Operation/Reference Guide

NXB-CCG

NetLinx® Clear Connect™ Gateway

Lighting Controls

Last Updated: 12/2/2013

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All products returned to AMX require a Return Material Authorization (RMA) number. The RMA number is obtained from the AMX RMA Department. The RMA number must be clearly marked on the outside of each box. The RMA is valid for a 30-day period. After the 30-day period the RMA will be cancelled. Any shipments received not consistent with the RMA, or after the RMA is cancelled, will be refused. AMX is not responsible for products returned without a valid RMA number.

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Table of Contents

NXB-CCG NetLinx ClearConnect Gateway

Overview

The NXB-CCG NetLinx® Clear Connect™ Gateway (**FG2606**) connects AMX NetLinx Controllers with Lutron's Clear Connect Dimmers, Switches, Occupancy/Vacancy Sensors and Keypads. The Gateway includes a web interface for simplified integration, configuration, and programming of Clear Connect devices. When integrated with an AMX NetLinx Controller, installers now have a simple and cost-effective path to offer smart room automation that includes light and AV control from a single interface, occupancy sensing, scheduled shutdown, and energy management.

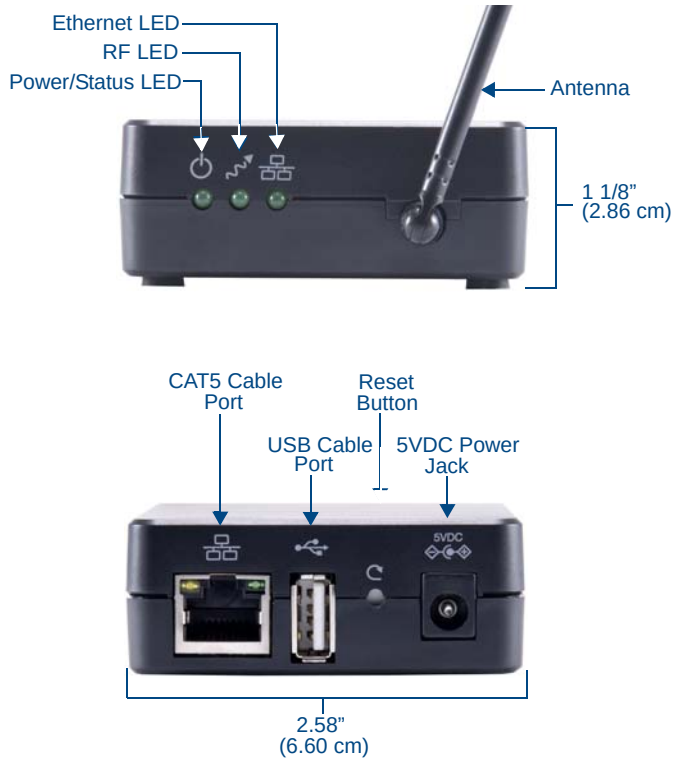

FIG. 1 NXB-CCG ClearConnect Wireless Gateway

Common Applications

The NXB-CCG is ideal for new and retrofit applications looking for the least costly way to add light and AV control to a room. The NXB-CCG is designed to interface with Lutron's Clear Connect Dimmers, Switches, Keypads, and/or Occupancy/Vacancy Sensors.

Features

- **Clear Connect Enabled** – Lutron's patented RF Technology uses a quiet band that is essentially free of interference, ensuring reliable communication between system devices.
- **Perfect Way to Add Light Control** – Easily integrates with existing electrical infrastructures – simply replace the light switch.
- **Create Light & Control Events with Room Occupancy** – Use the Clear Connect Wireless Occupancy Sensor with RMS to automatically power-up and shut-down the lights and AV equipment to maximize energy conservation.
- **Simple Web Configuration** – Browse to the NetLinx Clear Connect Gateway URL to quickly add Clear Connect Enabled Switches, Dimmers, Keypads and Occupancy/Vacancy Sensors.

Product Specifications

NXB-CCG Specifications	
Power Requirements:	• **Power Consumption:** 600mA @ 5VDC, DC adapter included (5V DC, 2A). • **Surge Protection:** To withstand surge voltages without damage or loss of operation, in accordance with IEEE C62.41-1991 Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits. • **Power Failure Memory:** If power is interrupted, the NXB-CCG will return to its previous state when power is restored.
Front Panel Components:	
Power/Status LED:	Displays power status and other system status indicators.
RF LED:	Displays the Tx / Rx activity on the RF link.
Ethernet LED:	Displays the connection status and Tx / Rx activity on the Ethernet link.
Rear Panel Components:	
CAT5 Cable Port:	Maximum cable length: 328 ft (100 m).
USB Cable Port:	Manufacturer use only.
Reset Button:	Press and hold for 30 seconds to restore the system to the Factory Default settings.
Power Jack (to DC adapter)	(IEC PELV / NECR Class 2).
Operating Environment:	• 32 °F to 104 °F (0 °C to 40 °C), 0% to 90% humidity, non-condensing. • Indoor use only.
ESD Protection:	ESD protection to withstand electrostatic discharge without damage or memory loss, in accordance with IEC 61000-4-2.
Communications:	• The NXB-CCG communicates to other Clear Connect devices through RF. • All devices (except wired accessory dimmers/switches) must be located within 30 feet (9 m) of the NXB-CCG. • The NXB-CCG network can control up to 31 devices (30 devices and the NXB-CCG gateway).
Auto Discovery:	Supports the ZeroConf auto discovery protocol.
Dimensions (HWD):	• Without antenna: 1 1/8” x 2 5/8” x 4 7/16” (2.86 cm x 6.60 cm x 11.23 cm) • With antenna: 6 1/2” x 2 5/8” x 4 7/16” (17.15 cm x 6.60 mm x 112.27 mm)
Weight:	0.3 lbs (136.08 g)
Certifications:	• FCC FCC Title 47 Part 15 Subpart B and C • IC • cULus UL 60950-1
Included Accessories:	• 5VDC Adapter (**WA-10J05FU**) • CAT5 Suppression Ferrite

NXB-CCG Specifications (Cont.)	
Other AMX Equipment:	• CCD-F6AN-DV-WH, Clear Connect 6A Fluorescent Dimmer (**FG2606-12-WH**) • CCD-RD-WH, Clear Connect 120V Accessory Dimmer (**FG2606-31-WH**) • CCD-RS-WH, Clear Connect 120V Accessory Switch (**FG2606-32-WH**) • CCD-RS-277-WH, Clear Connect 277V Accessory Switch (**FG2606-33-WH**) • CCD-VCRB-P-WH, Clear Connect Radio Powr SavrTM Ceiling Mount Vacancy Sensor - CA. Only (**FG2606-42-WH**) • CCD-6NA-WH Clear Connect Phase Adaptive Dimmer (**FG2606-13-WH**) • CCD-15APS-1-WH, Clear Connect Switching Plug in Device - 15 A Softswitch (**FG2606-51-WH**) • CCD-W6BRL-WH, Clear Connect Wall Keypad - 6 button with Raise/Lower (**FG2606-61-WH**) • CCD-6D-WH, Clear Connect 600W Incandescent/MLV Dimmer (**FG2606-11-WH**) • CCD-8S-WH, Clear Connect 120/277V Switch (**FG2606-21-WH**) • CCD-OCRB-P-WH, Clear Connect Radio Powr SavrTM Ceiling Mount Occupancy/Vacancy Sensor (**FG2606-41-WH**)

FCC/ IC Information

This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). 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. Modifications not expressly approved by Lutron Electronics Co., Inc. could void the user's authority to operate this equipment.

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

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

Proper orientation of the antenna helps ensure maximum range and the best performance. The NXB-CCG should be positioned centrally to the devices being controlled, and as high and clear of obstructions as possible. The NXB-CCG utilizes an omni-directional antenna, which produces a circular pattern perpendicular to the antenna. For best performance, the antenna should be positioned vertically (tip up or down, not sideways). Try to keep the antenna at least 2 feet from metallic objects.

Installation

Important Notes

Codes

Install in accordance with all local and national electrical codes.

Cleaning

To clean, wipe with a clean damp cloth. DO NOT use any chemical cleaning solutions.

DC Adapter Power

WARNING

*Using a DC adapter not rated at the proper specifications could damage the NXB-CCG and possibly overheat the DC adapter. Use only the Lutron 5VDC Adapter (**WA-10J05FU**) included with the device.*

RF Device Placement

All dimmers, switches, keypads and shades / draperies must be located within 30 ft (9 m) of the NXB-CCG (FIG. 2).

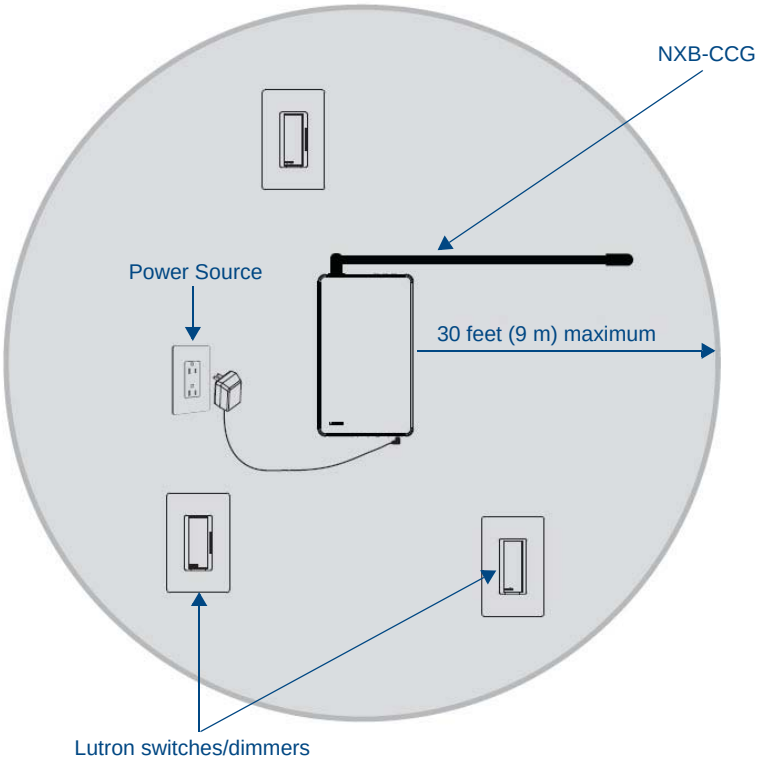

FIG. 2 RF Configuration

NOTE

Proper orientation of the antenna helps ensure maximum range and the best performance. The NXB-CCG should be positioned centrally to the devices being controlled, and as high and clear of obstructions as possible. The NXB-CCG utilizes an omni-directional antenna, which produces a circular pattern perpendicular to the antenna. For best performance, the antenna should be positioned vertically (tip up or down, not sideways). Try to keep the antenna at least 2 feet from metallic objects.

Installation

1. Find a suitable location for the NXB-CCG.
2. Mount vertically (FIG. 3) or horizontally (FIG. 4), using two #6 (M3) screws (FIG. 5). When mounting, allow 7 in (177.8 mm) clearance for the antenna and ensure convenient access to the power plug. In order to achieve proper RF performance, do not mount unit in a metal enclosure.

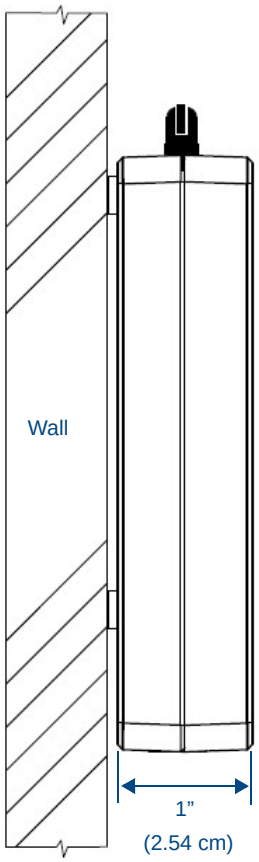

FIG. 3 NXB-CCG - Vertical Installation

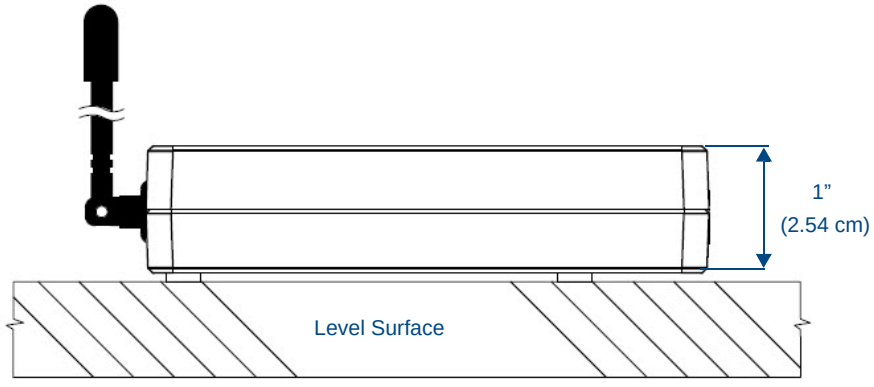

FIG. 4 NXB-CCG - Horizontal Installation

3. Attach the DC adapter cord to the power jack on the NXB-CCG and insert the DC adapter plug into a receptacle (FIG. 2).

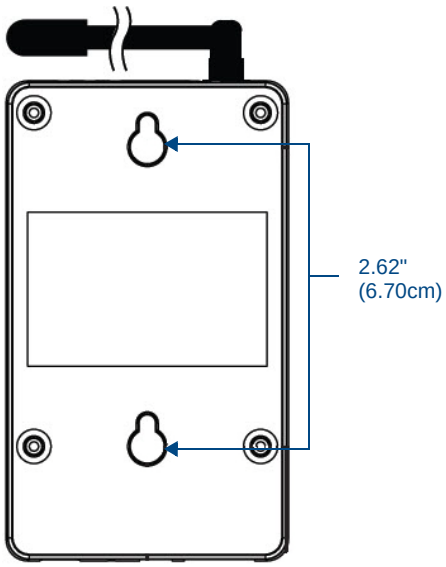

FIG. 5 Underside of NXB-CCG

4. Use CAT5 Ethernet cable to connect the NXB-CCG to the chosen network's Master. Please refer to the Ethernet Pin Numbering diagram (FIG. 7) for the correct connection.
5. Clip the included CAT5 Suppression Ferrite around the Ethernet cable (FIG. 6), 2 to 3 inches (51-76 mm) from the NXB-CCG's Ethernet port.

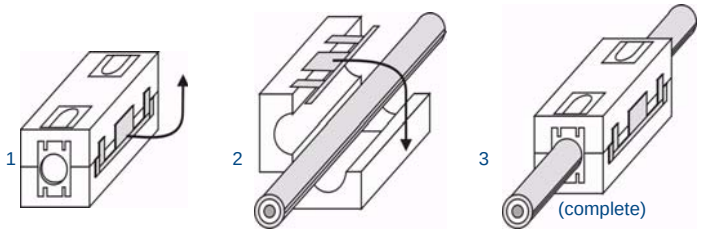

FIG. 6 Installing the CAT5 Suppression Ferrite

NOTE

If the ferrite slips on the Ethernet cable, such as in a vertical installation, electrical or duct tape may be wrapped around the cable to keep the ferrite in place.

Ethernet Pin Numbering

The numbering for pins in the Ethernet port is as follows:

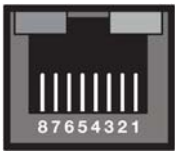

FIG. 7 Ethernet Pin Numbering

Ethernet Pin Numbering	
Ethernet:	Pin #:
T+Ve	1
T-Ve	2
R+Ve	3
R-Ve	6

Returning an NXB-CCG to Factory Default Settings

NOTE

Returning an NXB-CCG to factory default settings will erase all programming from it and all system devices and will require all Clear Connect devices to be reprogrammed into the system

1. Press and hold the **Reset** button (FIG. 1) on the device for 20 seconds.
2. The Power/Status LED will start flashing slowly for approximately10 seconds, after which it will start rapidly flashing for approximately 20 seconds and then remain on.
3. The device has been returned to its factory default settings.

NOTE

Returning the NXB-CCG to its factory default settings does not do the same for any connected Lutron Clear Connect devices. They may have to be returned to factory defaults separately before being reattached to the NXB-CCG's network.

Connecting To the NXB-CCG

Automatic Detection

The NXB-CCG supports mDNS or ZeroConfig. This allows the device to be automatically detected on a network with a ZeroConfig-capable browser or Apple's Bonjour plug-in. The Safari web browser has a Bonjour browser built into it in the Bookmarks window.

NOTE

The Bonjour plug-in is not available in the mobile version of Safari.

ZeroConfig in Safari

To use the Safari browser:

1. Click the *Bookmarks* icon in the top left corner.
2. Click "Bonjour" in the collections list.
3. Select the icon that corresponds to the host name of the NXB-CCG or select it from the bookmark list (FIG. 8).

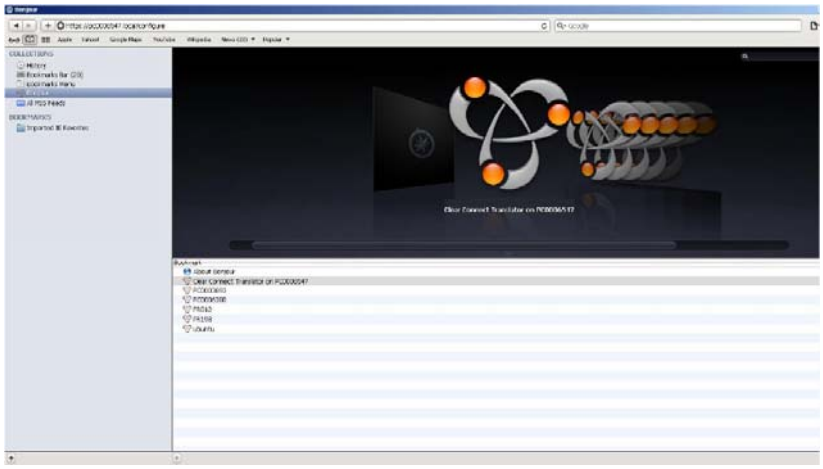

FIG. 8 Bonjour browser layout

ZeroConfig in Other Browsers

Some standalone ZeroConfig browsers exist that vary in their feature set. Most of them will allow you to discover the devices on the network and find the IP addresses. The NXB-CCG will, by default, have the host name "NXB-CCG-", followed by the serial number of the device.

Other browsers have plug-ins that can be downloaded and installed for use in autodetecting the NXB-CCG via the ZeroConfig protocol.

ZeroConfig in NetLinx Studio

Netlinx Studio has a built in ZeroConfig browser to find the NXB-CCG and display its web page interface. NetLinx Studio is available at **www.amx.com**.

Troubleshooting

If you should have issues with installing an NXB-CCG or with setting up a network, consider the following options:

- Ensure power is connected to the NXB-CCG
- Ensure a network connection is made between the NXB-CCG and a router/PC
- Factory default the NXB-CCG
- Place a router between the NXB-CCG and the controlling PC
- Refresh the NXB-CCG web page
- Cycle power to the NXB-CCG
- Ensure power is connected to all devices being programmed in the system
- Ensure recommended device spacing, with a maximum of 30 feet (9.14 meters) between devices, and a minimum of 10 feet (3.05 meters) between NXB-CCGs.

Web Interface Pages

Overview

The NXB-CCG feature a built-in zero-configuration networking client that allows you to determine the unit's IP address via NetLinx Studio v3.0 (or higher), or a similar zero-configuration client or browser. Entering the device's IP address in an enabled browser (Mozilla Firefox and Apple Safari for PCs and Firefox and Safari for Macintoshes) allows the device to be accessed in that browser. Once contact is established, and a username and password entered, the Web interface pages may be reached and updated.

Zero-configuration (or Zero-Config) technology provides a general method to discover services on a local area network. In essence, it allows you to set up a network without any configuration.

NOTE

This product contains licensed software; see the SOFTWARE NOTICES AND LICENSES link on the Web interface login screen for software notices and license information.

Accessing the Web Interface Pages

The NXB-CCG uses Web-based interface pages that can be accessed through most Web browsers. Enter the device's IP address (obtainable either through a ZeroConf-enabled browser or through NetLinx Studio) to access the *Login* page (FIG. 9).

FIG. 9 Login page

Login Page	
Username:	Enter the username (default: **admin**).
Password:	Enter the password for the device (default: **1988**).
Licenses and Software Notices:	Click this link to view the current software license and notices concerning the software version.

To access the Web Interface pages:

1. From any computer or Netbook that has access to the LAN on which the NXB-CCG resides, open a web browser and type the IP address of the target NXB-CCG unit in the Address Bar.
2. In the *Login* page, enter your username and password.

NOTE

*The default username and password are **admin** and **1988**.*

For reference, the top right corner of the screen displays the version of the software currently running on the NXB-CCG.

The Web Interface Pages are available via *http* or *https*. The *http* page will be enabled by default and will be the default page upon first logging in. If desired, you can change the URL to *https* to access the secure web page. You can also disable the *http* page completely in the *Settings* page (page 12)

Configure Page

Once logged in, the Web interface defaults to the *Settings* tab of the *Configure* page. From here, the administrator may access other tabs and pages to add or change Web and integration logins and passwords, change network or security settings, add devices to a network, or control the programming of buttons on an individual device.

Settings Tab

The NXB-CCG's network settings can be modified via the *Settings* tab of the *Configure* page (FIG. 10).

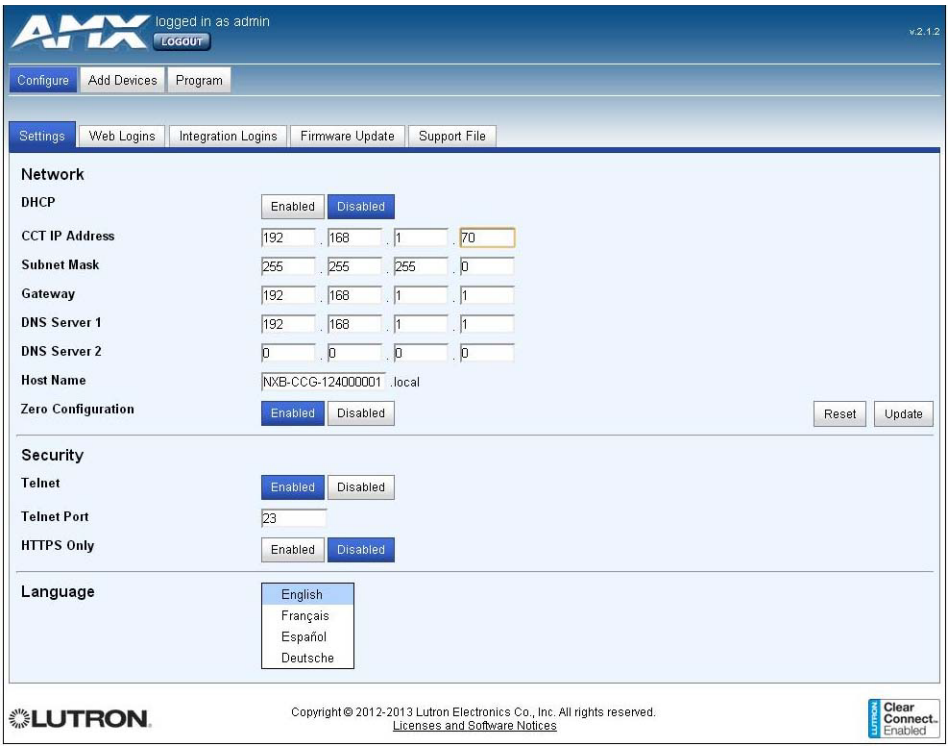

FIG. 10 Configure - Settings tab

Settings Tab	
Network Settings:	
DHCP:	Allows enabling or disabling of DHCP functionality.When Disabled, the other Network Settings entries are editable.
CCT IP Address:	Displays the IP address of the device.
Subnet Mask:	Displays the device's subnet mask.
Gateway:	Displays the device's gateway address.
DNS Server 1:	Displays the device's main DNS server address.
DNS Server 2:	Displays the devices optional secondary DNS server address.
Host Name:	Displays the device's host name on the network.
Zero Configuration:	Allows enabling or disabling of ZeroConfig functionality.
Security Settings:	
Telnet:	Enables or disables Telnet functionality.
Telnet Port:	Displays the device's Telnet port.
HTTPS Only:	Enables or disables the ability of the device to be accessed solely through a secure page.
Language:	Allows the interface to be switched between one of four languages: English, French, Spanish, and German.

Settings Tab (Cont.)	
Reset:	Click this button to return the page to its previous settings without saving any changes.
Update:	Click this button to save and update all changes.

From the *Settings* tab, DHCP functionality may be enabled or disabled. When DHCP is disabled, the IP address, subnet mask, gateway, and two DNS servers can be set manually. The DNS name may also be set at this time.

In the *Network Settings* section, ZeroConfig autodetection may also be disabled, but this is not recommended.

For security purposes, the raw integration port can be disabled or changed via the **Telnet enable/disable** buttons and the *Telnet port* field.

Using the *HTTPS Only* buttons, the non-encrypted HTTP page may be enabled or disabled. If this is enabled, this forces users to connect to the device through the encrypted HTTPS page only.

Language Settings

Using the *Language* section of the *Settings* tab, the Web Interface pages' language may be changed to one of four options. English is the default interface language, but the Web Interface pages may be changed to French, Spanish, or German.To change the Web Interface pages to a new language:

1. From the *Language* section, click on the language you wish to use. This enables the **Change Language** button (FIG. 11).

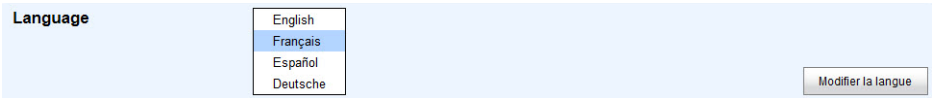

FIG. 11 Language section and Change Language button

2. Click on the **Change Language** button to switch the Web Interface language. This may take several seconds (FIG. 12).FIG. 13

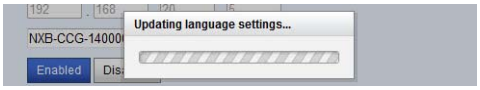

FIG. 12 Updating Language Settings

3. The Web Interface pages will now display information in the chosen language (FIG. 13). You may switch back to any of the four languages at any time.

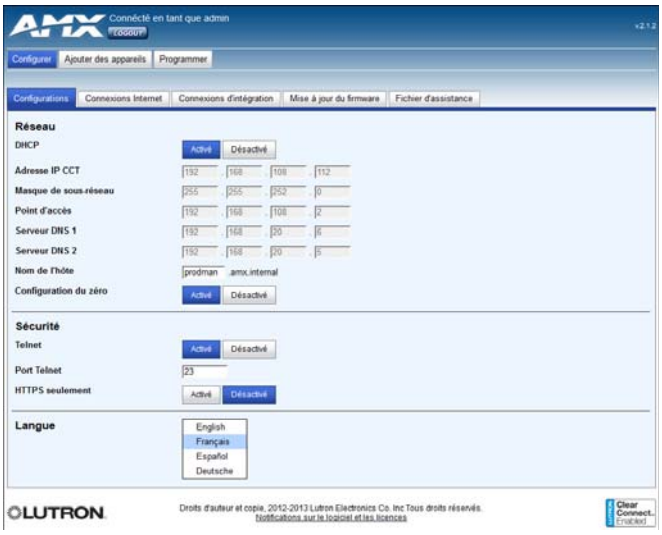

FIG. 13 Web interface in French

Web Logins Tab

The *Web Logins* tab of the *Configure* page controls management of web logins (FIG. 14).

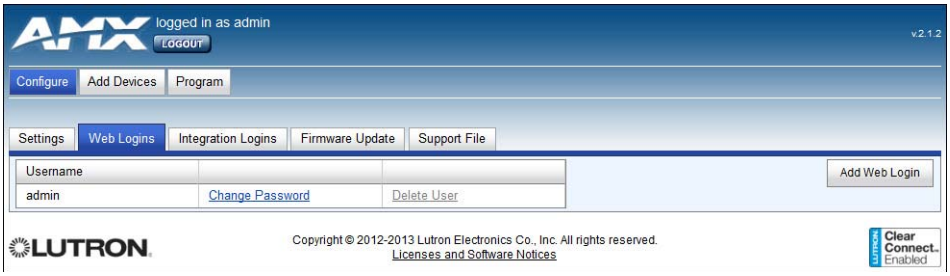

FIG. 14 Configure - Web Logins tab

Web Logins Tab	
Username:	Displays the usernames for each of the current web logins.
Change Password:	Click this link to change the password for the web login.
Delete User:	Click this link to delete the user. This feature is disabled if only one user is listed.
Add Web Login:	Click this button to add a new web login to the current list.

NOTE

The Web Logins tab will allow up to five separate web login entries. You must enter at least one for the administrator.

Adding a Web Login

To add a web login:

1. Click the **Add Web Login** button to open the *Add Web User* window (FIG. 15).

FIG. 15 Add Web User window

2. Enter the new web login username and password in the appropriate fields.

NOTE

You may not duplicate a user name that already exists.

NOTE

The Web Login Password allows most special characters. Do not use periods, quotation marks, apostrophes, or the plus sign.

3. Click **Create** or press **Enter** on your keyboard to create and save the login.
4. The new web login will now appear in the *Web Logins* tab.

Changing the Password of a Web Login

To change a web login's password:

1. In the *Web Logins* tab, click the *Change Password* link on the appropriate web login to open the *Change Password* window (FIG. 16).

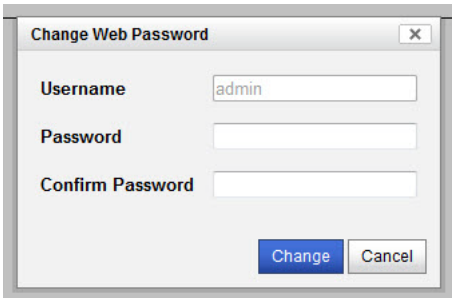

FIG. 16 Change Password window

2. Enter and confirm the new password.
3. Click **Change** or press **Enter** on your keyboard to confirm the new password.

Deleting a Web Login

To delete a login:

1. In the *Web Logins* tab, click the *Delete User* link on the appropriate web login to open the *Delete User* window (FIG. 17).

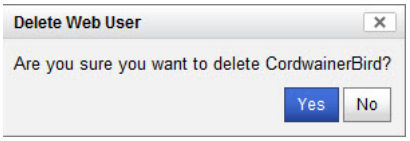

FIG. 17 Delete User prompt

2. Confirm that you wish to delete that web login by clicking **Yes**.
3. If only one web login is visible in the *Web Logins* tab, this login may not be deleted, and the *Delete User* link is disabled.

Integration Logins Tab

The *Integration Logins* tab on the *Configure* page allows management of integration logins (FIG. 18).

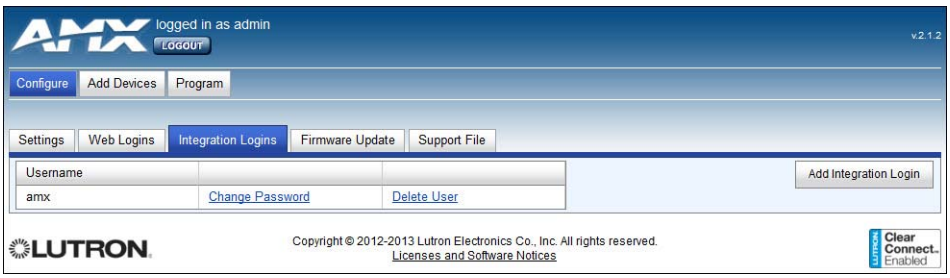

FIG. 18 Configure - Integration Logins tab

Integration Logins Tab	
Username:	Displays the usernames for each of the current integration logins.
Change Password:	Click this link to change the password for the integration login.
Delete User:	Click this link to delete the user.
Add Integration Login:	Click this button to add a new integration login to the current list

You may have up to 10 integration logins at one time, with a minimum number of zero. The logins that are created in this tab can be used via SSH or raw socket integration.

Adding an Integration Login

To add a new user login:

1. From the *Configure* page, select the *Integration Logins* tab.
2. Click the *New Integration Login* button to open the *Add Integration User* window (FIG. 19).

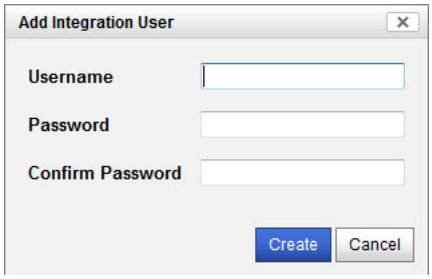

FIG. 19 Add Integration User window

3. Enter the new username and password and click **Create**.

NOTE

The Integration Login Password allows most special characters. Do not use periods, quotation marks, apostrophes, or the plus sign.

4. The new username will appear in the *Integration Logins* tab.

Changing the Password of an Integration Login

To change a user's password:

1. From the *Configure* page, select the *Integration Logins* tab.
2. In the appropriate user entry, select *Change Password* to open the *Change Integration Password* window (FIG. 20).

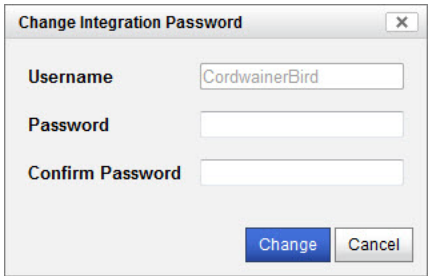

FIG. 20 Change Password window

3. Enter and confirm the new password and click **Change**.
4. The new password is now enabled.

Deleting an Integration Login

To remove a login:

1. From the *Configure* page, select the *Integration Logins* tab.
2. In the appropriate user entry, select *Delete User* to open the *Delete Integration User* window (FIG. 17).

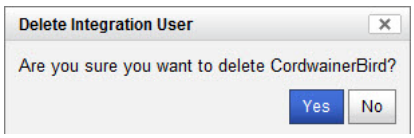

FIG. 21 Delete User window

3. Confirm that you wish to remove this user by clicking **Yes**.
4. The login will no longer appear in the *Integration Login* tab.

Firmware Update Tab

Firmware updates may be made through the *Firmware Update* tab (FIG. 22). This section allows you to select a .lef firmware update file and upload it to the NXB-CCG.

FIG. 22 Firmware Update tab

Firmware Update Tab	
Firmware Path:	Enter the path to where the firmware is located on your system. Use the Browse button to open a window to find the firmware on your system or network.
Update Firmware:	Click this button when the firmware file has been selected.

Uploading a Firmware File

To upload a firmware file:

1. Download the appropriate firmware file and save it to your desktop or storage disk.
2. If you know the exact path of the file on your network, enter it in the *Firmware Path* field. If you do not know the exact path, click the *Browse...* button to search for the .lef file.

NOTE

The file to be downloaded must be a valid .lef file provided by Lutron or the update will not succeed

3. Once a file has been chosen to upload, the **Update Firmware** button is now enabled. Clicking on this button will start the *Update Firmware* process (FIG. 23).

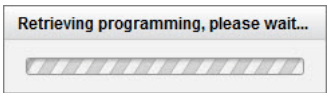

FIG. 23 Retrieving Information prompt

NOTE

DO NOT remove power from the NXB-CCG during the Update Firmware process.

4. Upon completion of the firmware update process, a pop-up dialog will be displayed with the status of the update (FIG. 24). Upon success, you may have to refresh and/or login to the web page again.

FIG. 24 Firmware Update Successful

NOTE

Downgrading the firmware to a previous version will delete the current programming on the NXB-CCG.

Some firmware update failures may cause the NXB-CCG to reboot. If this occurs, wait till the startup feedback is complete and then login to the Web Interface pages to try to update again. Ensure that you are uploading a valid firmware update file provided by Lutron.

Support File Tab

The NXB-CCG supports extracting device logs from the device for troubleshooting purposes. These may be extracted through the *Support File* tab (FIG. 25).

FIG. 25 Administration - Logging tab

Extracting a log from the NXB-CCG

To extract a log from the NXB-CCG:

1. From the *Support File* tab, click the **Extract Logs** button.
2. If you do not wish to extract device logs, click the **Create Support File** button.
3. A Lutron log file will be downloaded into the default Downloads directory of the browser. This file can then be used by Lutron to view the device logs for troubleshooting and debugging.

Add Devices Page

The *Add Devices* page (FIG. 26) allows you to add, remove, and manage up to 10 devices at a time within the NXB-CCG network.

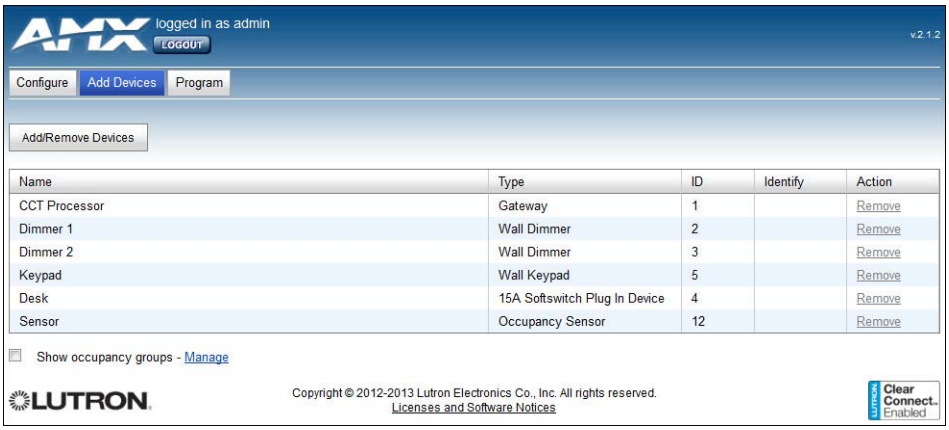

FIG. 26 Add Devices page

Add Devices Page	
Add/Remove Devices:	Click this button to add new devices to the NXB-CCG network.
Name:	Displays the name of the device in the network.
Type:	Displays the type of device in the network.
ID:	Displays the device ID number (1-10) in the network.
Action:	This link allows removal of the device from the network.
Show Occupancy Groups:	Click this box to show all occupancy groups within the devices in the network.
Manage:	Click this link to manage occupancy groups.

NOTE

All the added devices must be set to their factory defaults before they can be added to the system.

NOTE

While the NXB-CCG can control up to 31 devices at one time, only ten devices at a time may be entered via the Add Devices *page. Adding more devices requires multiple uses of the* Add Devices *interface.*

Entering Activation Mode

To enter Activation Mode:

1. In the *Add Devices* page, click the **Add/Remove Devices** button to enter the Add/Remove Devices Mode (FIG. 27).

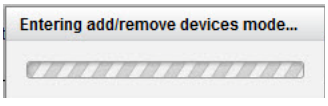

FIG. 27 Entering Add/Remove Devices Mode

2. Wait while the NXB-CCG attempts to enter activation.

   a. Entering activation may fail due to another system being in activation. This will open the *Unable to enter add/remove device mode* popup window (FIG. 28).

FIG. 28 "Unable to enter/remove device mode" prompt

NOTE

You may retry entering the Add/Remove Device mode when the other system is out of that mode.

b. Entering activation may fail due to house code collision. This condition is extremely unlikely, as random house codes are picked when the device first enters activation and upon collisions with other house codes.

3. The network is now waiting for devices to report themselves.

The devices that you wish to activate should have all their LEDs blinking slowly (two seconds on, one seconds off). If the devices are not blinking, triple-tap-hold-triple tap them to restore them to their factory defaults, and then wait a minute until they begin showing the activation mode feedback.

Press Button and Wiggle Shades Buttons

Entering the Add/Remove Devices Mode enables two new buttons on the *Add Devices* page: **Press Button** and **Wiggle Shades**. To enter a device to your system via **Press Button** (FIG. 29):

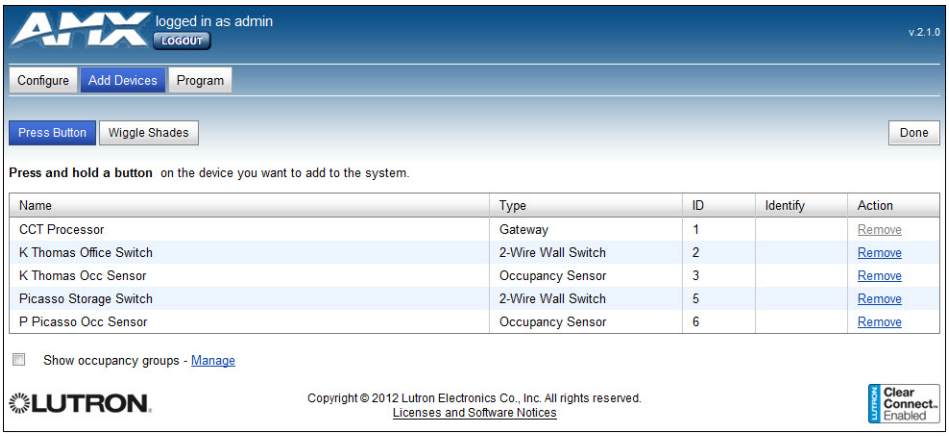

FIG. 29 Press Button function

1. Press and hold the device to be added to the system that is exhibiting the LED feedback on the appropriate button. Dimmers and switches can be added by pressing and holding the main paddle, plug in switches can be added by pressing the light toggle button on the device, and sensors can be added by pressing and holding the lights off button or lights toggle button.
2. The device will then report itself to the system and a *Device Heard* popup window (FIG. 33) appears, displaying the type of device that reported itself. If the device is not a valid device for the system, the device cannot be added.
3. You can now enter a unique name for the device and add it to the system by clicking the **Add** button or pressing **Enter**.

When using the *Press Button* function, some devices may not be easily accessible: for instance, they may only be accessible by ladder or concealed in areas not easily reached. In this case, the *Wiggle Shades* function (FIG. 30) allows remote addressing of shades.

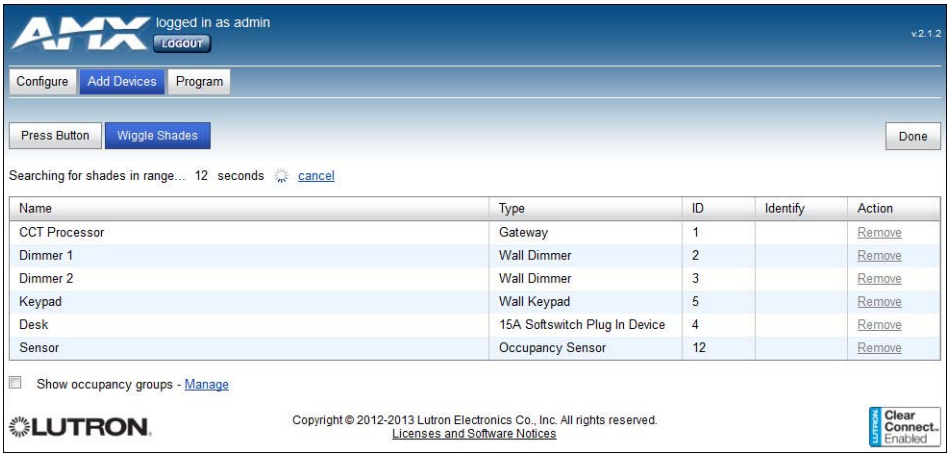

FIG. 30 Wiggle Shades function

NOTE

For more information on Lutron shades, please contact Lutron Customer Support. AMX does not support Lutron shades.

To enter a device to your system via *Wiggle Shades*:

1. Click the **Wiggle Shades** button. The NXB-CCG will attempt to find available shades within its signal range (FIG. 31).

FIG. 31 Search for shades in range

2. If the NXB-CCG does not find available devices within its signal range, the *Wiggle Shades* function will state so (FIG. 32). You may try again by clicking the *refresh* link.

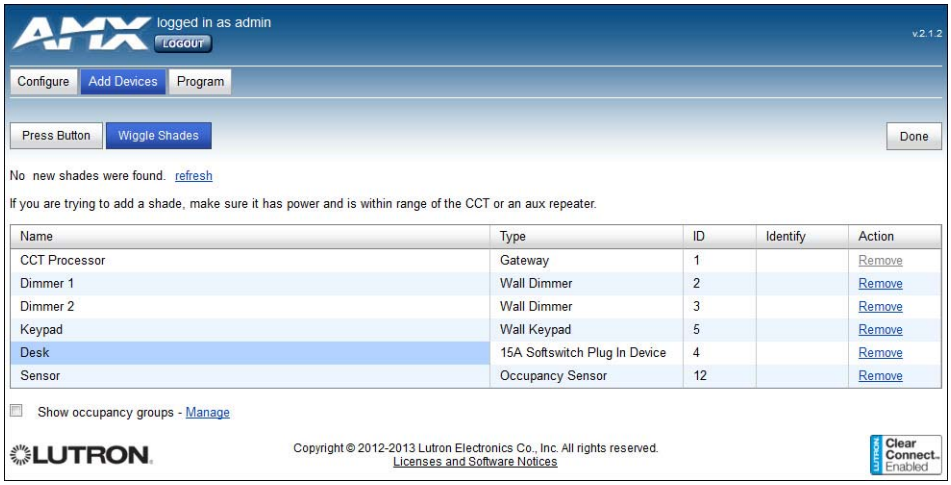

FIG. 32 No New Shades Found notice

Adding Devices

Once in Activation Mode, new devices can be added to the system and currently activated devices can be removed. To add new devices, do the following:

1. Press and hold the device to be added to the network, and verify that is exhibiting the appropriate LED feedback on the appropriate button.

NOTE

Sensors will not show activation feedback.

2. The device will then report itself to the system.
3. In the *Add Devices* page, the *Device Heard* popup window appears (FIG. 33), displaying the type of device that reported itself.

FIG. 33 Device Heard window

4. If the device is not a valid device for the network, the *Add Devices* page displays a message stating this, and the device cannot be activated.
5. In the *Device Heard* window, enter a unique name for the device and add it to the system by clicking **Add** or pressing **Enter** on your keyboard.

Removing Devices

To remove a device:

1. In the *Add Devices* page, click the *Remove* link in the *Action* column while the device is in Activation Mode.
2. When prompted, click **Yes**.

Exiting Activation Mode

To exit Activation Mode:

1. With the *Add Devices* page in Activation Mode, click the “Done” button. The NXB-CCG will start exiting all devices from activation (FIG. 34).

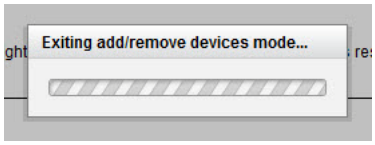

FIG. 34 Exiting Add/Remove Devices Mode

2. After about 10 to 15 seconds, the original *Add Devices* screen appears, indicating that activation was exited successfully.

Changing Device Names

Devices that are added to the NXB-CCG network are named during the activation process, but their names can be modified afterward, either in or out of Activation Mode. To change a device’s name:

1. In the *Add Devices* page, click on the device’s name to open the *Device Name* window (FIG. 35).

FIG. 35 Device Name window

2. Enter the new device name in the *Device Name* window field.
3. Click **Save** or press **Enter** on your keyboard to save your changes.

Changing Device Integration IDs

Devices that are added to the NXB-CCG network can have their IDs changed, whether in or out of Activation Mode. This is the integration ID that is used to refer to the device when controlling the system via the integration protocol. To change the Device Integration ID:

1. Click on the ID of the device to be modified to open the *Device Integration ID* window (FIG. 36).

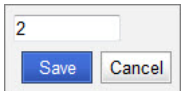

FIG. 36 Device Integration ID window

2. Enter the new ID number, from 1 to 10.
3. When finished, click **Save** or press **Enter** on your keyboard to save your changes.

Occupancy Group Management

Occupancy grouping allows coverage of a larger space than one sensor can cover. For example, if you want a conference room to shut off lights when no one is in it after a specified timeout, and it is too large for one occupancy sensor to see the entire room, you can add multiple sensors to the system and assign them all to the same group. Once in a group, the unoccupied state will not be triggered until all of the sensors have reported this state. This will prevent the lights shutting off while people are still in the room but out of view of the sensor, or integration reporting this condition for the same situation.

When Occupancy sensors are added to your network, additional capabilities are available on the *Add Devices* page for managing occupancy sensor grouping. When occupancy sensors are activated to the system, the *Show Occupancy Groups* box is available. If the box is unchecked, the occupancy group ID and name for each sensor is hidden in the *Devices* list. However, if it is checked, this group is displayed (FIG. 37).

Name	Type	ID	Occupancy Group ID & Name	Identify	Action
CCT Processor	Gateway	1			Remove
K Thomas Office Switch	2-Wire Wall Switch	2			Remove
K Thomas Occ Sensor	Occupancy Sensor	3	4 - group1		Remove
Picasso Storage Switch	2-Wire Wall Switch	5			Remove
P Picasso Occ Sensor	Occupancy Sensor	6	7 - group2		Remove

FIG. 37 Occupancy Group ID & Name

Clicking on the *Manage* link in the lower left corner of the screen opens a window allowing you to add and remove occupancy groups from the system (FIG. 38). You can use these groups to change the grouping of the sensors that are networked to the NXB-CCG.

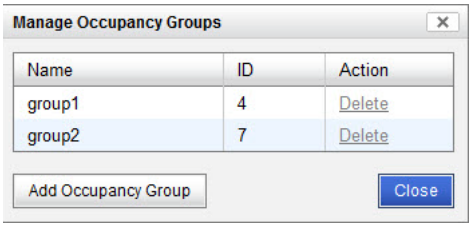

FIG. 38 Manage Occupancy Groups window

Program Page

The *Program* page can be used to program Clear Connect devices to respond to scene activations, occupancy events, and physical keypad button presses (FIG. 39). All programming is done in real time on the system.

FIG. 39 Program - Devices tab

NOTE

If the device that you are trying to assign to a button or sensor or the device that you are programming (keypad or sensor) is not physically present or is not powered, programming will likely fail.

Devices Tab

Buttons programmed with the NXB-CCG will all have “single action” programming, with the exception of raise/lower buttons on keypads. This means that presses of either physical or virtual buttons will always send the programmed devices to their programmed level regardless of the state of the devices. The LEDs on buttons are “scene logic,” meaning that they are lit when all devices programmed to the associated button are on at the exact levels that are programmed.

The *Program* page allows you to program devices to buttons. Clicking a button in the *Devices* tab of the *Program* page view will show a window on the right with details on that button (FIG. 40).

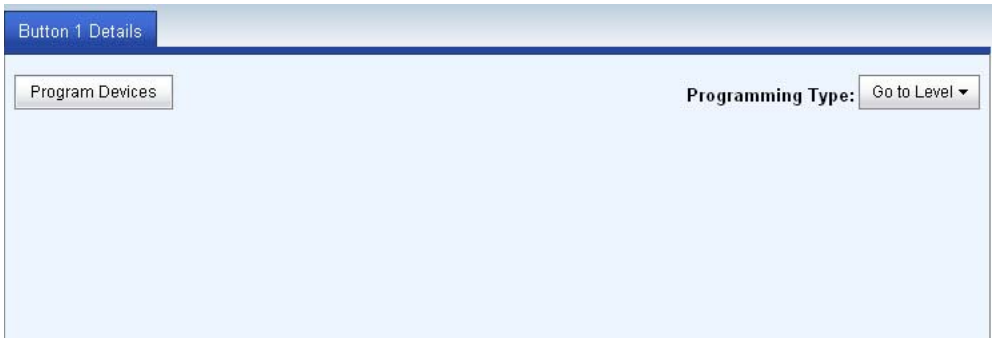

FIG. 40 Device Details

To add more available buttons for programming, right-click the device name to add ten more buttons to the list below the device. To change the name of a given button, right-click the button name to open the *Rename Button* window (FIG. 41).

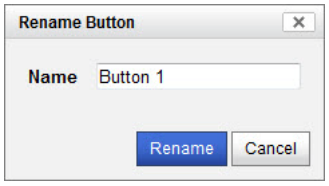

FIG. 41 Rename Button window

Button Details

To add devices to the button:

1. Click the **Program Devices** button in the *Button Details* pane (FIG. 40) to open the *Add Devices to Button* window (FIG. 42).

FIG. 42 Add Devices to Button window

2. Select the devices to add by clicking the appropriate check boxes. To select all of the available devices, click *All*, and clear your selections by clicking *None*.
3. Click **Add** to save your changes. This opens the *Switch Programming* pane (FIG. 43).

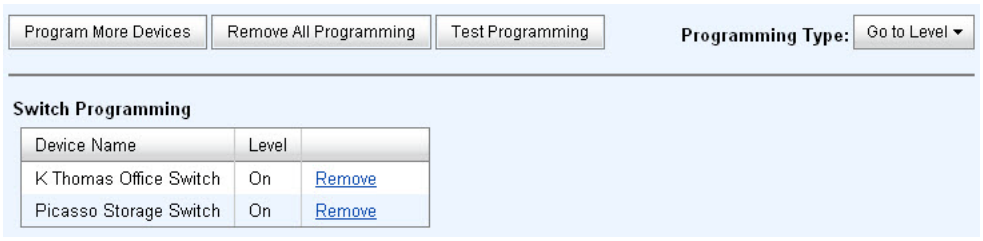

FIG. 43 Switch Programming details

When a button already contains programming, this programming is displayed in the button details window. Clicking the **Test Programming** button will test the current programming by sending the devices to those levels. Devices can be removed from the button by clicking the *Remove* link on the row corresponding to the device to be removed.

Adding Virtual Buttons

The NXB-CCG has 100 virtual buttons that can be programmed for integration purposes. When the *NXB-CCG Processor* entry is expanded in the *Devices* tree view only 10 buttons are shown by default. If you need to program more than 10 virtual buttons, you can show more of the 100 by right clicking the *NXB-CCG Processor* text in the *Devices* tree view. Clicking this prompt will show additional virtual buttons 11 through 20, and so on.

Occupancy Tab

Occupancy sensors show up in the *Program* page in the same way as a keypad or dimmer. The occupied and unoccupied actions can be programmed individually to loads. This allows you the ability to create a vacancy sensor by not assigning any programming to the occupied action. Occupancy sensors can be programmed in groups (where occupancy is determined by the state of all sensors in the group) or individually (FIG. 44).

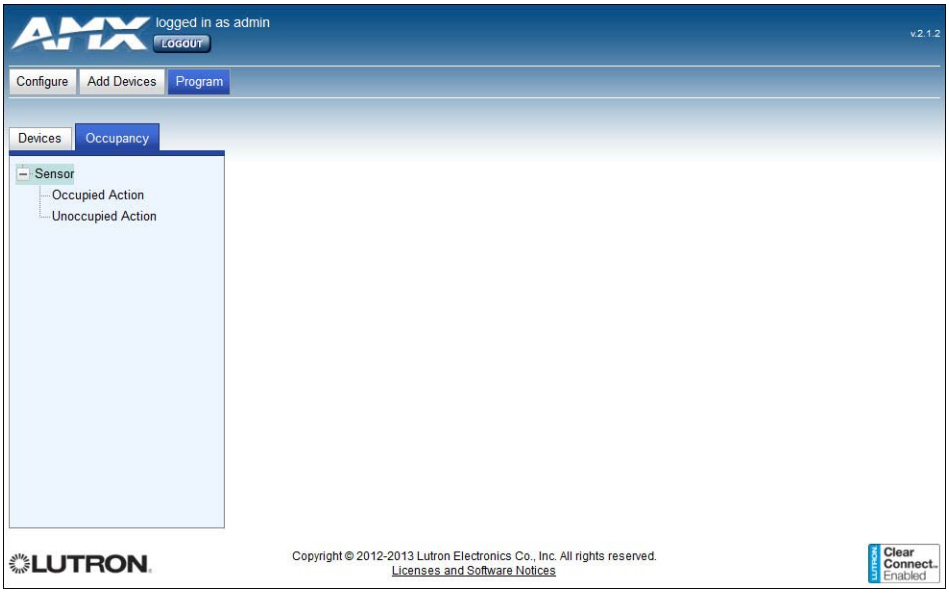

FIG. 44 Program - Occupancy Tab

Clicking on the Occupied Action or Unoccupied Action links for each device displays the *Switch Programming* pane (FIG. 45 and FIG. 46).

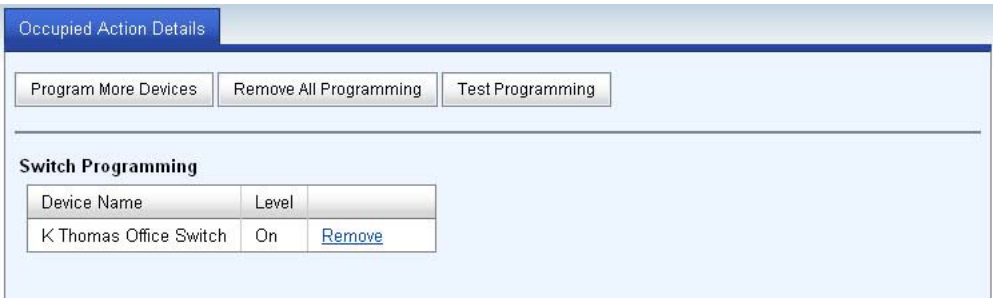

FIG. 45 Occupied Action Details tab

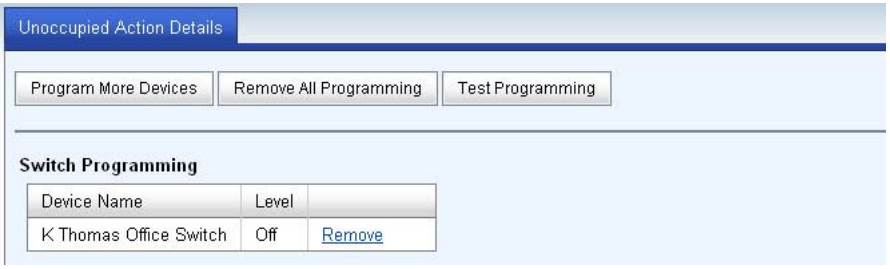

FIG. 46 Unoccupied Action Details tab

Switch Programming	
Device Name:	Displays the name of the device.
Level:	Click on the setting to turn the programmed settings on and off.
Remove:	Click the link to remove the programmed settings from the switch.

Integration

The NXB-CCG supports a subset of the Lutron Integration Protocol (available on the Lutron website) that is relevant for the devices that are supported by the NXB-CCG. The NXB-CCG also provides the ability to download an XML file that provides integration information about the system that is currently programmed to it, in the Lutron XML format.

Supported Protocol

Supported Integration Commands	
1)	'#OUTPUT,<integration ID>,1,<level>' (goto level)
2)	'#OUTPUT,<integration ID>,1,<level>,<fade time>' (goto level with fade)
3)	'#OUTPUT,<integration ID>,2' (raise)
4)	'#OUTPUT,<integration ID>,3' (lower)
5)	'#OUTPUT,<integration ID>,4' (stop)
6)	'?OUTPUT,<integration ID>,1' (query level)
7)	'#DEVICE,<integration ID>,<component number>,3' (button press)
8)	'#DEVICE,<integration ID>,<component number>,4' (button release)
9)	'#DEVICE,<integration ID>,<component number>,9,1' (set led on) **NOTE:** you cannot set the state of programmed keypad LEDs.
10)	'#DEVICE,<integration ID>,<component number>,9,0' (set led off) **NOTE:** you cannot set the state of programmed keypad LEDs.
11)	?DEVICE,<integration ID>,<component number>,9 (query led state)
12)	?GROUP,<integration ID>,3 (query occupancy group state)

Supported Monitoring Responses	
1)	'~OUTPUT,<integration ID>,1,<level>' (dimmer level reporting)
2)	'~DEVICE,<integration ID>,2,3' (occ sensor occupied, component always 2)
3)	'~DEVICE,<integration ID>,2,4' (occ sensor unoccupied, component always 2)
4)	'~GROUP,<integration ID>,3,3' (occ group occupied, component always 3)
5)	'~GROUP,<integration ID>,3,4' (occ group unoccupied, component always 3)
6)	'~DEVICE,<integration ID>,<component number>,3' (button pressed)
7)	'~DEVICE,<integration ID>,<component number>,4' (button released)
8)	'~DEVICE,<integration ID>,<component number>,9,<state>' (led state 1/0)

The information integration XML file can be opened in a web browser. To access the XML data:

1. Enter "http://[nxb-ccg url]/xml" into your browser after logging into the NXB-CCG to return the XML data for your system.
2. Enter "http://[nxb-ccg url]/xml?login=[user]&password=[password]" into your browser to return the XML data without first having to log in. **Example:** *https://192.168.244.53/xml?login=admin&password=1988*

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