte



# Control commands via LAN (continued)

When WEB Control administrator rights password is not set (Non-protect mode)

## Connection method

1) Obtain the IP address and port number (Initial set value = 1024) of the projector and make a request for connection to the projector.

Acquire the IP address from the menu screen of the projector, and the port number from the WEB control page.

**IP address :** Obtain from MAIN MENU → [Network] → [Network status]

**Port No. :** Acquire from the WEB control “Detailed set up” → “Command port setting” page

2) There is a response from the projector.

### Response data

Data section	Blank	Mode	Termination symbol
“NTCONTROL” (ASCII string)	‘ ’	‘0’	(CR)
9 bytes	0x20 1 byte	0x30 1 byte	0x0d 1 byte

Mode : 0 = Non-protect mode

## Command transmission method

Transmit by the following command format.

### Transmitted data

Header	Data section	Termination symbol
‘0’ 0x30 1 byte	‘0’ 0x30 Undefined length	Control command (ASCII string) (CR) 0x0d 1 byte

### Receive data

Header	Data section	Termination symbol
‘0’ 0x30 1 byte	‘0’ 0x30 Undefined length	Control command (ASCII string) (CR) 0x0d 1 byte

### Receive data

Error message	Termination symbol
“ERR1” “ERR2” “ERR3” “ERR4” “ERR5” “ERRA”	Undefined control command Out of parameter range Busy state or no-acceptable period Timeout or no-acceptable period Wrong data length Password mismatch (CR) 0x0d
4 bytes	1 byte

# Glossary

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Item	Descriptions	See page
<b>DNS</b>	Abbreviation for Domain name system. This system is to identify targets on the internet with using a domain name, without using an IP address.	<b>7</b> <b>10</b>
<b>DHCP</b>	Abbreviation for Dynamic Host Configuration Protocol. This function automatically assigns IP addresses to the connected equipment. If a device with the DHCP server function is present within a LAN, it automatically assigns IP addresses to the connected equipment	<b>7</b> <b>10</b>
<b>Default gateway</b>	The devices that are used for different network standards from yours. Default Gateway enables a connection with other network, by adjusting bilateral differences such as communication protocols. If no gateway is specified for the IP address of access destination, data will be sent to the host set as the default gateway.	<b>7</b> <b>10</b>
<b>IP address</b>	Internet Protocol (IP) is a protocol for distributing data, and the address corresponding to the data distribution destination is called the IP address. The same IP address cannot be used within the same LAN.	<b>7</b> <b>10</b>
<b>LAN</b>	Abbreviation for Local Area Network. This is a network with a relatively narrow range such as inside a company.	<b>4</b>
<b>Subnet</b>	This limits the range of the IP addresses assigned to computers in order to divide the network into a number of sections during TCP/IP connection. The value used to divide the network at this time is called the subnetmask.	<b>7</b> <b>10</b>

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