**NEC**

# Wireless LAN Unit Installation Guide

# Model: NP02LM

NEC Display Solutions, Ltd. 2010

FCC Compliance

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- 		Reorient or relocate the receiving antenna.
- 		Increase the separation between the equipment and receiver.
- 		Connect the equipment into an outlet on a circuit different from that
 	to which the receiver is connected.
- 		Consult the dealer or an experienced radio/TV technician for help.

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

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.


IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.


IMPORTANT NOTE:

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.
 "To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

**Industry Canada Statement**

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:
1) this device may not cause interference and
2) this device must accept any interference, including interference that may cause undesired operation of the device

**以下警語適用台灣地區：**

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

# Table of Contents

# 1. Introduction

Thank you purchasing the Wireless LAN Unit NP02LM series (Wireless LAN Unit).
Set the Wireless LAN Unit in the NEC Projector (described below) for use.
Refer to the user's manual that comes with the projector for installation or removal procedures and for how to set the wireless LAN.

● Parts Included
・Wireless LAN Unit ........................ 1
・Important Information (this document) ........ 1

● Supported Projector
Wireless LAN Unit supports the following NEC projector.

NP-M350X

NP02LM Series offers performance comparable to an Ethernet Local Area Network (LAN) system, without the limitations of network cables. It allows you to connect your computer to a Local Area Network from anywhere within the wireless coverage area. It also enables you to roam throughout the network while remaining connected to the LAN.

# 2. Connecting to a Wireless LAN

The Wireless LAN Unit also provides a wireless LAN connection. To use a wireless LAN connection, you are required to assign an IP address to the projector.

Important:
• If you use the projector with the USB Wireless LAN Unit in the area where the use of wireless LAN equipment is prohibited, remove the USB Wireless LAN Unit from the projector. (→ page 143)
• Buy the appropriate USB Wireless LAN Unit for your country or area.

NOTE:
· The green LED on the USB Wireless LAN Unit flashes to show that the USB Wireless LAN Unit is working.
· Your computer's wireless LAN adapter (or unit) must be complied with Wi-Fi (IEEE802.11b/g/n) standard.

Flow of Setting Wireless LAN

Step 1: Connect the computer to the projector via wired LAN. (→ page xx) Use the computer's browser to display the projector's HTTP server. (→ page xx)
Step 2: Attach the USB Wireless LAN Unit to the projector. (→ page xx)
Step 3: Use an HTTP server to set the wireless LAN. (→ page xx) Access the HTTP server function to set [NETWORK SETTINGS] → [SETTINGS] → [WIRELESS] → [EASY CONNECTION] , [PROFILE1] or [PROFILE2].

NOTE:
· To use the HTTP server function, the projector must be connected to a network. First use the wired LAN to connect the projector to a network and then use the HTTP server to set the wireless LAN.
· After setting the wireless LAN by using the HTTP server, set [NETWORK SETTINGS] → [SETTINGS] → [WIRED] → [DISABLE]

When switching to set on the projector after connecting to the wireless LAN:
Use the menu to set the wireless LAN connection for the projector. (→ page xx)
Select [DISABLE], [EASY CONNECTION] , [PROFILE1] or [PROFILE2] you set from the HTTP server.

Attaching the USB Wireless LAN Unit
NOTE:
· The USB Wireless LAN Unit must be inserted into the USB Wireless LAN Unit port in the correct direction. It cannot be inserted in the reverse direction. If the USB Wireless LAN Unit is inserted in the reverse direction with excessive force applied, the USB port may break.
• Before touching the USB Wireless LAN Unit, touch a metallic object (such as a door knob or aluminum window frame) to discharge the static electricity from your body.
• Always insert or remove the USB Wireless LAN unit when the main power is turned off. Failure to do so may cause projector malfunction or damage to the USB wireless LAN unit. If the projector will not work correctly, turn off the projector, disconnect the power cord, and then connect it again.
• Do not insert other USB devices into the USB Wireless LAN unit port. Do not insert the USB Wireless LAN unit into the USB (PC) port (Type B).

Prepare a Phillips screw driver beforehand.

1. Press the POWER button to turn off the projector and set it into standby condition, and disconnect the power cord.

2. Remove the USB (LAN) port cover. Loosen the screw securing the port cover. • The screw is not removable.
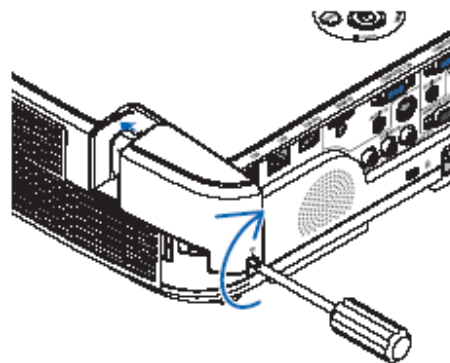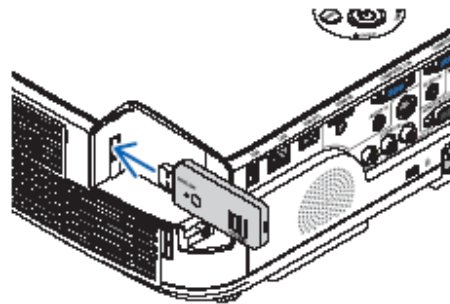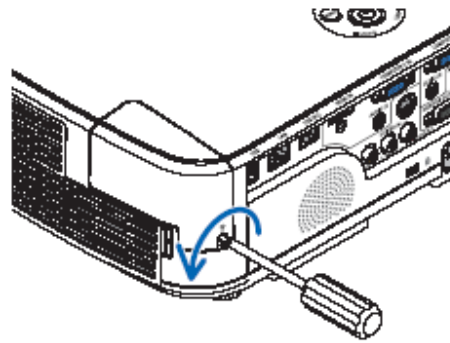
3. Slowly insert the USB Wireless LAN Unit into the USB (LAN) port. Remove the cap from the USB Wireless LAN Unit, and then insert it with the surface (side of indicator) facing outward. Keep the cap for later use.NOTE: Do not force to insert the USB Wireless LAN Unit.

4. Put the USB (LAN) port cover back into place. Insert the catch of the USB (LAN) port cover into the groove of the projector cabinet, and then tighten the screw to secure the port cover.
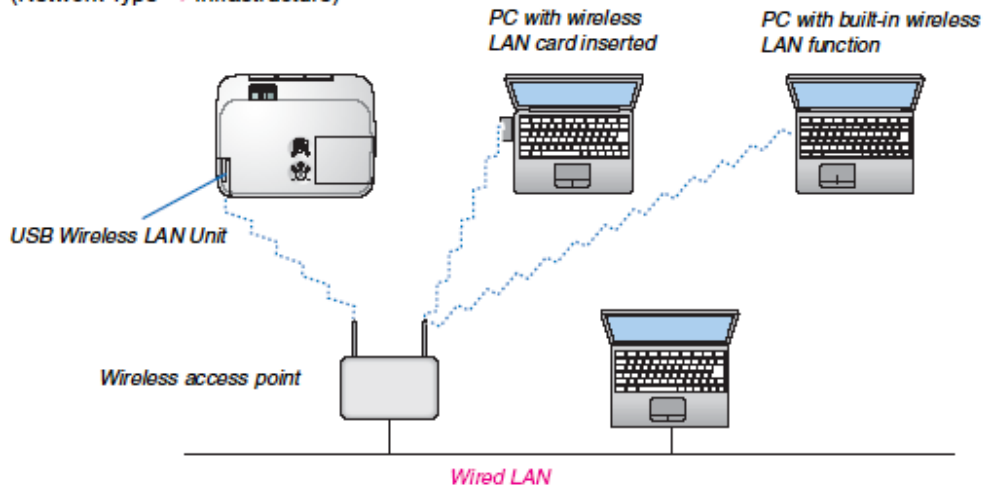
To remove the USB Wireless LAN Unit, disconnect the power cord and use the above procedure.

NOTE:
• The green LED on the USB Wireless LAN Unit flashes to show that Wireless LAN Unit is working. If the USB Wireless LAN Unit is incorrectly attached, the blue LED will not flash.
• Do not press the button on the USB Wireless LAN Unit. The button will not work with this model.

Example of wireless LAN connection
(Network Type → Infrastructure)

PC with wireless
LAN card inserted

PC with built-in wireless
LAN function

USB Wireless LAN Unit

Wireless access point

Wired LAN

Use the HTTP server function to make the settings.

Example of wireless LAN connection (Network Type → Ad Hoc)

USB Wireless LAN Unit

PC with wireless
LAN card inserted

PC with built-in wireless
LAN function
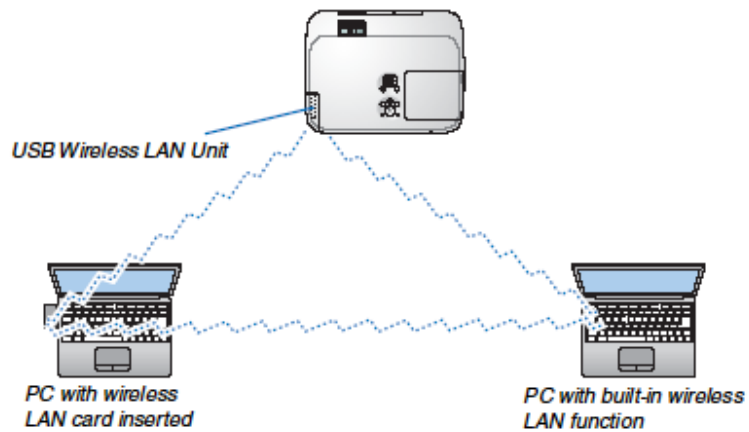
To enable direct communication (i.e., peer-to-peer) between personal computers and projectors, you need to select the Ad Hoc mode.

Use the HTTP server function to make the settings.

# NETWORK SETTINGS of Wireless LAN Unit

## NETWORK SETTINGS

### • SETTINGS

**WIRED or WIRELESS**

| SETTING | Set for wired LAN or for wireless LAN. |
|---|---|
| APPLY | Apply your settings to wired LAN or wireless LAN. |
| DHCP ON | Automatically assign IP address, subnet mask, and gateway to the projector from your DHCP server. |
| DHCP OFF | Set IP address, subnet mask, and gateway to the projector assigned by your network administrator. |
| IP ADDRESS | Set your IP address of the network connected to the projector. |
| SUBNET MASK | Set your subnet mask number of the network connected to the projector. |
| GATEWAY | Set the default gateway of the network connected to the projector. |
| AUTO DNS ON | DHCP server will automatically assign IP address of DNS server connected to the projector. |
| AUTO DNS OFF | Set your IP address of DNS server connected to the projector. |

**Setting for WIRELESS LAN (with the optional USB Wireless LAN Unit equipped)**

| EASY CONNECTION | Execute a wireless LAN using EASY CONNECTION. |
|---|---|
| CHANNEL | Select a channel. Available channels vary depending on the country and region. When you select [INFRASTRUCTURE], make sure that the projector and your access point are on the same channel; when you select [AD HOC], make sure that the projector and your computer are on the same channel. |
| PROFILE 1/PROFILE 2 | Two settings can be set for wireless LAN connection. Select PROFILE 1 or PROFILE 2. |
| SSID | Enter an identifier (SSID) for wireless LAN. Communication can be done only with equipment whose SSID matches SSID for your wireless LAN. |
| SITE SURVEY | Displays a list of available SSIDs for wireless LAN on site. Select an SSID which you can access. |
| NETWORK TYPE | Select communication method when using wireless LAN.<br>INFRASTRUCTURE: Select this option when communicating with one or more equipment connected to the wireless LAN network via a wireless access point.<br>AD HOC: Select this option when using the wireless LAN to directly communicate with a computer in peer-to-peer mode. |

| SECURITY TYPE | Turn on or off the encryption mode for secure transmission. When turn on the encryption mode, set WEP key or encrypted key. | | |
|---|---|---|---|
| | DISABLE | Will not turn on the encryption feature. Your communications may be monitored by someone. | |
| | WEP 64 bit | Uses 64-bit datalength for secure transmission. | |
| | WEP 128 bit | Uses 128-bit datalength for secure transmission. This option will increase privacy and security when compared to use of 64-bit datalength encryption. | |
| | WPA PSK-TKIP/ WPA PSK-AES/ WPA2 PSK-TKIP/ WPA2 PSK-AES | These options provide stronger security than WEP. | |
| | *NOTE:* <br> • *The WEP settings must be the same as communication devices such as PC or access point in your wireless network.* <br> • *When you use WEP, your image transmission speed will slow down.* <br> • *[WPA PSK-TKIP], [WPA PSK-AES], [WPA2 PSK-TKIP] and [WPA2 PSK-AES] are not available when [AD HOC] is selected from [NETWORK TYPE].* | | |
| INDEX | Select encryption key when selecting [WEP 64 bit] or [WEP 128 bit] in [SECURITY TYPE]. | | |
| KEY | When selecting [WEP 64 bit] or [WEP 128 bit] in [SECURITY TYPE]: <br> Enter WEP key. | | |
| | Select | Characters (ASCII) | Hexadecimal digit (HEX) |
| | WEP 64 bit | Up to 5 characters | Up to 10 characters |
| | WEP 128 bit | Up to 13 characters | Up to 26 characters |
| | When selecting [WPA PSK-TKIP], [WPA PSK-AES], [WPA2 PSK-TKIP] or [WPA2 PSK-AES]: <br> Enter encryption key. Key length must be 8 or greater and 63 or less. | | |

## • ALERT MAIL

| ALERT MAIL (English only) | This option will notify your computer of lamp replace time or error messages via e-mail when using wireless or wired LAN. <br> Placing a checkmark will turn on the Alert Mail feature. <br> Clearing a checkmark will turn off the Alert Mail feature. <br> Sample of a message to be sent from the projector: <br>     The lamp and filters are at the end of its usable life. Please replace the lamp and filters. <br>     Projector Name: NEC Projector <br>     Lamp Hours Used: 100 [H] |
|---|---|
| SENDER'S ADDRESS | Enter sender's address. |
| SMTP SERVER NAME | Enter the SMTP server name to be connected to the projector. |
| RECIPIENT'S ADDRESS 1,2,3 | Enter your recipient's address. Up to three addresses can be entered. |
| TEST MAIL | Send a test mail to check whether your settings are correct or not <br> *NOTE:* <br> • *If you execute a test, you may not receive an Alert mail. Should this happen, check if network settings are correct.* <br> • *If you entered an incorrect address in a test, you may not receive an Alert mail. Should this happen, check if the Recipient's Address is correct.* |
| SAVE | Click this button to reflect the above settings. |

Setting up the Projector for a Wireless LAN Connection (with the Wireless LAN Unit equipped) [WIRLESS LAN]



**Important**
- Consult with your network administrator about these settings.
- When using a wireless LAN connection, attach the optional USB Wireless LAN to the projector. (→ page xx)

| [PROFILE] | [DISABLE] | Wireless LAN connection will be turned off |
|---|---|---|
| | [EASY CONNECTION] | Select [EASY CONNECTION] to execute a wireless LAN easily using Image Express Utility Lite on the supplied NEC Projector CD-ROM. |
| | [PROFILE 1] | Up to two settings for the USB wireless LAN unit can be stored in memory of the projector. (→ page xx) |
| | [PROFILE 2] | To recall the settings from memory, select [PROFILE 1] or [PROFILE 2] from [PROFILE]. |
| [RECONNECT] | | Retry to connect the projector to a network. Try this if you have changed [PROFILE]. |

NOTE: After selecting [EASY CONNECTION] from [PROFILE], you cannot make settings to [DHCP], [IP ADDRESS], [SUBNET MASK], [GATEWAY], and [AUTO DNS] except [CHANNEL].

# Hints on How to Set Up LAN Connection

To set up the projector for a LAN connection:Access the HTTP server function to display the web browser (→ page xx) and select [NETWORK SETTINGS] → [SETTINGS] → [WIRELESS LAN] → [PROFILE 1] or [PROFILE 2].Two settings can be set for the USB Wireless LAN Unit.Next select [SETTINGS] for your selected profile, and set [ENABLE] or [DISABLE] for [DHCP], [IP ADDRESS], [SUBNET MASK], and [GATEWAY]. Last click [SAVE]. To reflect changes, click the [SETTING] tab and then click [APPLY]. (→ page xx)

To recall LAN settings stored in the profile number:Use [PROFILE 1] or [PROFILE 2] set on the HTTP server, from the projector' menu, select [SETUP] → [WIRELESS LAN] → [PROFILE] → [PROFILE 1] or [PROFILE 2]. Last select [OK] and press the ENTER button. (→ page xx)

To connect a DHCP server:From the projector menu, select [SETUP] → [WIRED LAN] → [SETTINGS] → [DHCP] → [ON] and press the ENTER button. To specify IP address without using the DHCP server, use the HTTP server function. (→ page xx)

To set only for wireless LAN (NETWORK TYPE and WEP/WPA):Access the HTTP server function

to display the web browser (→ page xx) and select [NETWORK SETTINGS] → [SETTINGS] → [WIRELESS LAN] → [PROFILE 1] or [PROFILE 2].Make necessary settings for [SETTINGS] and click [SAVE].From the projector menu, select [SETUP] → [WIRELESS LAN] → [PROFILE] → [PROFILE 1] or [PROFILE 2].

To select an SSID:Access the HTTP server function to display the web browser (→ page xx) and select [NETWORK SETTINGS] → [SETTINGS] → [WIRELESS LAN] → [CONNECTION] → [SITE SURVEY] and select the ID.If you do not use [SITE SURVEY], type the SSID in [CONNECTION] and select [INFRASTRUCTURE] or [AD HOC]. (→ page xx)

To receive lamp replacement time or error messages via e-mail:Access the HTTP server function to display the web browser (→ page xx) and select [NETWORK SETTINGS] → [ALERT MAIL], and set [SENDER'S ADDRESS], [SMTP SERVER NAME], and [RECIPIENT'S ADDRESS]. Last, click [SAVE]. (→ page xx)

To execute [EASY CONNECTION] using Image Express Utility Lite:The [EASY CONNECTION] is a mode that can abbreviate the troublesome LAN settings when using the Image Express Utility Lite and connecting the PC and projector via a wireless LAN.The Image Express Utility LIte is contained on the supplied NEC Projector CD-ROM.

To use [EASY CONNECTION], access the HTTP server function to display the web browser (→ page xx) and select [NETWORK SETTINGS] → [SETTINGS] → [WIRELESS LAN] → [EASY CONNECTION]. Next select [SETTINGS] → [CHANNEL]. Last click [SAVE].From the projector menu, select [SETUP] → [WIRELESS LAN] → [PROFILE] → [EASY CONNECTION].