

PJLinkTEST4PJ

Operating Instructions

Version 2.0.0

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1 Overview

PJLinkTEST4PJ is an application which controls the display device (projector/display). This manual describes operating procedures of Button and Menu.

2 Main Window

The following window will be displayed when you start PJLinkTEST4PJ.

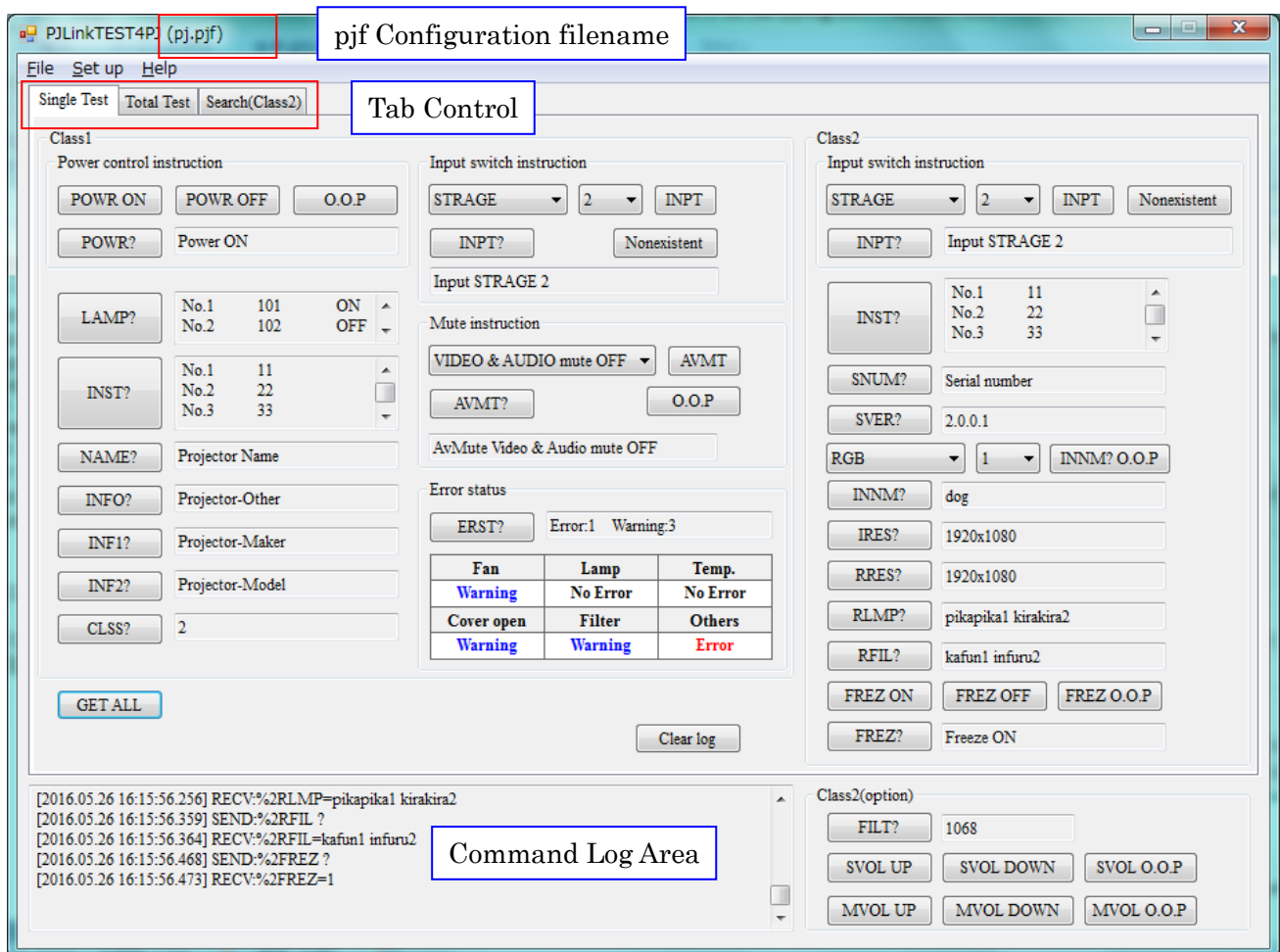


Figure 1 Main Window (Single Test window)

PJLinkTEST4PJ consists of three tab menus, “Single Test”, “Total Test” and “Search(Class2)”, and there is a common command log area at the bottom of the window.

In addition, the name of the configuration file (*.pjf) in current use will be displayed in the title bar.

3 Menu Bar

Table 1 Main Menu

Main Menu	Sub Menu	Contents of Process
File	Load	Load the settings from a pjf Configuration file.
	Save	Save the current settings to the pjf Configuration file.
	Save As...	Save the current settings as a new file.
	Exit	Exit the application.
Set Up	Network	Set up IP address, port number, password for the projector.
	Test set up	Set up various test conditions.
	Out of Parameter	Set up the parameters for out of range test.
Help	Version	Display version information.

3.1 Set up | Network Menu

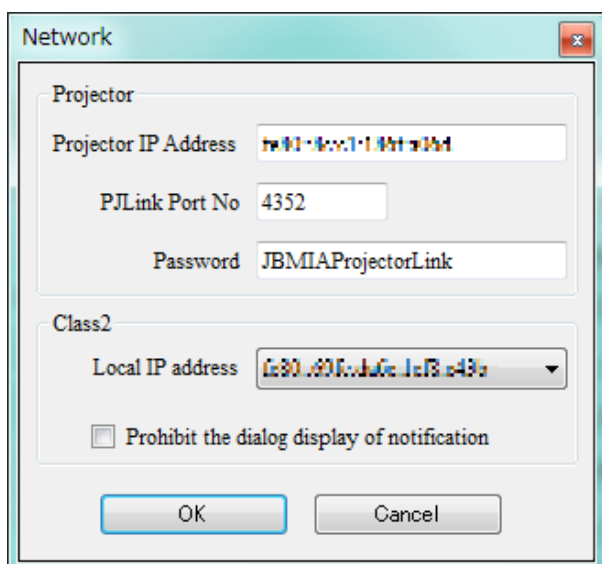


Figure 2 Network Dialog

Table 2 Network Dialog Items

Item	Contents
Projector IP Address	Set up IP address of the display device.
PJLink Port No	Set up connecting port number of PJLink.
Password	Set up the password for PJLink. * The password is not displayed as “*”, is displayed in plain text.
Local IP Address	Set up the Local IP address of its own device.
Prohibit the dialog display of notification	Set up whether or not to display the notification dialog. Checked: prohibit to pop-up dialogs, Unchecked: display dialogs

3.2 Set up | Test set up Menu

[Test set up] setting affects behavior of Single Test and Total Test.

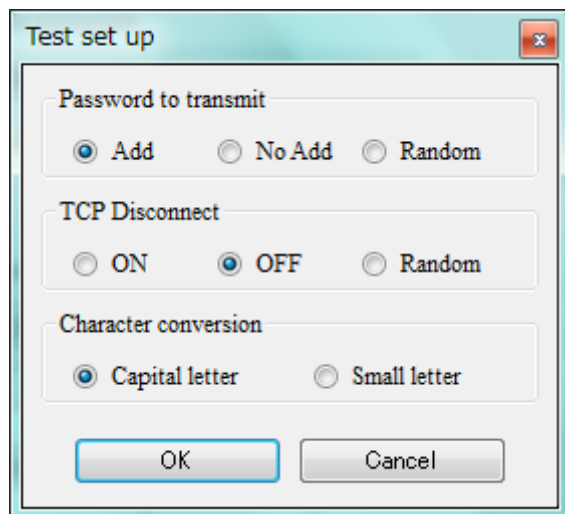


Figure 3 Test set up Dialog

Table 3 Test set up Dialog Items

Item	Contents
Password to transmit	Choose the password to transmit from the following options. Add: add an established password. No Add: not add password. Random: add random value. Regardless of PJLink 0/1 at the time of connection, this setting determines if the password sends or not.
TCP Disconnect	Choose the test method from the following options. ON: disconnect for each command OFF: continue for the connection Random: change randomly.
Character conversion	Choose the capital / small letter conversion on the command string. Capital letter: convert to capital (Upper case). Small letter: convert to small (Lower case).

3.3 Set up | Out of parameter Menu

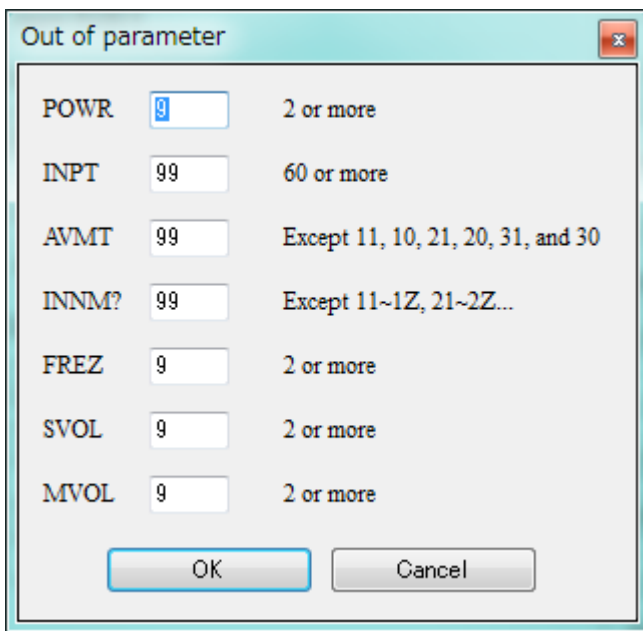


Figure 4 Out of parameter Dialog

Table 4 Out of parameter Dialog Items

Item	Contents
POWR	Set the value to issue the power command at a parameter out of range.
INPT	Set the value to issue the input switch command to nonexistent input source.
AVMT	Set the value to issue the mute command a parameter out of range.
INNМ?	Set the value to issue the query of input name to nonexistent input source.
FREZ	Set the value to issue the freeze command a parameter out of range.
SVOL	Set the value to issue the speaker volume command a parameter out of range.
MVOL	Set the value to issue the microphone volume command a parameter out of range.

4 Single Test

This executes a Unit Test for each command.

The Command/Query response will be displayed in the Text Box of the right (or bottom).

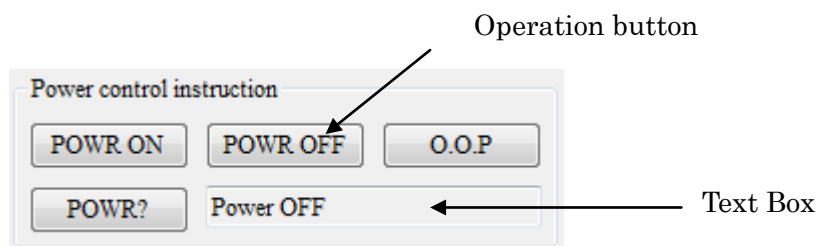
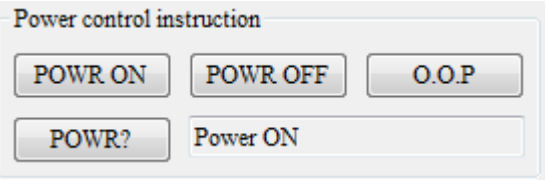
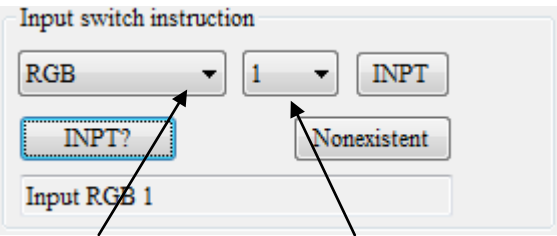
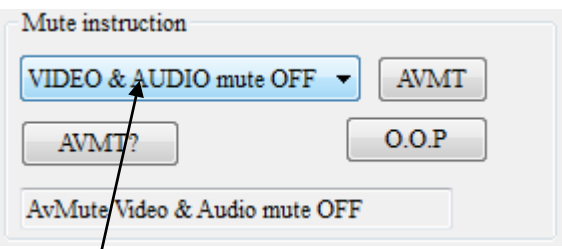


Figure 5 Explanatory Notes of Operation button and Text box

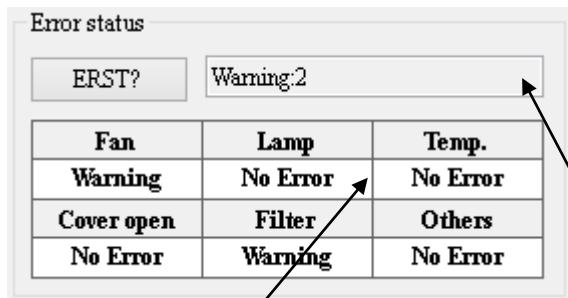
The description of the operation button which sends the command is shown below:

Table 5 Class1 operation buttons

Operation button	Contents
<p>Power control instruction</p> 	
POWR ON	Issue the command to turn on the power of the display device.
POWR OFF	Issue the command to turn off the power of the display device.
O.O.P	Issue the power command to the display device at out of parameter.
POWR?	Query the power status of the display device.
<p>Input switch instruction</p>  <p>Combo box1 Combo box2</p>	
INPT	Issue the input switch command with the contents which are selected with the Combo box1, 2.
Nonexistent	Issue the input switch command to the non-existent input source.
INPT?	Query the current input switch status.
<p>Mute instruction</p>  <p>Combo box</p>	
AVMT	Issue the mute command with the contents which are selected with the Combo box.
O.O.P	Issue the mute command at out of parameter.
AVMT?	Query the current Mute status.
LAMP?	Query the number of Lamps and lamp usage time.

Operation button	Contents
INST?	Query the available list of input switch.
NAME?	Query the name of the display device.
INFO?	Query other information which is defined by manufacturer.
INF1?	Query the manufacturer name.
INF2?	Query the model name.
CLSS?	Query the class information of PJLink.

Error status



Displays each Error status.

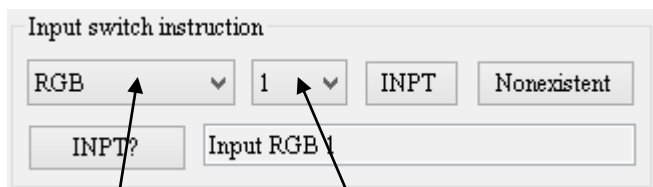
The status will be displayed the number of Errors and Warnings in the Text Box.

ERST?	Query the Error status.
GET ALL	Issue all of the query commands about Class 1 and Class 2.

Table 6 Class2 operation buttons

Operation button	Contents
------------------	----------

Input switch instruction




Combo Box1

Combo Box2

INPT	Issue the input switch command with the contents which are selected at the Combo box1, 2.
Nonexistent	Issue the input switch command to non-existent input source.
INPT?	Query the current input switch status.
SNUM?	Query the serial number of the display device.
SVER?	Query the software version of the display device.

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Operation button	Contents
 <p>Combo Box1 Combo Box2</p>	
INNMF?	Query the input name of selected with Combo box1,2.
INNMF O.O.P	Query the input name with out of parameter.
IRES?	Query the resolution of the input source.
RRES?	Query the recommended resolution.
FILF?	Query the filter usage time.
RLMF?	Query the lamp parts name of replacement.
RFIL?	Query the filter parts name of replacement.
SVOL UP	Issue the speaker volume command to turn up.
SVOL DOWN	Issue the speaker volume command to turn down.
SVOL O.O.P	Issue the speaker volume command with out of parameter.
MVOL UP	Issue the microphone volume command to turn up.
MVOL DOWN	Issue the microphone volume command to turn down.
MVOL O.O.P	Issue the microphone volume command with out of parameter.
FREZ ON	Issue the image freeze command.
FREZ OFF	Issue the image un-freeze command.
FREZ O.O.P	Issue the freeze command with out of parameter.
FREZ?	Query the freeze status.
<div style="border: 1px solid black; height: 290px;"></div>	

5 Total Test

This application can execute the Integration Test with continuous commands.

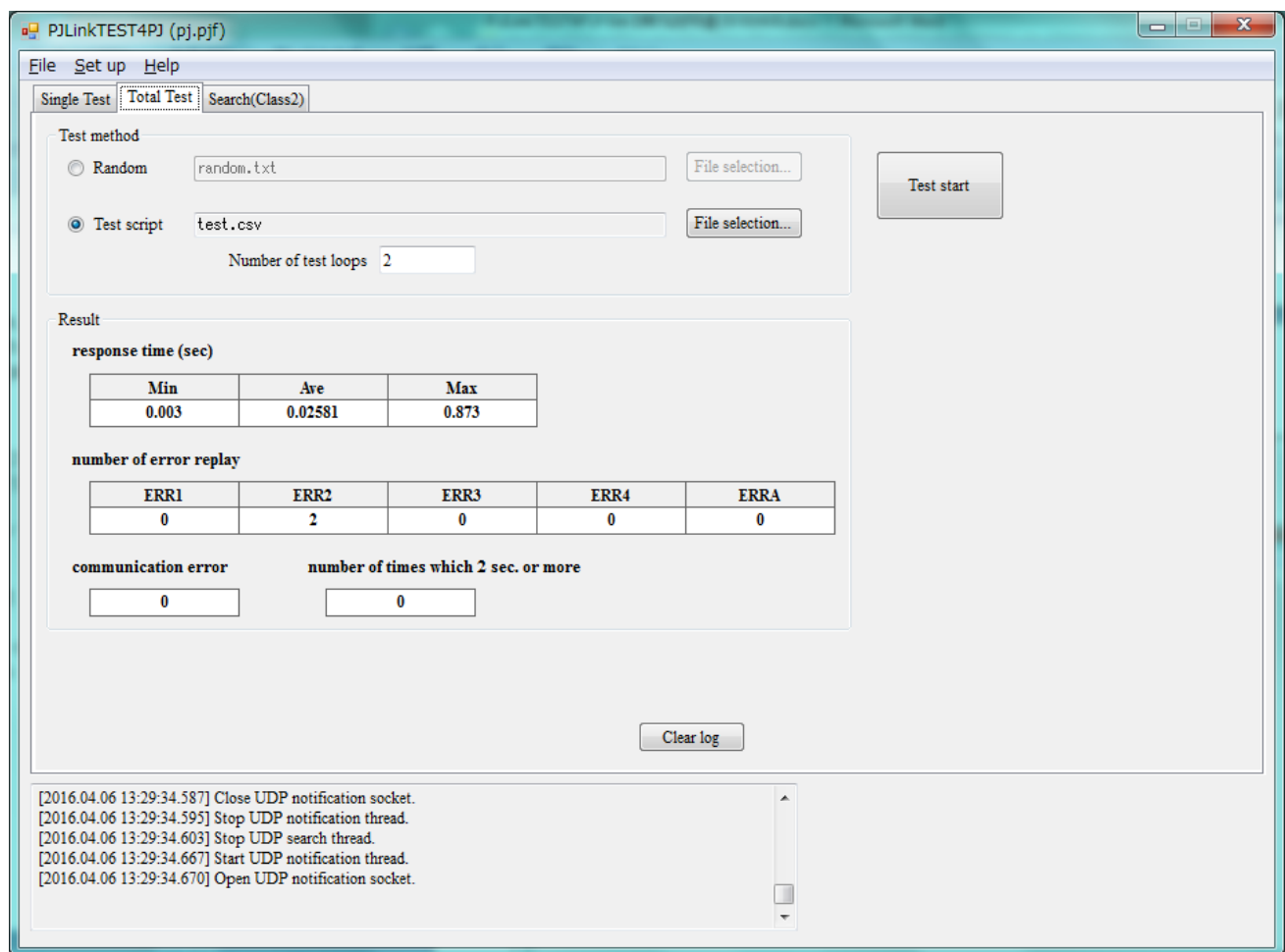


Figure 6 Total Test Window

5.1 Test method

- You can select from the random test (Random) or Test script.
- If you specify Random, you have to specify the random test file by [File selection...] button. This application executes commands in the file randomly.
This test doesn't measure the response time. So the response times of "response time (Min, Ave, Max)" and "number of times which 2 sec. or more" on the Result field are grayed-out.
- If you specify the Test script, you have to specify the script file by [File selection...] button, and specify the number of test loops.
- Then you can start this total test with [Test start] button.

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5.1.1 Random test file [(filename).txt]

- The file format is plain text.
- Register a command and parameter for every line.
- During the test, a command line in the file is selected randomly, and is transmitted.

Here is an example of random test file.

%1POWR ?	%2INPT 26	%2INPT 4S	%1AVMT 20	%2INNM ?
%1POWR 0	%2INPT 2H	%2INPT 4T	%1AVMT 31	%2IRES ?
%1POWR 1	%2INPT 2J	%2INPT 4V	%1AVMT 30	%2RRRES ?
%1INPT ?	%2INPT 2Z	%1INPT 51	%1ERST ?	%2FILT ?
%1INPT 11	%2INPT 31	%1INPT 52	%1LAMP ?	%2RLMP ?
%1INPT 12	%2INPT 32	%1INPT 53	%1INST ?	%2RFIL ?
%2INPT 14	%1INPT 33	%2INPT 54	%2INST ?	%2FREZ ?
%2INPT 1Q	%2INPT 3N	%2INPT 56	%1NAME ?	%2FREZ 0
%2INPT 1R	%2INPT 3P	%2INPT 5C	%1INFO ?	%2FREZ 1
%1INPT 1W	%2INPT 3X	%2INPT 5E	%1INF1 ?	%2SVOL 0
%2INPT 1X	%2INPT 3Y	%1AVMT ?	%1INF2 ?	%2SVOL 1
%1INPT 23	%2INPT 3Z	%1AVMT 11	%1CLSS ?	%2MVOL 0
%1INPT 24	%2INPT 41	%1AVMT 10	%2SNUM ?	%2MVOL 1
%1INPT 25	%1INPT 42	%1AVMT 21	%2SVER ?	

5.1.2 Test script file [(filename).csv]

- This file format is plain text (comma delimited).

Description of the test script:

```
HANDSHAKE ON
"%2Command1", Timer
"%1Command2", Timer
...
```

- HANDSHAKE ON or HANDSHAKE OFF: You must specify on the 1st line.
ON: wait the response (default), OFF: don't wait until the response.
- "%2Command Parameter" or "%1Command Parameter":
specify the command. Class1 command with %1, Class2 command with %2 at the head.
- Timer: msec. 0 specifies continuous.
When HANDSHAKE ON, wait time after from receiving the response
When HANDSHAKE OFF, wait time after from sending the command.
- ... Repeat writing commands as you need.

Here is an example of test script.

HANDSHAKE ON	%1INPT 51,1100	%1LAMP ?,1000
%1POWR ?,1000	%1AVMT ?,1100	%1INST ?,1100
%1POWR 0,1100	%1AVMT 11,1000	%1NAME ?,1000
%1POWR 1,1000	%1AVMT 10,1100	%1INF1 ?,1000
%1INPT ?,1000	%1AVMT 21,1000	%1INF2 ?,1000
%1INPT 11,1100	%1AVMT 20,1000	%1INF3 ?,1000
%1INPT 21,1000	%1AVMT 31,1100	%1INFO ?,1000
%1INPT 31,1100	%1AVMT 30,1000	%1CLSS ?,1100
%1INPT 41,1100	%1ERST ?,1100	

5.2 Result

Table 7 Result Window

Item	Value	Contents
response time (sec)	Min	Display minimum value of response time in the test.
	Ave	Display average value of response time in the test.
	Max	Display maximum value of response time in the test.
number of error replay	ERR1	Number of undefined command reception.
	ERR2	Number of out of range reception.
	ERR3	Number of acceptance period error reception.
	ERR4	Number of abnormal reception.
	ERRA	Number of password mismatches reception.
communication error	—	Number of communication error. (Number of SocketError)
number of times which 2sec. or more	—	Number of times which takes more than 2 sec.

5.3 Test start Button

Start testing by pressing [Test start] button.

Then, this button will change to [Test end], and you can stop the testing by pressing the button.

6 Search

When you press [Search] button, this application sends multicast packet (IPv6), or broadcast packet

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(IPv4), and then display the responded MAC address of display device.

When you press [Clear search screen] button, the search result area is cleared.

Available search response is specified IP version (either IPv6 or IPv4) in [Local IP address] in [NETWORK] menu.

Note 1: The multicast address (IPv6) is [ff02::1], and the broadcast address (IPv4) is the local broadcast address. For example, when the IP address is 192.168.0.15 and subnet mask is 255.255.255.0, the broadcast address is 192.168.0.255.

Note 2: The limitation of available IP version is caused exceptions by multi-setting on BIND.

The search by PJLinkTEST4CNT, UDP: IPv6Any/IPAny is BInded, and the search by PJLinkTEST4PJ, UDP: IPv6Any/IPAny cannot BIND. Then, UDP: LocalIPAddress(also used for notification) is BInded, above limitation occurs.

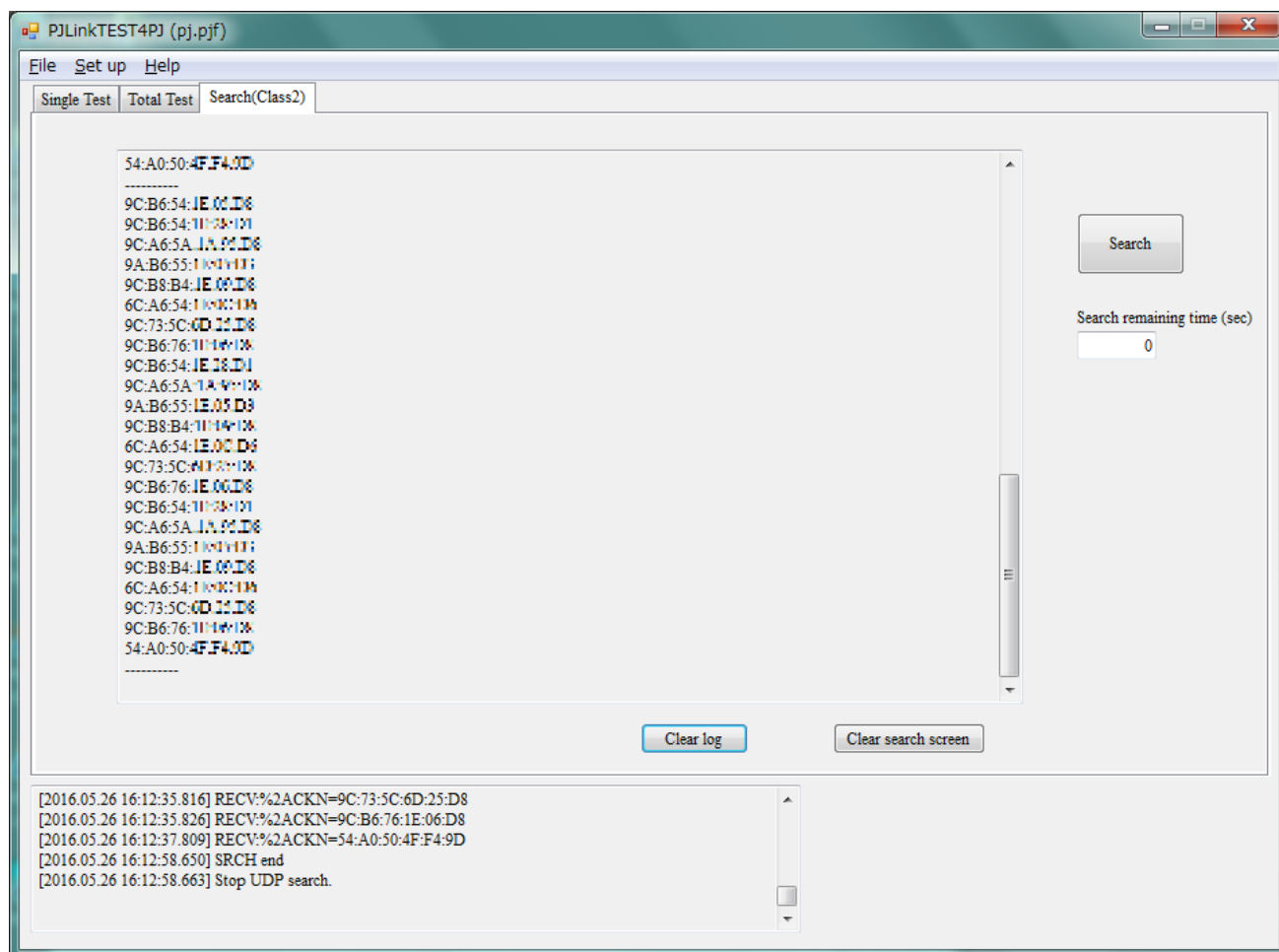


Figure 7 Search Window

7 Notification

The notification from a display device will be displayed with following dialog box.

You can set whether pop-up dialog box ON or OFF by menu setting.

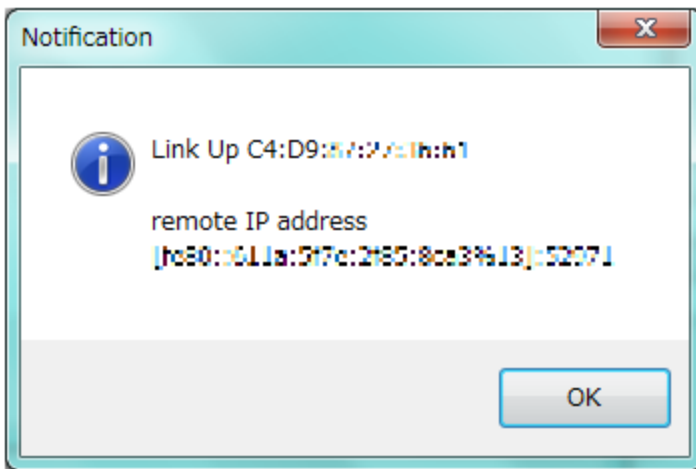


Figure 8 Notification of Link up

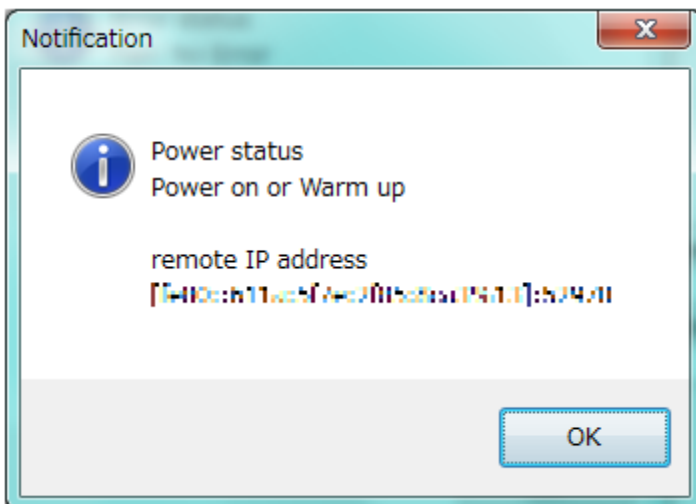


Figure 9 Notification of Power status

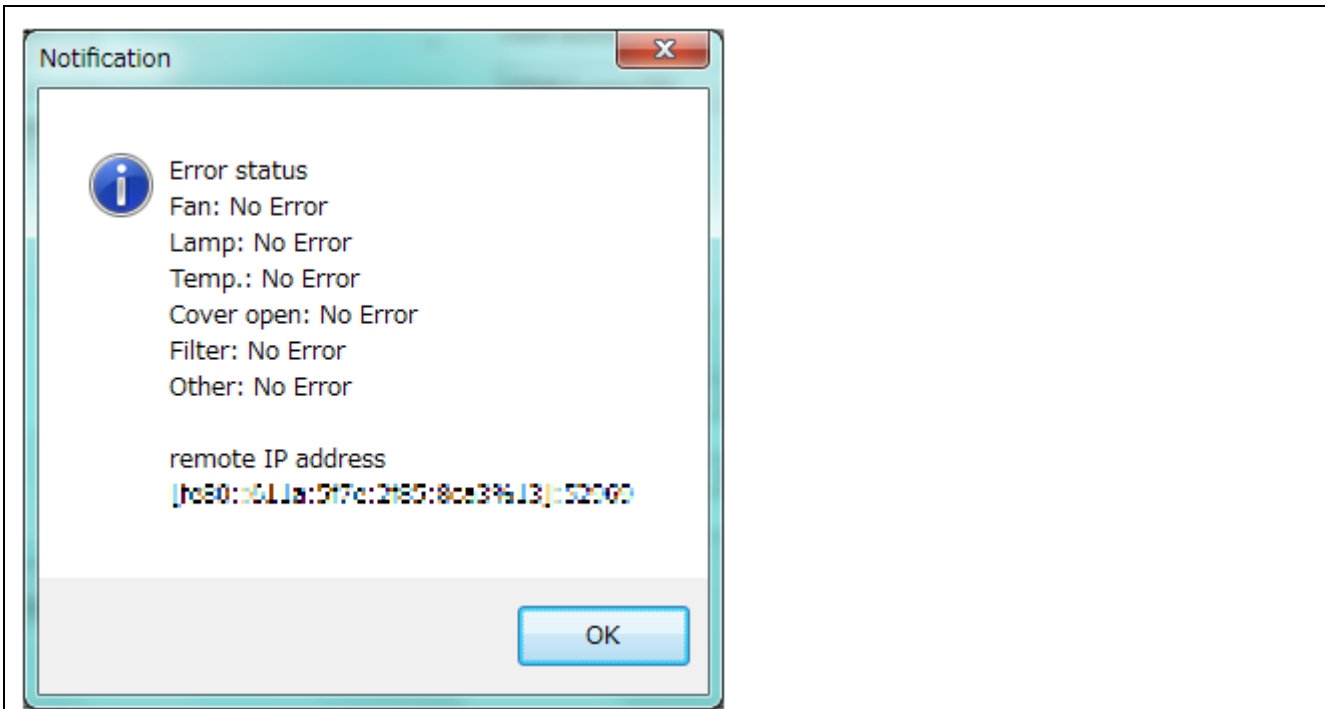


Figure 10 Notification of Error Status

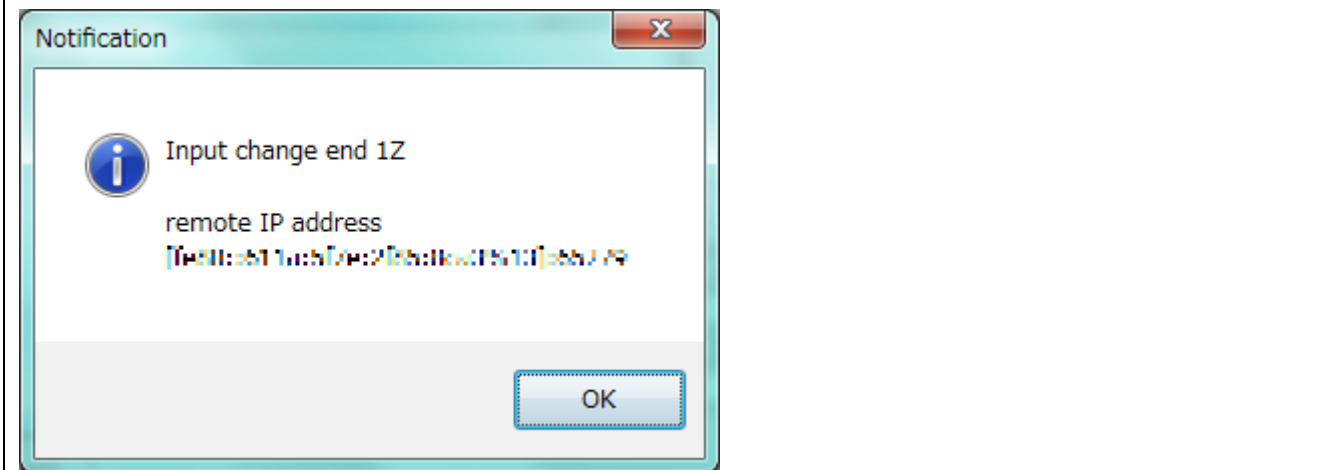


Figure 11 Notification of input change end

8 Command Log

All logs of communicated commands and responses are displayed in the textbox.
You can clear the log area by pressing [Clear log] button.

9 Configuration

Menu settings are saved into the following 2 files.
These are loaded and set up at start up.

- Base configuration file [PJLinkTEST4PJ.xml]
- pjf configuration file [(filename).pjf]

pjf configuration file can be selected in the File menu.

9.1 Base configuration file [PJLinkTEST4PJ.xml]

This file includes string data to be displayed in the application.

When you exit the application, the used filename is saved in pjf Configuration file.

Table 8 Application display strings

Item	XML parameters
AV Mute character display	<pre> <arr_avmt> <Cls_ItemValue> <statusName>VIDEO mute ON</statusName> <statusValue>11</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>VIDEO mute OFF</statusName> <statusValue>10</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>AUDIO mute ON</statusName> <statusValue>21</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>AUDIO mute OFF</statusName> <statusValue>20</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>VIDEO & AUDIO mute ON</statusName> <statusValue>31</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>VIDEO & AUDIO mute OFF</statusName> <statusValue>30</statusValue> </Cls_ItemValue> </arr_avmt> </pre>
INPUT character	<pre> <arr_inpt> </pre>

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Item	XML parameters
display	<pre> <Cls_ItemValue> <statusName>RGB</statusName> <statusValue>1</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>VIDEO</statusName> <statusValue>2</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>DIGITAL</statusName> <statusValue>3</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>STRAGE</statusName> <statusValue>4</statusValue> </Cls_ItemValue> <Cls_ItemValue> <statusName>NETWORK</statusName> <statusValue>5</statusValue> </Cls_ItemValue> </arr_inpt> </pre>

Table 9 Filename of application

Item	XML paramters
pjf Configuration filename	<PjfFileName>pj.pjf</PjfFileName>
Log filename	<LogFileName>PJLinkTEST4PJ.log</LogFileName>

9.2 Pjf configuration file [(filename).pjf]

This file saves communication setting of display device of this application.

This file will be saved when the application exit.

When start up this application, the pjf Configuration file which is used the last time will be loaded. The loaded configuration filename is displayed in title bar of this application.

The file extension is pjf, and file format is xml.

<Setup>Item of XML Tag can be changed on application menu.

<Disp>Item of XML Tag can be changed on [Total Test] Tab of this application.

Table 10 <Setup> Items

XML Tag	Contents
<LocalIPAddress>::1</LocalIPAddress>	IP address of its own device.
<ProjectorIPAddress>::1</ProjectorIPAddress>	IP address of the display device.
<PortNo>4352</PortNo>	Port number of PJLink.
<Password>JBMIAPjectorLink</Password>	Password of PJLink communication. This item is limited by 32 bytes.
<NoDisplayNotificationDialog>>false </NoDisplayNotificationDialog>	Prohibit to pop-up the notification dialog. false: Pop-up, true: no display.
<PasswordTransmit>0</PasswordTransmit>	Authentication method 0: ON, 1: OFF, 2: Random.
<TcpDisconnect>0</TcpDisconnect>	Disconnect TCP session. 0: Disconnect for each command (ON), 1: Not disconnect (OFF), 2: Random.
<SendCharCase>>true</SendCharCase>	Upper/Lower case conversion of the transmission command. true: Upper case (Capital letter), false: Lower case (Small letter).
<OOP_Powr>9</OOP_Powr> <OOP_Inpt>99</OOP_Inpt> <OOP_Avmt>99</OOP_Avmt> <OOP_Innm>99</OOP_Innm> <OOP_Frez>9</OOP_Frez> <OOP_Svol>9</OOP_Svol> <OOP_Mvol>9</OOP_Mvol>	Setting parameters of out of range. Set up the value when pressing each [O.O.P] button of POWR, INPT, AVMT, INNMM?, FREZ, SVOL, MVOL command. [Out of Parameter Value] POWR ... more than 2. INPT ... except 11~1Z, 21~2Z AVMT ... except 10, 11, 20, 21, 30, 31 INNMM ... except 11~1Z, 21~2Z

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XML Tag	Contents
	FREZ ... more than 2 SVOL ... more than 2 MVOL ... more than 2
Table 11 <Disp> Items	
XML Tag	Contents
<TestMeth>>false</TestMeth>	Test Method. true: random test, false: test script
<RandomTestFileName>PJLinkTEST4PJcom.txt</RandomTestFileName>	Filename of Random test.
<TestFileName>test.csv</TestFileName>	Filename of test script.
<Loops>1</Loops>	Number of test iterations of the script test.