Projector

IN5132/IN5142/IN5134/IN5134a IN5144/IN5144a/IN5135/IN5145

User's Manual (detailed) Instant Stack Guide

Thank you for purchasing this product.

Features

This projector can be used in conjunction with another projector (same model) to project an image on the same screen using the Instant Stack feature.

The two projectors can be used simultaneously to make the image brighter. In addition, if you connect two projectors with RS-232 null modem cable, it becomes an intelligent stacking system. The two projectors can work alternately and once one malfunctions, the other projector will automatically start working to keep your presentation going.

These features, generically called Instant Stack, provide you with many uses.

About this manual

Various symbols are used in this manual. The meanings of these symbols are described below.

- ▲ **WARNING** This symbol indicates information that, if ignored, could possibly result in personal injury or even death due to incorrect handling.
- ▲ **CAUTION** This symbol indicates information that, if ignored, could possibly result in personal injury or physical damage due to incorrect handling.
 - **NOTICE** This entry indicates potential problems.
 - Please refer to the pages written following this symbol.

△WARNING ► Before using this product, be sure to read all manuals for this product. After reading them, store them in a safe place for future reference.

▶ Follow all the instructions in the manuals or on the product. The manufacturer assumes no responsibility for any damage caused by mishandling that is beyond normal usage defined in the manuals.

NOTE • The information in this manual is subject to change without notice.

- The manufacturer assumes no responsibility for any errors that may appear in this manual.
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1. Introduction

1.1 Basic information and preparations

Instant Stack

Instant Stack is a feature that allows you to easily superimpose images projected from two projectors.

Intelligent Stack and Simple Stack

Instant Stack includes the following two features:

When two projectors are connected via an RS-232 cable and proper menu settings have been selected, these two projectors will automatically operate in synchronization with each other. This is known as Intelligent Stack in this manual. The two projectors can also operate individually without an RS-232 connection. This is known as Simple Stack in this manual.

Remote control for Intelligent Stack and Simple Stack

For Intelligent Stack, one projector is set as Main and the other is set as Sub. Only the Main projector is capable of receiving remote control signals. Operate the projectors from the control panel of the Main projector or with the remote control pointing at the Main projector. For details on operating by remote control and from the control panel, refer to 3.7 Important Information for Intelligent Stack.

For Simple Stack, both projectors can receive remote control signals. To avoid incorrect operations with the remote control, we recommend to operate both projectors with the control panel or a wired remote control, or one projector with the remote control and the other with the control panel or a wired remote control. In this case, disable the remote control receiver on the other projector with the KEY LOCK feature. (Poperating Guide
OPTION menu)

If you require more information on Instant Stack, please consult your dealer.

△WARNING ► Do not place the projectors directly on top of other projectors.

△CAUTION ► Place the projector in a cool place with sufficient ventilation. Keep a space of 30 cm or more between the side of the projector and other objects such as a wall. Keep a space of 30 cm or more between two projectors, especially if you are installing the projectors side by side. Take care not to let the hot exhaust air from other projectors enter the intake vents of the projector.

(continued on next page)

NOTICE ► Intelligent Stack can be only be used with pairs of the same model projectors.

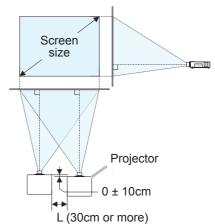
- ► A maximum of two projectors can be used in an Intelligent Stack.
- ▶ Depending on the installation and surrounding environment, images projected from the two projectors may not superimpose completely. Images cannot superimpose well when the screen is slanted, deformed or the surface is uneven.
- Images projected immediately after turning on the projectors are unstable due to rising internal temperatures. Wait for a minimum of 20 minutes before beginning to adjust the superimposed images.
- Image positions may shift due to temperature changes, vibration, or shock caused from hitting the projector. Install the projectors in a stable environment when using Instant Stack. If the image positions are shifted, readjust the images. (\$\subseteq\$6, 8, 11\$)
- The image positions may shift over time due to the tension and the weight of the connecting cables. Make sure not to impose any load on the projectors when arranging the cables.
- If the volume level of the built-in speakers is too high, noise may occur and the image quality may deteriorate. In this case, check the volume settings on both projectors.
- When two projectors are connected using an RS-232 cable, the Main projector will be able to control the Sub projector. This feature is known as Intelligent Stack. () When Intelligent Stack is used with an RS-232 cable, RS-232 communication cannot be used to control the projector. If you wish to control the projectors from a computer, use the LAN connection on any of the projectors.
- When Intelligent Stack is used, the some menu options and settings are restricted. Refer to this manual for details. (4.30)

2. Installation

For safety reasons, read 1.1 Basic information and preparations (43, 4) carefully before installation. In addition, review the following for proper use of Instant Stack.

- · Use the same model projectors.
- Arrange the projectors side by side.
- Verify the projection screen is perpendicular to the projectors.
- Project images larger than the minimum screen size shown in the table. The greater the distance between the projectors, the larger the screen size needs to be.

L: distance	Minimum screen size
[cm]	[inch]
30	200
50	250
100	380



- If you control one projector with the remote control during installation, we recommend
 that you operate the other with the control panel or a wired remote control. In this case,
 disable the remote control receiver on the other projector with the KEY LOCK feature.
 (☐Operating Guide → OPTION menu)
- Images from Set A and Set B may superimpose well but the image positions can shift over time. Readjust to superimpose the images.

2.1 Preparing for Intelligent Stack

When using Intelligent Stack via an RS-232 connection, ensure the following settings are set up on the two projectors. Otherwise, the Intelligent Stack menu cannot be selected.

- STANDBY MODE in SETUP menu: NORMAL
 (☐ Operating Guide → SETUP menu)
- COMMUNICATION TYPE under COMMUNICATION in SERVICE menu: OFF (☐ Operating Guide → OPTION menu)
- STACK LOCK in SECURITY menu: OFF

When STACK LOCK is set to ON, menus related to Instant Stack cannot be selected. Therefore it is necessary to turn STACK LOCK to OFF during Instant Stack installation and menu set up.

(1) Use the ▲/▼/◄/▶ buttons to go into the following menu.

ADVANCED MENU > SECURITY (> ENTER PASSWORD) > STACK LOCK

STACK LOCK dialog will appear on screen. (☐Operating Guide → SECURITY menu)



(2) Use the ▲/▼ buttons to highlight OFF, and press the ▶ button to save the setting.

2.2 Installing the first projector (Set *A*)

Deciding the installation position

Decide the position of Set A and its projection angle. ($\square User$'s Manual (concise) $\rightarrow Arrangement$ and Adjusting the projector's elevator)

△WARNING ► For IN5142, IN5144, IN5144a and IN5145 only: You can install the projector in any direction with specified mounting accessories. Consult with your dealer for that type of installation.

NOTE • Set the tilt angle of Set **A** within 9 degrees of the level line.

Setting up Set A

- 1. Turn on Set A.
- **2.** Adjust the INSTALLATION settings first because it may change the image position. (☐ Operating Guide → SETUP menu)
- 3. Adjust the image of Set A to fit the screen with the ZOOM, FOCUS and LENS SHIFT features. (☐ Operating Guide → Adjusting the lens) Adjust the image position using KEYSTONE and PERFECT FIT as needed. (☐ Operating Guide → EASY MENU or SETUP menu)

NOTE • KEYSTONE cannot be selected when PERFECT FIT is in use. To adjust the image using both KEYSTONE and PERFECT FIT, adjust KEYSTONE first.

• If you are using Simple Stack, go to 2.3 Installation of the second projector (Set B). (\$\subset\$8)

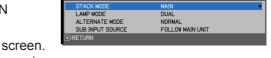
(continued on next page)

- **4.** Press the **MENU** button to display the menu. (☐Operating Guide → Using the menu function)
- **5.** Use the **△**/**▼**/**◄**/**▶** buttons to go into the following menu.

ADVANCED MENU > OPTION

- > SERVICE > COMMUNICATION
- > STACK

The STACK menu will appear on screen. (☐Operating Guide → OPTION menu)



SERVICE_COMMUNICATION_STACK

SERVICE_COMMUNICATION_STACK

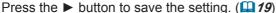
6. Use the ▲/▼ buttons to highlight STACK MODE, and press the ▶ button to display the STACK MODE dialog. Highlight SUB pressing the ▲/▼ buttons, and press the ▶ button.



ARE YOU SURE

YOU WISH TO CHANGE STACK SETTING?

7. After pressing the ▶ button, a dialog to confirm whether or not to save the setting is displayed.



8. If you are using Intelligent Stack, disable the remote control receiver using KEY LOCK. (☐ Operating Guide → OPTION menu)

NOTE • Set **A** cannot be operated by the remote control after this change has been made. To avoid crosstalk when operating with the remote control, we recommend disabling the remote control receiver using KEY LOCK.

• After the STACK MODE setting is completed, Set **A** (Sub) will not be able to receive remote control signals. When STACK MODE is set to OFF, enable the remote control receiver using KEY LOCK if needed.

2.3 Installing the second projector (Set *B***)**

Deciding the installation position

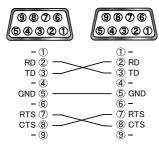
Decide the position of Set \boldsymbol{B} and its projection angle. ($\square User$'s Manual (concise) $\rightarrow Arrangement$ and Adjusting the projector's elevator)

△WARNING ► For IN5142, IN5144, IN5144a and IN5145 only: You can install the projector in any direction with specified mounting accessories. Consult with your dealer for that type of installation.

NOTE • Set the tilt angle of Set **B** within 9 degrees of the level line.

Connecting projectors

To use Intelligent Stack, connect an RS-232 null modem cable between the **CONTROL** port of Set **A** and Set **B**.



Setting up Set B

1. Turn on Set B.

NOTE • After turning on Set **B**, verify the image of Set **B** is not significantly tilted compared to the image of Set **A**. If the image is overly tilted, rotate the elevator feet of Set **B** to adjust the angle so that the tilt is just about right.

2. Reset the adjustment of KEYSTONE and PERFECT FIT on Set B. (☐ Operating Guide → EASY MENU or SETUP menu)

NOTE • KEYSTONE cannot be selected when PERFECT FIT is in use. To reset both functions, reset PERFECT FIT first.

• Set up the INSTALLATION settings first because the image position may change. (

**Doperating Guide → SETUP menu*)

3. Adjust the image size and position of Set **B** with the ZOOM, FOCUS and LENS SHIFT features so that the image can be completely superimposed to the image of Set **A**. (☐Operating Guide → Adjusting the lens)

NOTE • Afterwards, making fine adjustments to the image size and position, using functions such as KEYSTONE and PERFECT FIT, will not increase the image size. Therefore, it is important to have the image of Set **B** completely superimposed on the image of Set **A**.

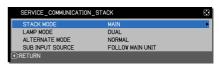
- When controlling Set **B** with the remote control, Set **A** may also respond to the remote control. We recommend controlling Set **B** with the control panel on Set **B**.
- If you are using Simple Stack, go to For Simple Stack users. (412)
- **4.** Display the menu with the **MENU** button. (☐Operating Guide → Using the menu function)
- **5.** Use the $\triangle/\nabla/\blacktriangleleft/\triangleright$ buttons to go into the following menu.

ADVANCED MENU > OPTION

- > SERVICE > COMMUNICATION
- > STACK

STACK menu will appear on screen.

(☐ Operating Guide → OPTION menu)

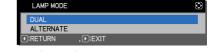


6. Use the ▲/▼ buttons to highlight STACK MODE, and press the ▶ button to display the STACK MODE dialog. Highlight MAIN with the ▲/▼ buttons, and

press the ◀ button to return to the previous menu.



7. Use the ▲/▼ buttons to highlight LAMP MODE, and press the ▶ button to display the LAMP MODE dialog.



Highlight DUAL with the $\blacktriangle/\blacktriangledown$ buttons, and press the \blacktriangleright button.

8. After pressing the ▶ button, a dialog to confirm whether or not to save the setting is displayed.

Press the ▶ button to save the setting. (□19)



2.4 Confirming Main and Sub settings

1. Press the **MENU** button on the remote control for Main (Set **B**).

NOTE • When Intelligent Stack is in use, only Main will be able to receive remote control signals. Sub will not respond to remote control signals.

2. The following dialogs appear on the lower right screen.





3. If you press the ▶ button, the dialog closes and the Main (Set *B*) menu will appear when MAIN is highlighted.

If you press the ◀ button, the dialog closes and the menu will disappear.

NOTE • If these dialogs are not displayed on screen, check the RS-232 connection ($\square 8$) and the MAIN or SUB settings in the STACK MODE dialog. ($\square 14$)

2.5 Fine adjusting image position

To superimpose the images of Main (Set **B**) and Sub (Set **A**), fine adjust the image size and position of Main (Set **B**) using PERFECT FIT.

For Intelligent Stack users

1. Press the **MENU** button on the remote control or the control panel on Main (Set **B**) to display the MENU dialog.

Highlight MAIN with the ▲/▼ buttons, and press the ▶ button.

Main (Set B)'s menu will appear.

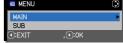
2. Using the ▲/▼/◄/▶ buttons on the remote control or the control panel on Main (Set B), select PERFECT FIT from EASY MENU, or the SETUP menu of AD-VANCED MENU. (☐Operating Guide → EASY MENU or SETUP menu)

The image for Intelligent Stack appears on screen. This image includes a TEMPLATE screen with the PERFECT FIT dialog from Main (Set **B**) and another TEMPLATE screen from Sub (Set **A**).

3. Using PERFECT FIT on Main (Set **B**), adjust the image size and position of Main (Set **B**) to superimpose onto the image of Sub (Set **A**). (☐Operating Guide → EASY MENU or SETUP menu)

We recommend the following adjustments:

- (1) Roughly adjust the four corners in the order below.
 - Top left → Top right
 - → Bottom right → Bottom left
- (2) Fine adjust the four corners in the same way.



Main (Set B) <IN5132, IN5142, IN5134, IN5134a, IN5144, IN5144a>



<IN5135, IN5145>

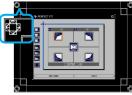


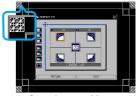
Image from Main (Set B)



Image from Sub (Set A) <IN5132, IN5142, IN5134, IN5134a, IN5144, IN5144a>



<IN5135, IN5145>



Superimposed image

For Simple Stack users

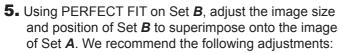
- **1.** Press the **MENU** button on the remote control to display the menu on Set **A**.
- 2. Use the ▲/▼/◀/▶ buttons to open the TEMPLATE dialog, then select STACK on the dialog.

 (☐Operating Guide → SCREEN menu)
- **3.** Press the **MENU** button on Set **B**'s control panel to display the menu.
- **4.** Use the ▲/▼/◀/▶ buttons to select PERFECT FIT from EASY MENU, or the SETUP menu of ADVANCED MENU. (

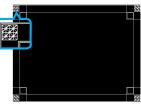
 ☐ Operating Guide → EASY MENU or SETUP menu)

PERFECT FIT dialog appears on screen.

Select the test pattern icon shown in the lower left of the dialog with the ◄/▼ buttons. When you press the ENTER or INPUT button, the test pattern appears or disappears.



- Roughly adjust the four corners in the order below.
 Top left → Top right → Bottom right → Bottom left
- (2) Fine adjust the four corners in the same way.



STACK of TEMPLATE <IN5132, IN5142, IN5134, IN5134a, IN5144, IN5144a>



<IN5135, IN5145>



PERFECT FIT dialog on STACK of TEMPLATE

NOTES for all users • For details on PERFECT FIT, refer to *PERFECT FIT* in the *EASY MENU* or *SETUP menu* as described in the *Operating Guide*.

- We strongly recommend using a flat screen. If a curved or skewed screen is used, it is very difficult to align the two images even if you use the pin/barrel adjustment of PERFECT FIT.
- Even after finely adjusting the images from the two projectors, you may not be able to superimpose the images sufficiently depending on the input signals. If this is the case, try the following methods:
- Press the **AUTO** button on the remote control or execute AUTO ADJUST EXECUTE (☐ Operating Guide → IMAGE menu) on each of the projectors.
- Adjust H POSITION and V POSITION (☐ Operating Guide → IMAGE menu) on each of the projectors.
- Check the RESOLUTION settings in the INPUT menu, and modify the settings so that Main and Sub are identical. (☐ Operating Guide → INPUT menu)

3. STACK menu settings

Set up Intelligent Stack settings in the STACK menu.

NOTE • If you are using Simple Stack without an RS-232 connection, skip this chapter.

- If you do not need to change the settings made during the installation process described in the previous chapter, go to 3.3 Selecting lamp operation mode. (\$\to\$15)
- Read 3.7 Important information for Intelligent Stack carefully. (20)

3.1 Displaying STACK menu

Use the $\triangle/\nabla/\blacktriangleleft/\triangleright$ buttons to go into the following menu.

ADVANCED MENU > OPTION

> SERVICE > COMMUNICATION > STACK



STACK menu will appear on screen. ($\square Operating\ Guide \rightarrow OPTION\ menu$) The setting for Intelligent Stack operation starts from this menu.

NOTE • Check that the following settings are made on both projectors. Otherwise, the STACK menu on the projectors cannot be selected. (5)

- STANDBY MODE in SETUP menu: NORMAL (☐ Operating Guide → SETUP menu)
- STACK LOCK in SECURITY menu: OFF (45)

3.2 Selecting Main, Sub or off

To enable Intelligent Stack, select either MAIN or SUB. Intelligent Stack starts when one projector is set to MAIN and the other is set to SUB in the STACK MODE dialog. To disable Intelligent Stack, select OFF.

 Highlight STACK MODE in the STACK menu with the ▲/▼ buttons, then press the ► button to display the STACK MODE dialog.



2. Use the ▲/▼ buttons in the dialog to highlight MAIN, SUB or OFF.

OFF: Disables Intelligent Stack.

MAIN: Defines the projector as the controlling projector.

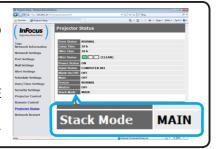
SUB: Defines the projector as the subordinate projector.

3. Press the ◀ button to return to the previous menu, or press the ▶ button to save the setting. (□ 19)

NOTE • After setting Main or Sub, the setting information can be checked on Projector Web Control. (

— Network Guide → Projector Web Control)

Select Projector Status in the main menu of Projector Web Control. Even if STACK MODE is set to OFF, the Stack Mode item shows whether your projector is set to MAIN or SUB.



3.3 Selecting lamp operation mode

Select DUAL or ALTERNATE lamp operation mode.

 Highlight LAMP MODE in the STACK menu with the ▲/▼ buttons, then press the ► button to display the LAMP MODE dialog.



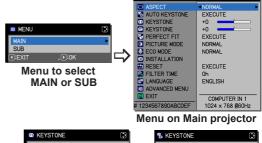
- 2. Use the ▲/▼ buttons in the dialog to highlight DUAL or ALTERNATE.
 DUAL: Turns on the projectors simultaneously.
 ALTERNATE: Turns on the projectors alternately.
- **3.** Press the ◀ button to return to the previous menu, or press the ▶ button to save the setting. (□ 19)

NOTE • If DUAL is selected, a menu to select MAIN or SUB appears on screen when a button on the projector's control panel or remote control is pressed. Select the projector that you want to operate. Refer to the examples below:

- When the MENU button is pressed, a menu to select MAIN or SUB is displayed. If MAIN is selected, the Main projector's EASY MENU or ADVANCED MENU is displayed.
- When one of the buttons from KEYSTONE, FOCUS + / -, ZOOM, ZOOM + / and LENS SHIFT is pressed, a menu to select MAIN or SUB is displayed. If
 MAIN is selected, each menu or dialog of the Main projector is displayed.
- <Only for IN5142, IN5144, IN5144a and IN5145>
 When the ENTER button is pressed for three seconds, a menu to select MAIN or SUB is displayed. If MAIN is selected, the Status Monitor on the Main Projector can be operated.

• When DUAL is selected for LAMP MODE, the following restrictions are in effect:

- AUTO POWER OFF and FREEZE functions on both projectors are disabled.
- The test patterns for CUSTOM of GAMMA and COLOR TEMP are not displayed.
- The projectors take a little longer to turn on. This is not a malfunction.
- In some cases when DUAL is selected, the screen may appear darker when an OSD is displayed.





(continued on next page)

NOTE • When DUAL is selected for LAMP MODE, the images projected from the Main and Sub projectors can be different. We recommend setting up the projectors as follows:

- Select the same image for TEMPLATE and START UP on the Main and Sub projectors.
- Capture the same image for MyScreen on the Main and Sub projectors.
- Save the same image on MY IMAGE on the Main and Sub projectors.
- Set the same message content for the Messenger function (☐Network Guide → Messenger Function) on the Main and Sub projectors.
- When DUAL is selected for LAMP MODE, image shift can cause image quality degradation on the screen. Before adjusting the image position, adjust the INSTALLATION settings first because changing the INSTALLATION settings will affect the image position. (☐ Operating Guide → SETUP menu)
- When ALTERNATE is selected and a malfunction causes the projector's lamp to turn off, the other projector will automatically start to operate. However the other projector will not turn on, if the RS-232 cable is disconnected or if AC power is not supplied.
- When PIN LOCK or TRANSITION DETECTOR on both projectors is set to ON (☐Operating Guide → SECURITY menu), neither projector will turn on even if ALTERNATE is selected. Enter the security code on both projectors and one of the projectors will turn on.
- When Intelligent Stack is in use, the **POWER** indicator on the projector operates differently than normal (☐ Operating Guide → Troubleshooting). When both the Main and Sub projectors are in standby mode and the **ON** button on the remote control or the **STANDBY/ON** button of the Main projector is pressed, the Main projector determines which projector to turn on according to the STACK MODE setting.
- The **POWER** indicator on the Main projector blinks green while the Main projector determines which projector to turn on.
- If the Main projector is turned on, the **POWER** indicator on the Main projector turns to steady green after lighting up, as normal.
- If the Sub projector is turned on, the **POWER** indicator on the Main projector lights orange after the Sub projector is turned on.
- If an error occurs on the Main projector, the Sub projector turns on and the **POWER** indicator on the Main projector lights or blinks red.

3.4 Selecting lamp switching mode

The following setting is only necessary when ALTERNATE is selected in the LAMP MODE dialog. (\$\subseteq 15\$) Select the AUTO or NORMAL lamp switching mode when using ALTERNATE.

1. Highlight ALTERNATE MODE in the STACK menu with the ▲/▼ buttons, then press the ▶ button to display the ALTERNATE MODE dialog.



- 2. Use the ▲/▼ buttons in the dialog to highlight AUTO or NORMAL. AUTO: Turns on the projector with the lowest lamp hours. NORMAL: Turns on the projector that was not used previously.
- **3.** Press the ◀ button to return to the previous menu, or press the ▶ button to save the setting. (♠ 19)

NOTE • The ALTERNATE MODE dialog can be operated on the Main projector when ALTERNATE is selected in the LAMP MODE dialog.

• To maintain the quality and reliability of the two projectors, the projector with the highest lamp hours may be turned on even if AUTO is selected.

3.5 Selecting input source for Sub

 Highlight SUB INPUT SOURCE in the STACK menu with the ▲/▼ buttons, then press the ▶ button to display the SUB INPUT SOURCE dialog.



2. Use the ▲/▼ buttons in the dialog to highlight FOLLOW MAIN UNIT or FIXED (COMPUTER IN 1).

FOLLOW MAIN UNIT: Sets the input source on the Sub projector to the same port as Main.

FIXED (COMPUTER IN 1): Sets the input source on the Sub projector to the **COMPUTER IN1** port which is connected to the **MONITOR OUT** port on the Main projector.

3. Press the ◀ button to return to the previous menu, or press the ▶ button to save the setting. (♠ 19)

NOTE • <Only for **IN5135** and **IN5145**> When the projectors are in the PbyP mode, the SUB INPUT SOURCE is set to FOLLOW MAIN UNIT.

- If FIXED (COMPUTER IN 1) is selected, either the **COMPUTER IN1** or **IN2** port can be selected as an input source on the Main projector. When any source button on the remote control or the **INPUT** button on the projector is pressed, the MAIN INPUT SOURCE dialog will be displayed on screen. Select COMPUTER IN 1 or COMPUTER IN 2 with the ▲/▼ buttons.
- If FIXED (COMPUTER IN 1) is selected, the **COMPUTER IN1** port on the Sub projector should be connected to the **MONITOR OUT** port on the Main projector with a computer cable. The image from the selected port is output from the **MONITOR OUT** port on the Main projector to the **COMPUTER IN1** port on the Sub projector. The MONITOR OUT setting on the Main projector is disabled when FIXED (COMPUTER IN 1) is selected. (☐Operating Guide → SETUP menu)
- If FIXED (COMPUTER IN 1) is selected, video signals can be input to the **COMPUTER IN1** or **IN2** port on the Main projector. Set the port for video signal input in the COMPUTER IN menu and set the video format in the VIDEO FORMAT menu. Refer to *Inputting image from Main to Sub* (\$\mu\$24\$) and *Inputting image from Main to Sub Video signal (either component or video)*. (\$\mu\$28\$)

3.6 Exiting Intelligent Stack menu

Before exiting menu operation for Intelligent Stack, we recommend checking all the settings in the STACK menu. For dialogs that are associated with the STACK menu, you can press the ◀ button to return to the STACK menu. Refer to the following to exit menu operation for Intelligent Stack.

STACK menu

When you press the ◀ button (functioning as the RETURN key) after making some setting changes, a confirmation dialog will appear.

Pressing the ▶ button (functioning as the YES key) in the dialog saves the setting and closes the dialog. The screen becomes black while the setting is being applied. This may take a few seconds.

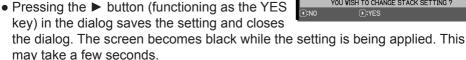




 Pressing the ◀ button (functioning as the NO key) in the dialog returns you to the COMMUNICATION menu without saving the setting. (☐Operating Guide → OPTION menu → SERVICE)

Dialog from STACK menu

When you press the ▶ button (functioning as the EXIT key) after making some setting changes, a confirmation dialog will appear.



Pressing the ◀ button (functioning as the NO key) in the dialog closes the dialog without saving the setting.



3.7 Important information for Intelligent Stack

This section provides important information related to setting up the Main and Sub projectors. It does not contain explanations on menu operation. Read all information carefully.

- To use Intelligent Stack, one projector must be set to Main and the other set to Sub.
- All buttons are disabled, except the STANDBY/ON button on the Sub projector's control panel. Operate the projectors with the control panel of the Main projector or the remote control.
- Pressing the STANDBY/ON button of the Sub projector does not allow you to turn off the Sub projector by itself. The Main and Sub projectors turn off when the button is pressed for more than 3 seconds. Pressing the button again will not turn on the Main or Sub projector.
- The remote control should be pointed at the Main projector because the Main projector is capable of receiving remote control signals and the Sub projector is not.
- <Only for IN5142, IN5144, IN5144a and IN5145>
 Each Status Monitor can also be operated individually from the respective control panel of the Main and Sub projectors. Only the monitor on the projector that has been turned on can be operated with the remote control.
- If a wired remote control is used, connect the cable to the Main projector instead of the Sub projector.
- For simple PC mouse & keyboard functions, connect both the Main and Sub projectors to your computer with USB cables. (☐ Operating Guide → Using as a simple PC mouse & keyboard)
- The AUTO SEARCH function is disabled when the projector is used in Intelligent Stack.
- The Sub projector cannot be turned on using network communication and Web Control to the Sub projector. The Sub projector can only be controlled through the Main projector.
- The Web Remote Control function of the Sub projector is disabled. (
 — Network
 Guide → 3.1.11 Remote Control)
- If you try to turn on the projectors using the POWER ON & DISPLAY ON feature
 of the MESSENGER function, the projectors will exit Intelligent Stack and
 display the specified message. To start Intelligent Stack again, re-select MAIN/
 (continued on next page)

3.7 Important information for Intelligent Stack (continued)

SUB on both projectors in the STACK MODE dialog, or turn both projectors off and on again.

- The Main and Sub projectors share these settings:
 - AV MUTE (☐ Operating Guide → Temporarily turning off the screen and audio)
 - Magnifying feature (☐ Operating Guide → Using the magnify feature)
 - ASPECT and OVER SCAN (☐ Operating Guide → IMAGE menu)
 - COMPUTER IN (☐ Operating Guide → INPUT menu)
 - MESSAGE (☐ Operating Guide → SCREEN menu)
 - MY BUTTON (☐ Operating Guide → OPTION menu)
 - TEMPLATE (☐ Operating Guide → SCREEN menu)
 - Lens shutter (☐ Operating Guide → Temporarily shutting the screen)
 - SHUTTER TIMER (☐ Operating Guide → OPTION menu)
 - PbvP (☐ Operating Guide → PbvP)
 - <Only for IN5135 and IN5145>
- The following functions are disabled:
 - Executing of AUTO KEYSTONE (☐ Operating Guide → SETUP menu)
 - STANDBY MODE (☐ Operating Guide → SETUP menu)
 - AUTO SEARCH (☐ Operating Guide → OPTION menu)
 - Turning on/off AUTO KEYSTONE (☐ Operating Guide → OPTION menu)
 - DIRECT POWER ON (☐ Operating Guide → OPTION menu)
 - AUTO POWER OFF (☐Operating Guide → OPTION menu)
 - COMMUNICATION TYPE (Q Operating Guide → OPTION menu → SERVICE → COMMUNICATION)
 - SOURCE SKIP (☐ Operating Guide → OPTION menu)
- The input source from the following ports cannot be selected:
 - USB TYPE A, USB TYPE B, LAN
- <Only for IN5135 and IN5145> When the projectors are in the PbyP mode, SUB INPUT SOURCE is set to FOLLOW MAIN UNIT.
- When Intelligent Stack is in use, an error message will be displayed if an error occurs on any of the projectors.



Full dialog

When an error occurs, a full dialog will be displayed on screen. The full dialog changes to a small dialog after about 20 seconds without any key activity. While the small dialog is Small dialog displayed, pressing the ◀ button displays a full dialog again.

The numbers "1" and "2" above the projector icons represent the Main and Sub projectors respectively.

Refer to the on-screen messages as shown below and take the necessary actions to resolve the problem.

3.7 Important information for Intelligent Stack (continued)

Example:

Cover Error: The lamp cover is open.

Lamp Error: The lamp will not light up.

Fan Error: There is a problem with the cooling

fan.

Temp Error: The temperature of the projector is

too high.

Air Flow Error: The temperature of the projector is too high. Verify that the exhaust

vents are not blocked.

Filter Error: The filter timer counter exceeds the hours set in the FILTER MESSAGE menu. (☐ Operating Guide → OPTION menu →

SERVICE)

Cold Error: The temperature around the

projector is too low.















- If you need to turn off a projector in order to fix an error condition, turn off both the projectors so that Intelligent Stack can be started properly when the projectors are turned on again.
- If the PIN LOCK or TRANSITION DETECTOR security function on both projectors is set to ON, both projectors will turn on. Enter the security code for Main first, then the security code for Sub. If ALTERNATE mode is selected, one of the projectors will turn off automatically. (☐ Operating Guide → SECURITY menu)
- If the PIN LOCK or TRANSITION DETECTOR security function on one of the projectors is set to ON, it is necessary to enter the security code as follows when turning on the projector:
 - In DUAL mode, both projectors will turn on. Enter the security code for the projector that is locked by the security function.
 - In ALTERNATE mode, if the projector locked by the security function is due
 to turn on according to the ALTERNATE mode setting, only that projector will
 turn on. Otherwise, both projectors will turn on. Enter the security code for
 the projector that is locked by the security function. After the security lock is
 released, one of the projectors will turn off if both projectors are turned on.

4. Connecting cables

To superimpose two images onto one screen, the same image must be input to the Main and Sub projectors. There are various methods to input the image to the projectors. This chapter describes different ways to connect the cables. Read this chapter to find a method that meets your needs.

NOTE • If Simple Stack without an RS-232 connection is used, the Main and Sub projectors described below do not exist. Main in this chapter refers to one projector and Sub to the other projector.

• For details on input port specifications, refer to Connecting with your devices (☐Operating Guide → Setting up) and Connection to the ports. (☐Operating Guide - Technical)

4.1 Connecting an RS-232 cable

If you are using Intelligent Stack, connect an RS-232 null modem cable between the **CONTROL** ports on the Main and Sub projectors. ($\square 8$) This connection is not required if you are using Simple Stack.

NOTE • If the RS-232 cable becomes disconnected between the two projectors operating in Intelligent Stack mode, the projectors will exit from Intelligent Stack and start to operate individually. Intelligent Stack will not restart even if the cable is reconnected. Follow the procedures below to restart Intelligent Stack:

- (1) After the cable has become disconnected, do not operate the projectors for more than 10 seconds to allow the projectors to recognize the cable disconnection.
- (2) Turn off both projectors and allow them to cool sufficiently.
- (3) Reconnect the two projectors with the RS-232 cable and turn them on again. Intelligent Stack will restart.

4.2 Connecting signal cables

There are two methods to input an image to the Sub projector ($\square 18$, 19):

- Inputting image from the **MONITOR OUT** port on Main to Sub.
- Inputting an image to Sub and Main individually.

Inputting the image from Main to Sub

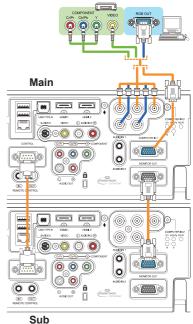
- **1.** Connect the **MONITOR OUT** port on Main to the **COMPUTER IN1** port on Sub with a computer cable.
- **2.** Connect the image output device to one of the input ports on Main.

NOTES for Intelligent Stack

- **COMPUTER IN1** and **IN2** can be used as the input port for the Main projector in Intelligent Stack. Do not use other ports for image input.
- You can input component signals to **COMPUTER IN1** and **IN2**.
- You can input video signals to the Y pin of the component video of COMPUTER IN1 and IN2.

NOTES for Simple Stack

• COMPUTER IN1 and IN2 can be used as the input port for the projector that is connected with a computer cable at its MONITOR OUT port. (☐ Operating Guide → SETUP menu) If you wish to use other input ports, input the image to Sub and Main individually.



Sub

Connection example in Intelligent Stack

Inputting the image to Sub and Main individually

- **1.** Split the output signal from your image device into two with a device such as a signal splitter.
- **2.** Connect the output ports of the image output device to the same input ports on the Main and Sub projectors.

NOTES for Intelligent Stack • LAN, USB TYPE A and USB TYPE B cannot be used as input ports on the Main projector in Intelligent Stack.

NOTES for Simple Stack • Any of the ports that is compatible with the signal can be used. Input the same signal to the two projectors individually.

5. Setting input ports using menu

5.1 Preparing for menu operations

If Simple Stack without an RS-232 connection is used, press the related source button on the remote control or press the projector's **INPUT** button to select the port which has the connected cable. For setting up MONITOR OUT, refer to *SETUP menu* in *Operating Guide*.

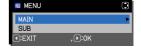
This completes set up.

If Intelligent Stack with the RS-232 connection is used, all settings or modifications related to Intelligent Stack menu operations must be completed using the Main projector. The Main projector functions according to the Intelligent Stack settings

5.2 Checking Main projector's operating status

For Intelligent Stack, all settings or modifications related to menu operations must be completed using the Main projector. Before operating the menu for Intelligent Stack, check if the Main projector is functioning.

- **1.** Press the **MENU** button on the remote control.
- **2.** If the MENU dialog as shown on the right appears on the screen, the two projectors are operating in DUAL mode and the Main projector is operating.



Go to 5.4 Setting the menu. (27)

If the dialog does not appear, LAMP MODE is set to ALTERNATE and either the Main or Sub projector is operating. Go to next.

3. Use the **△**/**▼**/**◄**/**▶** buttons to go into the following menu.

ADVANCED MENU > OPTION

- > SERVICE > COMMUNICATION
- > STACK

STACK menu will appear on screen. (☐Operating Guide → OPTION menu)



- **4.** Check the STACK MODE setting in the STACK menu.
 - If MAIN is displayed, the Main projector is operating. Go to *5.4 Setting the menu*. (**27**)
 - If SUB is displayed, the Main projector is turned off and the Sub projector is operating. Go to 5.3 Starting up Main projector. (□26)

5.3 Starting up Main projector

After completing section 5.2 Checking Main projector's operating status, the two projectors should be set to ALTERNATE mode and the Sub projector should be operating. Because the settings for Intelligent Stack can only be changed when the Main projector is operating, this section explains how to switch from the Sub projector to the Main projector.

1. Use the **△**/**▼**/**⋖**/**▶** buttons to go into the following menu.

ADVANCED MENU > OPTION
> SERVICE > COMMUNICATION > STACK
The STACK menu will appear on screen.
(☐ Operating Guide → OPTION menu)



2. Check the ALTERNATE MODE setting in the menu.

If NORMAL is displayed, the two projectors are turned on alternately. Therefore, the Main projector will be turned on if you restart the projectors.

- (1) Press the **STANDBY** button on the remote control or **STANDBY/ON** button of the Main projector. The Sub projector will turn off.
- (2) After the projector has cooled down, press the **ON** or **STANDBY/ON** button to turn a projector on again. The Main projector will be turn on.

If AUTO is displayed, the projector with the least lamp usage will be turned on. Therefore, the Main projector may not turn on even if you restart the projectors. Follow the procedures below to turn on the Main projector.

- (1) Use the ▲/▼ button to highlight STACK MODE, and press the ▶ button to display the STACK MODE dialog.
- (2) Use the ▲/▼ button to highlight OFF, and then press the ▶ button to save the setting. (□19)
- (3) Repeat the above procedures to display the STACK MODE dialog again.
- (4) Use the ▲/▼ button to highlight SUB, and then press the ▶ button to save the setting. (□19)
- (5) After exiting the menu, wait for 10 seconds or more.
- (6) Press the **STANDBY** button on the remote control or **STANDBY/ON** button of the Main projector. The Sub projector will turn off.
- (7) After the projector has cooled down, press the ON or STANDBY/ON button to turn a projector on again. The Main projector will be turned on even if LAMP MODE has been set to AUTO.
- **3.** Now you can change the settings for Intelligent Stack because the Main projector is operating. Go to *5.4 Setting the menu*. (Q27)

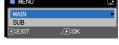
NOTE • If the Main projector cannot be turned on due to an error or other problem, the Sub projector will be turned on even if you follow the procedures above. Take necessary actions to fix the Main projector, and then change the settings for Intelligent Stack.

5.4 Setting the menu

If Intelligent Stack with RS-232 connection is used, observe the following. When inputting image signals to Sub via Main, the operations differ between using computer signals and video signals such as component and video signals.

Inputting image from Main to Sub - Computer signal

1. If the STACK menu is already displayed on the screen, proceed to 3 below. Otherwise press the **MENU** button on the remote control. If the MENU dialog is displayed, use the ▲/▼ buttons to ■ MENU highlight MAIN, and press the ▶ button. A menu will be SUB displayed.



If the MENU dialog is not displayed, the STACK menu will appear.

2. Use the $\triangle/\nabla/\blacktriangleleft/\triangleright$ buttons to go into the following menu. ADVANCED MENU > OPTION > SERVICE > COMMUNICATION > STACK STACK menu will appear on screen. (☐Operating Guide → OPTION menu)



3. Use the ▲/▼ buttons to highlight SUB INPUT SOURCE, and press the ▶ button to display the SUB INPUT SOURCE dialog.



- **4.** Use the **△**/▼ buttons to highlight FIXED (COMPUTER IN 1), and press the **▶** button to save the setting. ($\square 19$)
- **5.** Press any source button on the remote control or the **INPUT** button of the Main projector. The MAIN INPUT SOURCE dialog is displayed on screen. Use the ▲/▼ buttons to highlight the port to which the signal cable is connected, and press the ▶ button to save the setting.



NOTE • When FIXED (COMPUTER IN 1) is selected, the MONITOR OUT setting is invalid. (☐ Operating Guide → SETUP menu)

- When FIXED (COMPUTER IN 1) is selected, you cannot select any input sources besides COMPUTER IN1 and COMPUTER IN2.
- When FIXED (COMPUTER IN 1) is selected and any source button on the remote control or the **INPUT** button on the Main projector is pressed, the dialog for selecting the input source will be displayed.

Inputting image from Main to Sub

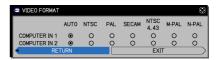
- Video signal (either component or video)
- 1. If the STACK menu is already displayed on the screen, proceed to 3 below. Otherwise press the MENU button on the remote control. If the MENU dialog is displayed, use the ▲/▼ buttons to highlight MAIN, and press the ▶ button. A menu will be displayed. If the MENU dialog is not displayed, the STACK menu will appear.



3. To input component signals to **COMPUTER IN1** or **IN2**, set the port to AUTO. Then, use the ▲/▼/◄/▶ buttons to highlight EXIT and press the ▶ button to save the setting.

To input video signals to **COMPUTER IN1** or **IN2**, set the port to VIDEO. If it is necessary to select a video format, use the $\blacktriangle/\blacktriangledown/\blacktriangleleft/\blacktriangleright$ buttons to highlight RETURN and press the \blacktriangleleft button to display the INPUT menu. Otherwise, use the $\blacktriangle/\blacktriangledown/\blacktriangleleft/\blacktriangleright$ buttons to highlight EXIT and press the \blacktriangleright button to save the setting.

4. Select VIDEO FORMAT in the INPUT menu to display the VIDEO FORMAT dialog.



Select AUTO or an appropriate format for the video signal input.

Then, use the $\triangle/\nabla/\blacktriangleleft/\triangleright$ buttons to highlight EXIT and press the \triangleright button to save the setting.

Inputting image to Sub and Main individually

1. If the STACK menu is already displayed on the screen, proceed to 3 below. Otherwise press the MENU button on the remote control. If the MENU dialog is displayed, use the ▲/▼ buttons to highlight MAIN, and press the ▶ button. A menu will be displayed. If the MENU dialog is not displayed, the STACK menu will appear.

2. Use the $\triangle/\nabla/\triangle/$ buttons to go into the following menu.

ADVANCED MENU > OPTION

> SERVICE > COMMUNICATION > STACK

STACK menu will appear on screen.

(☐ Operating Guide → OPTION menu)



(continued on next page)

5.4 Setting the menu - Inputting image to Sub and Main individually (continued)

- 3. Use the ▲/▼ buttons to highlight SUB INPUT SOURCE, and press the ▶ button to display the SUB INPUT SOURCE dialog.
- **4.** Use the ▲/▼ buttons to highlight FOLLOW MAIN UNIT, and press the ▶ button to save the setting. (□19)
- 5. Press any source button on the remote control or the INPUT button of the Main projector. The MAIN INPUT SOURCE dialog will be displayed on screen. Use the ▲/▼ buttons to highlight the port which has the cable connected to it, and press the ▶ button to save the setting.





NOTE • If FOLLOW MAIN UNIT is selected, selecting the input source on either the Main or Sub projector will automatically set the other projector to the same source.

- If FOLLOW MAIN UNIT is selected, **LAN**, **USB TYPE A** and **USB TYPE B** cannot be selected.
- When FOLLOW MAIN UNIT is selected, if any source button on the remote control or the **INPUT** button on the Main projector is pressed, the dialog for selecting the input source will be displayed.

6. Restrictions on Schedule function

This model supports the Projector Web Control Schedule function. (\square Network Guide \rightarrow 3.1.7 Schedule Settings) There are some restrictions on the functions when Intelligent Stack with an RS-232 connection is used. There are no restrictions when using Simple Stack without an RS-232 connection.

Regardless of whether Intelligent Stack or Simple Stack is used, take note of the Schedule settings before using the Stack function. Unexpected setting changes may occur when using the Stack function.

Refer to the following for Intelligent Stack restrictions. If you are using Simple Stack, skip this chapter.

Restrictions on the Main projector

			LAMP MODE			
			DUAL	ALTERNATE		DUAL/
Functions			DOAL ALIENVAIL			ALTERNATE
	Power	Main	ON	ON	OFF	OFF
	status	Sub	ON	OFF	ON	OFF
Power On			1	1	1	✓
Power Off			1	1	1	✓
Input port ch	nange		✓ *1)	✓ *1)	✓ *1)	✓ *1)
My Image			1	1	X *2)	X *2)
Messenger			1	1	X *2)	X *2)
Slide Show		X *3)	X *3)	X *3)	X *3)	

Restrictions on the Sub projector

			LAMP MODE			
Functions			DUAL	ALTERNATE		DUAL/ ALTERNATE
	Power	Main	ON	ON	OFF	OFF
	status	Sub	ON	OFF	ON	OFF
Power On		X *3	X *3	X *3	X *3	
Power Off		✓	1	1	✓	
Input port change		✓ *1)	✓ *1)	✓ *1)	✓ *1)	
My Image		✓	X *2)	1	X *2)	
Messenger		✓	X *2)	1	X *2)	
Slide Show		X *3)	X *3)	X *3)	X *3)	

^{✓:} This can be scheduled using Projector Web Control and be executed even if the projectors are operating in Intelligent Stack.

(continued on next page)

^{√*1):} This can be scheduled using Projector Web Control even if the projectors

6. Restrictions on Schedule function (continued)

are operating in Intelligent Stack. If the input port can be used in Intelligent Stack, then it can also be scheduled and executed. If not, it will not be executed.

- **X** *2): This can be scheduled using Projector Web Control when the projectors are operating in Intelligent Stack but it will not be executed.
- **X** *3): This cannot be scheduled or executed using Projector Web Control when the projectors are operating in Intelligent Stack.

NOTE • If the Schedule is not executed, an error message will be sent in accordance with the conditions set in the Schedule Execution Error menu of the Projector Web Control. (♠Network Guide → 3.1.6 Alert Settings)

- If the Schedule function is set to turn off the power when the projectors are operating in Intelligent Stack, both the Main and Sub projectors will be turned off.
- If the Schedule function on the Main projector is set to turn on the power, the projectors will be turned on according to the LAMP MODE setting.
- When the two projectors are operating in DUAL mode and a menu is being displayed on one of the projectors, the Schedule function for My Image and Messenger on the other projector will not be executed.
- Power Off in the table refers to turning off the power and entering the standby mode according to the Intelligent Stack settings or by pressing the **STANDBY** button on the remote control or the Main projector's **STANDBY/ON** button.
- The projectors cannot be turned on by the Schedule function on the Sub projector. Scheduling power on times must be set up on the Main projector if needed.
- When the Sub projector is turned off according to the ALTERNATE MODE setting, the Schedule function on the Sub projector to turn off its power will be executed without error.

7. Troubleshooting

Before assuming that the projector needs repair, review the following trouble-shooting tips:

Problems can be easily mistaken for machine defects

Situation	Troubleshooting tips	Reference page
Intelligent Stack does not function.	No power is supplied to the Main and Sub projectors. To use the Intelligent Stack feature, supply AC power to both the Main and Sub projectors. If AC power is supplied to only one of the projectors, Intelligent Stack will be disabled.	in User's Manual (concise)
	The RS-232 cable between the Main and Sub projectors is not properly connected. To use the Intelligent Stack feature, connect an RS-232 null modem cable between the Main and Sub projectors. If the cable is not connected properly, the Main projector cannot control the Sub projector.	4 8
	The menu settings for Intelligent Stack are not set up correctly. Check the STACK menu settings on both the Main and Sub projectors. To use the Intelligent Stack feature, one projector must be set to Main and the other projector must be set to Sub.	4 14
	Signal cables are not connected correctly. Check the cable connections. Also check that the cable connection matches the port settings in the menu.	10 - 14 in Operating Guide
The Main and Sub projector do not operate in synchronization.	The RS-232 cable between the Main and Sub projectors is not properly connected. Connect the RS-232 cable properly and restart the Main projector.	48

(continued on next page)

7. Troubleshooting (continued)

Situation	Troubleshooting tips	Reference page
The STACK menu is not functioning.	The projectors are not set up for the Intelligent Stack feature. Check the following settings on the Main and Sub projectors STANDBY MODE in SETUP menu: NORMAL - COMMUNICATION TYPE under COMMUNICATION in SERVICE menu: OFF - STACK LOCK in SECURITY menu: OFF	\$\tag{5}
The projector does not respond to the remote control.	The remote control is pointed at the Sub projector. When operating in Intelligent Stack, only the Main projector is capable of receiving remote control signals. Therefore, point the remote at the Main projector.	1 3
The images are either out of focus or not well-superimposed.	The two images are not superimposed correctly. Use the ZOOM, FOCUS and LENS SHIFT features to fine tune the superimposed images. If needed, adjust PERFECT FIT and KEYSTONE as well.	4 6
The images from the two projectors do not superimpose properly even after finely adjusting the image.	The two images are adjusted differently. Try these steps: - Press the AUTO button on the remote control or execute AUTO ADJUST EXECUTE on each of the projectors. - Adjust H POSITION and V POSITION on each of the projectors. - Check the RESOLUTION setting in the INPUT menu, and change the setting to match if the setting differs between Main and Sub.	in Operating Guide 48 in Operating Guide 53 in Operating Guide

If you require more information on Instant Stack, please consult your dealer.