Operation/Reference Guide

NXB-KNX

NetLinx KNX Interface

Control System Accessories

Initial Release: 5/15/2008

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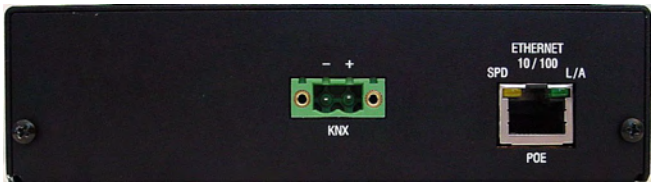
Overview

The NetLinx NXB-KNX interface (FG2031-01) allows AMX NetLinx Integrated Controllers the ability to control, integrate and communicate with homes and buildings that utilize the KNX communication protocol.

KNX is the world's first open, royalty-free, and platform independent standard for home and commercial building control.

(front)



(rear)

FIG. 1 NXB-KNX Interface

Product Specifications

NXB-KNX Specifications	
Front Panel Components:	• Status LED (green): Blinks once a second to indicate that the unit has powered up. Any state other than blinking once a second indicates the unit is either not powered, or has not completed boot up. • KNX LED (green): Solid on indicates power is on and the unit is connected to KNX bus. • Output LED (red): Lights to indicate traffic from the NXB-KNX to the KNX bus. • Input LED (yellow): Lights to indicate traffic from the KNX bus to the NXB-KNX.
Rear Panel Connectors:	• KNX 2-pin captive-wire connector: • Ethernet Port - 10/100 Ethernet with PoE. LEDs show communication activity, connection status, speeds, and mode information: SPD (speed) - Yellow LED lights On when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps. L/A (link/activity) - Green LED lights On when the Ethernet cables are connected and terminated correctly, and blinks when receiving Ethernet data packets.
Power Requirements:	• PoE powered – no local Power Supply needed • IEEE 802.3af Compliant
Memory:	• 64 Mbytes of RAM • 256 Mbytes of FLASH
Dimensions (HWD):	With feet: • 1.66" x 5.54" x 4.10" • 4.216 cm x 14.07 cm x 10.42 cm Without feet: • 1.52" x 5.54" x 4.10" • 3.861 cm x 14.07 cm x 10.42 cm
Weight:	1.45 lbs. (0.65 kg)

NXB-KNX Specifications (Cont.)	
Operating Environment:	• Operating Temperature: 32°F - 104°F (0°C - 40°C) • Relative Humidity: 5% to 85% non-condensing • *Intended for indoor use only*
Included Accessories:	• Rubber feet • Green 2-Pin 5mm Phoenix connector with captive screws
Other AMX Equipment:	• AC-DIN-CS3 DIN Rail Mounting Bracket (FG532-01) • PS-POE-AF PoE Injector (FG423-80)
Certifications:	• FCC Class B • CE • IEC60950 • RoHS

Installation

Wiring and Connections

NOTE

To avoid any damage to the electronic component, installation must be performed in an ESD safe environment.

NOTE

Do not connect power to the NXB-KNX until the wiring is complete.

The NXB-KNX is installed between the NetLinx Master and the KNX control bus, and passes NetLinx control commands to the KNX control bus via 2-wire twisted pair cabling, as indicated in FIG. 1:

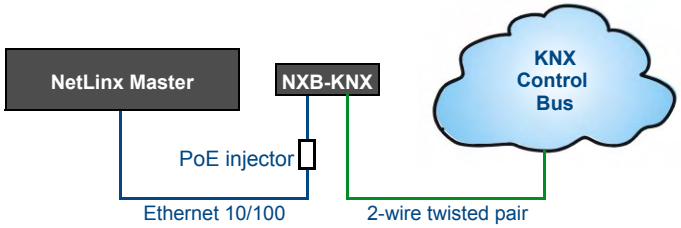


FIG. 1 NXB-KNX installation

After you have completed the installation, consult the *Configuration* section on page 5.

Ethernet 10/100 Base-T RJ-45 Wiring Configuration

The table below describes the pinouts, signals, and pairing for the Ethernet 10/100 Base-T connector and cable.

Ethernet Pinouts and Signals				
Pin	**Signals**	**Connections**	**Pairing**	**Color**
1	TX +	1 --------- 1	1 --------- 2	White-Orange
2	TX -	2 --------- 2		Orange
3	RX +	3 --------- 3	3 --------- 6	White-Green
4	no connection	4 --------- 4		Blue
5	no connection	5 --------- 5		White-Blue
6	RX -	6 --------- 6		Green
7	no connection	7 --------- 7		White-Brown
8	no connection	8 --------- 8		Brown

FIG. 2 diagrams the RJ-45 pinouts and signals for the Ethernet RJ-45 connector and cable.

FIG. 2 Straight-Through Wiring

PoE (Power Over Ethernet)

The NXB-KNX uses CAT5/CAT6 wire via the Ethernet port for PoE power.

Use the PS-POE-AF Power over Ethernet Injector (FG423-80) to simplify wiring and installation by eliminating the need for an AC outlet at each point of installation.

NOTE

The NXB-KNX can be placed up to approximately 330' (100 meters) from PoE Injector.

- If used with a non PoE-capable Ethernet switch (such as the NXA-ENET24), then an optional PS-POE-AF Power-over-Ethernet (PoE) power supply is required to provide power to the NXB-KNX.
- If the NXB-KNX is used with a PoE-capable Ethernet switch (such as the NXA-ENET24PoE), then no PoE Injectors are required.

KNX Connector

The KNX connector on the rear panel is a 2-pin captive-wire connector that provides communication between the NXB-KNX and the KNX control system via 2-wire shielded twisted pair cabling (FIG. 3).

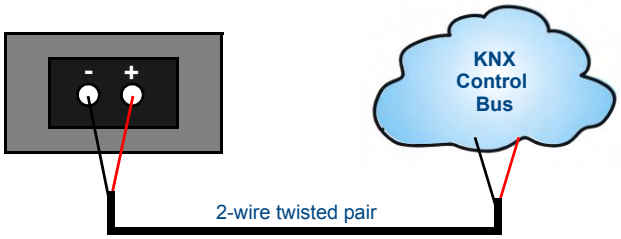


FIG. 3 KNX Connector wiring diagram

Configuration

Overview

NXB-KNX units have a built-in WebConsole that allows you to make various configuration settings via a web browser on any PC that has access to the NXB-KNX device. The web console consists of a series of web pages that are collectively called the "NXB-KNX Configuration Manager" (FIG. 1).

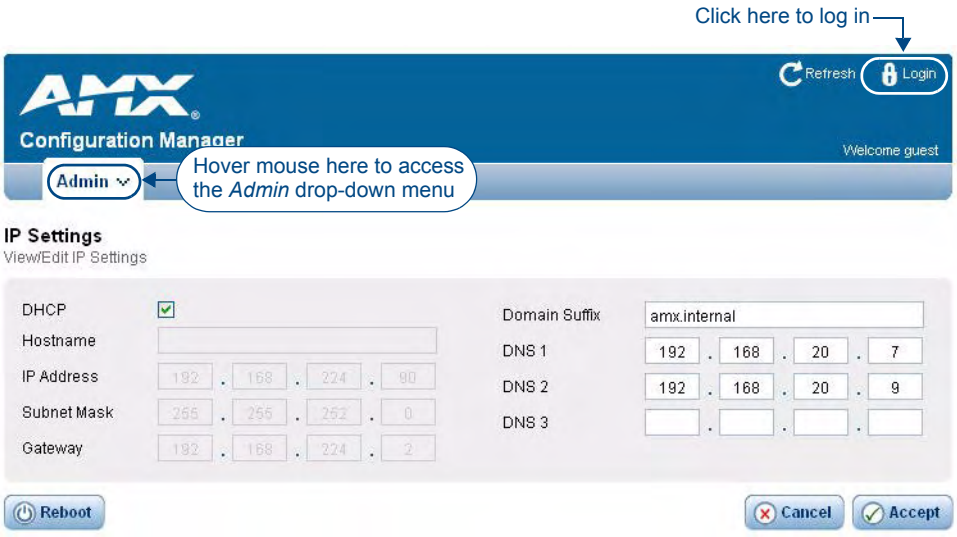


FIG. 1 NXB-KNX Configuration Manager - IP Settings Page (initial view)

Determining the IP Address of the NXB-KNX

NXB-KNX units feature a built-in zero-configuration networking client that allows you to determine the unit's IP address via Bonjour or a similar zero-configuration client. Zero-configuration (or Zeroconf, also known as "Bonjour") 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, as described below.

Bonjour (Zero-Configuration) Client

You will need a zero-configuration client to determine the IP address of the NXB-KNX. There are many zero-configuration clients available. However, for the purposes of this document, we will refer to *Bonjour for Windows*. It is free and widely available for download.

If you don't already have it installed on your PC, download and install *Bonjour for Windows* before you begin.

NOTE

*The NXB-KNX is set to **DHCP** by default.*

1. With *Bonjour for Windows* running on a PC that has access to the LAN that the NXB-KNX resides on, connect the NXB-KNX to the network (see *Wiring and Connections* section on page 3).
2. In Bonjour, you will see the unit join the network at power up.
3. In Bonjour, double-click on the NXB-KNX link to access the selected unit's Configuration Manager (IP Settings page).
4. The unit's IP Address is displayed in the IP Settings page (FIG. 2).

At this point you can assign a new IP Address if necessary.

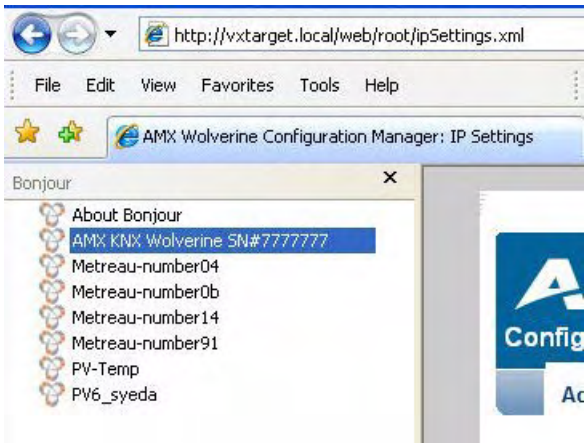


FIG. 2 Bonjour for Windows - example screen

NOTE

As shown in FIG. 2, Bonjour for Windows operates as a plug-in to Internet Explorer (version 7 shown), and is displayed in the IE Explorer Bar. If you have installed Bonjour for Windows, but don't see the Bonjour toolbar icon, you may need to "unlock" and expand the toolbars to see it.

Accessing the WebConsole

From any PC that has access to the LAN that the NXB-KNX resides on:

1. Open a web browser and type the IP Address of the target NXB-KNX unit in the Address Bar.
2. Press Enter to access the WebConsole for the specified NXB-KNX unit. The initial view is the *IP Settings* page (FIG. 1).

Note that this view is display-only, because you have not yet logged in. You must log in before making changes to the IP Settings page, and to access the other pages described in this section.

Admin Menu

There are several configuration pages included in the Configuration Manager, all of which are accessed via the *Admin* drop-down menu (FIG. 3):

FIG. 3 NXB-KNX Configuration Manager -Admin menu

Click on an option in this menu to access each of the configuration pages, as described in the following sub-sections:

Security Settings

Select **Security Settings** from the Admin drop-down menu to open the *Security Settings* page (FIG. 4). Use the options on the page to specify security options and login information for this NXB-KNX unit.

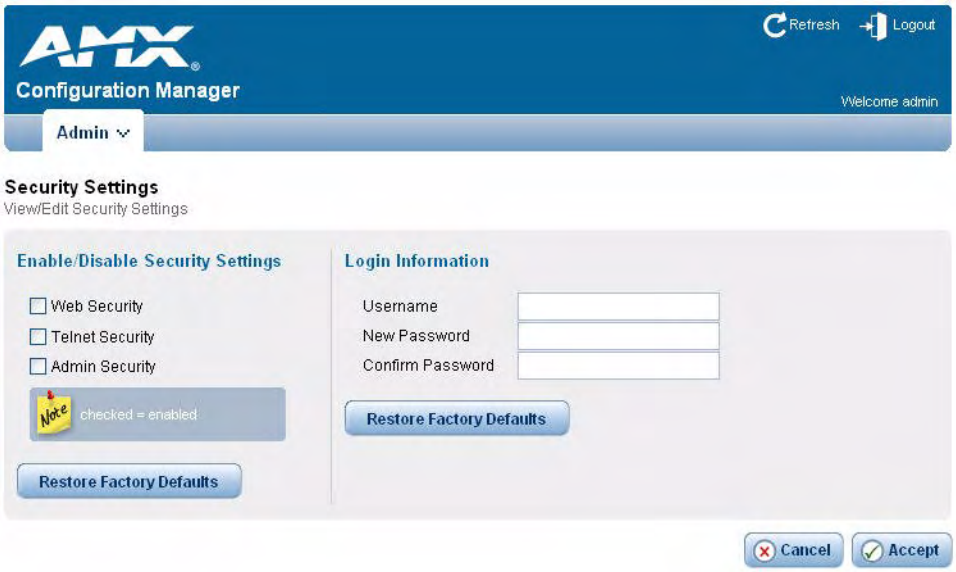


FIG. 4 Security Settings page

Enable / Disable Security Settings

Web Security:	Click this checkbox to enable Web Security. When Web security is enabled, a username and password are required to access any system Web pages (default = disabled).
Telnet Security:	Click this checkbox to enable Telnet Security. With Telnet Security enabled, a username and password are required to establish a Telnet or SSH connection (default = disabled).
Admin Security:	Click this checkbox to enable Admin Security. With Admin Security enabled, a username and password are required to modify any system configuration item (default = disabled).
Restore Factory Defaults:	Click to restore all security settings to their factory default (all disabled).

Login Information

Use this set of options to specify a Username and Password. These will be required only if one or more of the Security Settings are enabled.

Username:	Enter the Username that will be required to login to this unit if security is enabled. The default Username is "administrator".
New Password:	Enter a new password that will be required to login to this unit if security is enabled. The default Password is "password".
Confirm Password:	Re-enter the new password in this field.
Restore Factory Defaults:	Click to restore the login information to the factory defaults: • Default Username = **administrator** • Default Password = **password**

- Click **Accept** to save your changes. Note that changes on this page take effect immediately.
- Click **Cancel** to cancel any changes.

Logging Into the Configuration Manager (With Security Enabled)

Login is only required if the *Web* and/or *Admin* security options have been enabled on the unit.

1. Click the **Login** link in the upper-right corner of the initial page (FIG. 1). This invokes the Login popup page (FIG. 5).

FIG. 5 NXB-KNX Configuration Manager - Login popup page

Enter the default login information:

- Username = **administrator**
- Password = **password**

2. Click the **Login** button.

Once you have successfully logged into the Configuration Manager, the IP Settings page is displayed, and can be edited as needed.

IP Settings

Select **IP Settings** from the Admin drop-down menu to open the *IP Settings* page (FIG. 6). Use the options on the page to specify network/IP settings for this NXB-KNX unit.

FIG. 6 IP Settings page

DHCP:	Click to toggle DHCP on this unit (default = enabled). Note that DHCP must be enabled in order for the zero-configuration client (i.e. Bonjour for Windows) to detect the NXB-KNX on the network. See the *Bonjour (Zero-Configuration) Client* section on page 5 for details.
Hostname:	Enter a Hostname for this unit (enabled only if DHCP is disabled).
IP Address:	Enter an IP Address for this unit (enabled only if DHCP is disabled).
Subnet Mask:	Enter a Subnet Mask for this unit (enabled only if DHCP is disabled).
Gateway:	Enter a Gateway for this unit (enabled only if DHCP is disabled).

Domain Suffix: Enter the Domain Suffix for this unit.

DNS 1, 2, 3: Enter up to three DNS addresses for this unit.

Reboot: Click to initiate a system reboot. IP Settings changes only take effect after a reboot.

Port Settings

Select **Port Settings** from the Admin drop-down menu to open the *Port Settings* page (FIG. 7). Use the options on the page to specify various Port settings for this NXB-KNX unit.

FIG. 7 Port Settings page

The options on this page provide inputs for enabling and disabling of HTTP, HTTPS, Telnet, SSH and FTP ports, and allow you to change each port number from it's standard default assignment.

HTTP Port Number: Default = enabled, default port number = 80.

HTTPS Port Number: Default = enabled, default port number = 443.

Telnet Port Number: Default = enabled, default port number = 23.

SSH Port Number: Default = enabled, default port number = 22.

FTP Port Number: Default = enabled, default port number = 21.

Restore Factory Defaults: Click to restore all Port settings to the factory defaults.

Reboot: Click to initiate a system reboot. Port changes only take effect after a reboot.

Clock Manager

Hover the cursor over the **Clock Manager** option in the Admin menu to open the Clock Manager sub-menu (FIG. 8).

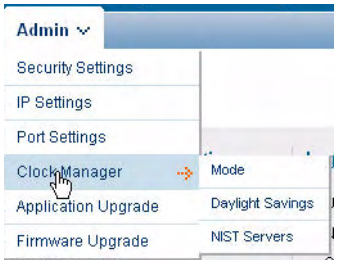


FIG. 8 Clock Manager sub-menu

Each of the options listed in the submenu are also accessible via options on the Clock Manager page (FIG. 9).

FIG. 9 Clock Manager options

Clock Manager - Mode Manager

Select the main Clock Manager entry in the Admin Menu, or select **Mode** from the Clock Manager sub-menu, and the *Mode Manager* page will be displayed (FIG. 10):

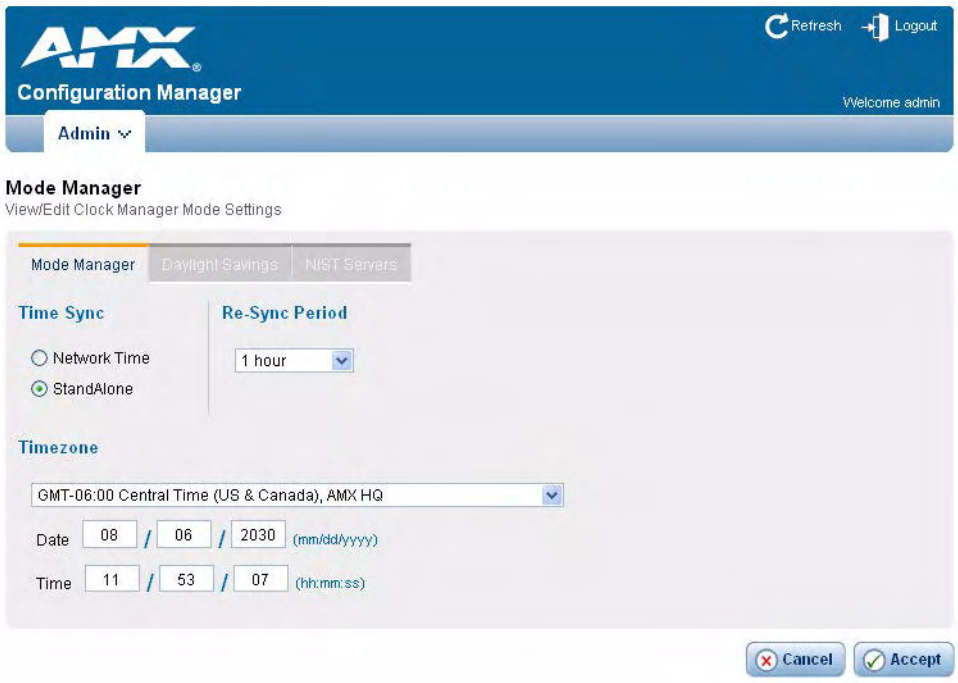


FIG. 10 Clock Manager - Mode Manager page

The options on the Mode Manager page provide inputs for selecting the current mode of the system time:

Time Synch: Use the radio buttons to select either *Network Time* or *StandAlone*.

***Note**: If using StandAlone mode, the time will be valid only until the unit is rebooted. Once the unit is rebooted, the time will be lost, and will have to be reset.*

Note that the *Daylight Savings* and *NIST Servers* tabs are enabled only if *Network Time* is selected as the mode.

Re Sync Period:	Select the desired re-synch period for the clock from this drop-down menu. Re-synch period options include 5 minutes, 15 minutes, 1, 2 and 4 hours (default = 1 hour).
Timezone:	Select the appropriate Time Zone from the drop-down menu.
Date:	Use these fields to manually enter today's date (mm/dd/yyyy).
Time:	Manually enter the current time (hh:mm:ss).

- Click **Accept** to save your changes. Note that changes on this page take effect immediately.
- Click **Cancel** to cancel any changes.

Clock Manager - Daylight Savings

Select **Daylight Savings** from the Clock Manager sub-menu (or from the main Clock Manager page), and the *Daylight Savings Manager* page will be displayed (FIG. 11):

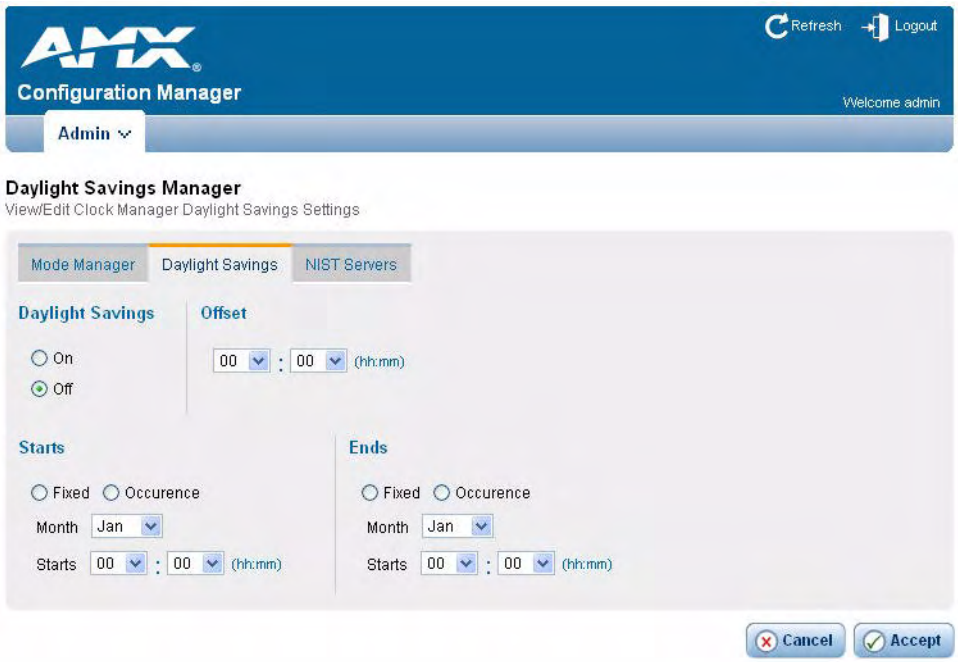


FIG. 11 Clock Manager - Daylight Savings Manager page

Note that this tab is enabled only if *Network Time* is selected (on the Mode Manager page).

The options on this page allow you to enable and disable daylight savings, and specify daylight savings start and end times.

Daylight Savings:	Use these radio buttons to turn daylight savings time on and off (default = Off).
Offset:	Use these drop-down menus to specify the amount of time to offset the clock for daylight savings.
Starts:	These options allow you to specify when to start using daylight savings time. Select a month and time to start from the drop-down menus. • Select *Fixed* to start daylight savings at a specific Day, Month and Time (an additional field for *Day* is provided when this radio button is selected). • Select *Occurrence* to start daylight savings at a specified occurrence (additional fields for *Week of the Month*, and *Day of the Week* are provided).

Ends: These options allow you to specify when to stop using daylight savings time. Select a month and time to start from the drop-down menus.

- Select *Fixed* to end daylight savings at a specific Day, Month and Time (an additional field for *Day* is provided when this radio button is selected).
- Select *Occurrence* to end daylight savings at a specified occurrence (additional fields for *Week of the Month*, and *Day of the Week* are provided).

- Click **Accept** to save your changes. Note that changes on this page take effect immediately.
- Click **Cancel** to cancel any changes.

Clock Manager - NIST Servers

Select **NIST Servers** from the Clock Manager sub-menu (or from the main Clock Manager page), and the *NIST Server Manager* page will be displayed (FIG. 12):

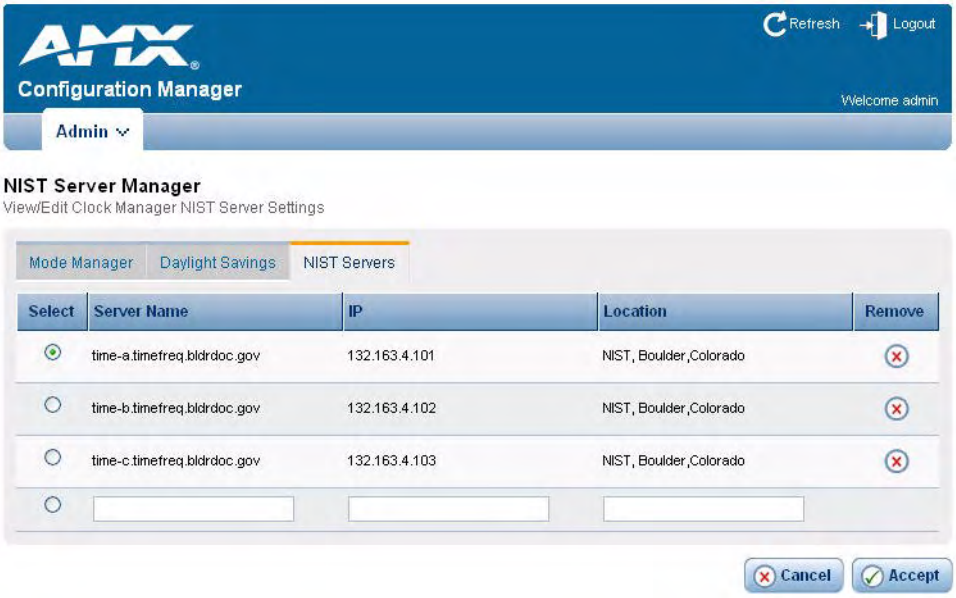


FIG. 12 Clock Manager - NIST Server Manager page

Note that this tab is enabled only if *Network Time* is selected (on the Mode Manager page).

The options on this page allow you to select the NIST server that will be queried at each clock synchronization, and allow you to add more NIST servers to the list.

NOTE

Only one NIST server is selectable at any given time.

To add a NIST server, enter the *NIST Server Name*, *IP Address* and *Location* in the fields provided.

To remove a NIST server from the list, click the *Remove* button.

- Click **Accept** to save your changes. Note that changes on this page take effect immediately.
- Click **Cancel** to cancel any changes.

Application Upgrade

Select **Application Upgrade** from the Admin drop-down menu to open the *Application Upgrade* page (FIG. 13).

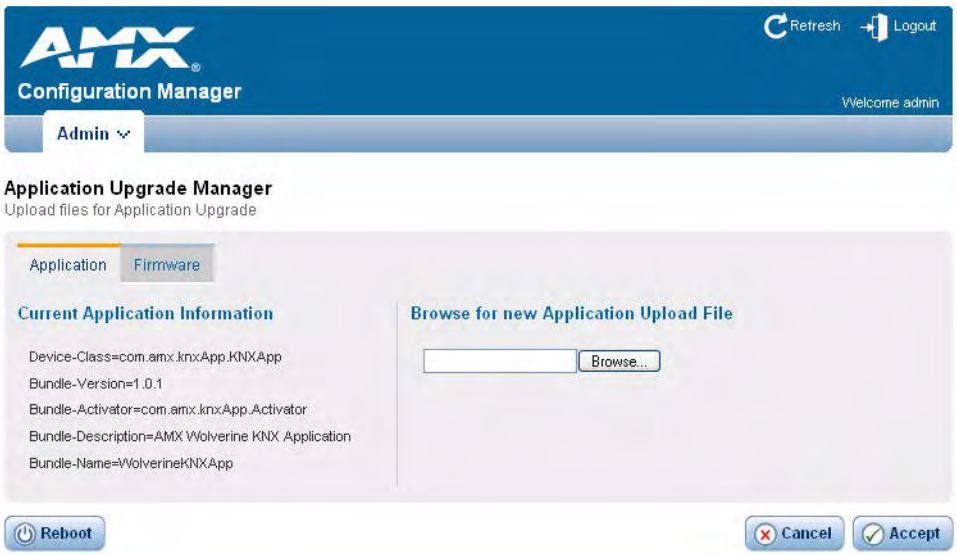


FIG. 13 Application Upgrade page

This page allows you view information on the application file currently loaded on this unit, and to upload an application .JAR file to the unit.

Current Application Information

Information on the current application loaded on the device is displayed here.

Browse for new Application Upload File

Select the **Browse** button to open a standard file display for traversing your PC's file structure, and selecting an individual .JAR file.

The selected file name is displayed in the associated text box.

Click the *Accept* button to initiate the download of the selected .JAR file to the unit.

- If the download fails for any reason, an error message is displayed indicating the failure.
- If the download is successful, a message is displayed and the new application file information is displayed.

Click the **Reboot** button to initiate a system reboot. Application file changes only take effect after a reboot.

Firmware Upgrade

Select **Firmware Upgrade** from the Admin drop-down menu to open the *Firmware Upgrade Manager* page (FIG. 14). Use the options on the page to upgrade the firmware on this NXB-KNX unit.

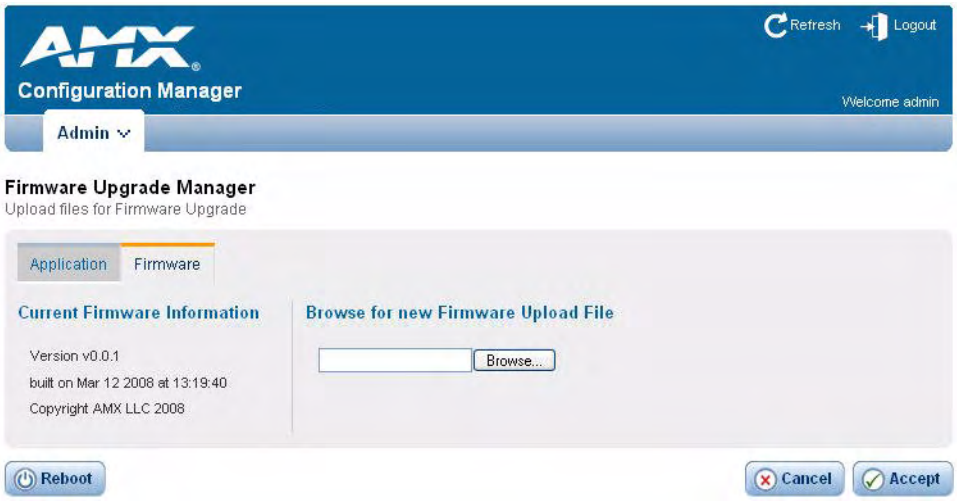


FIG. 14 Firmware Upgrade Manager page

This page allows you view information on the firmware version currently loaded on this unit, and to upload a firmware .JAR file to the unit.

Current Firmware Information

Information on the current firmware loaded on the device is displayed here.

Browse for new Firmware Upload File

Select the **Browse** button to open a standard file display for traversing your PC's file structure, and selecting an individual .JAR file.

The selected file name is displayed in the associated text box.

Click the *Accept* button to initiate the download of the selected .JAR file to the unit.

- If the download fails for any reason, an error message is displayed indicating the failure.
- If the download is successful, a message is displayed.

Click the **Reboot** button to initiate a system reboot. Firmware changes only take effect after a reboot.

NOTE

System information will not be updated until after a system reboot.

Programming - Telnet Commands

Overview

The NXB-KNX supports Telnet communications. This type of terminal communication can be accessed remotely, via TCP/IP.

Telnet is an insecure form of terminal communication, since it does not require a physical connection to the device to connect. Further, the Telnet interface exposes information to the network (which could be intercepted by an unauthorized network client).

NOTE

It is recommended that you make initial configurations as well as subsequent changes via the Web Console. Refer to the Configuration section on page 5.

Refer to the *Terminal Commands* section on page 16 for a listing of all commands available in a terminal session.

Establishing a Terminal Connection Via Telnet

1. In your Windows taskbar, go to **Start > Run** to open the Run dialog.
2. Type **cmd** in the *Open* field and click **OK** to open an instance of the Windows command interpreter (Cmd.exe).
3. In the CMD (command), type "**telnet**" followed by a space and the NXB-KNX's IP Address info.

   Example: `>telnet XXX.XXX.XXX.XXX`
4. Press *Enter*.
   - Unless Telnet security is enabled, a session will begin with a welcome banner:

     ```
     Welcome to NetLinx vX.XX.XXX Copyright AMX Corp. 1999-2006
     >
     ```
   - If Telnet security is enabled, type in the word **login** to be prompted for a Username and Password before gaining access to the NXB-KNX.
5. Enter your username to be prompted for a password.
   - If the password is correct you will see the welcome banner.
   - If the password is incorrect, the following will be displayed:

     ```
     Login: User1
     Password: *****
     Login not authorized. Please try again.
     ```

     After a delay, another login prompt will be displayed to allow you to try again.

     If after 5 prompts, the login information is not entered correctly, the following message will be displayed and the connection closed:

     ```
     Login not allowed. Goodbye!
     ```

NOTE

If a connection is opened, but a valid a username / password combination is not entered (i.e. just sitting at a login prompt), the connection will be closed after one minute.

Terminal Commands

The Terminal commands listed in the following table can be sent directly to the NXB-KNX via Telnet terminal session.

In your terminal program, type "**Help**" or a question mark ("**?**") and **<Enter>** to access the Help Menu, and display the Program port commands described below:

Terminal Commands	
Command	**Description**
`----- Help -----`	(Extended diag messages are OFF)
`? or Help`	Displays this list of commands.

`DATE`	Displays the current date and day of the week.
	Example:
	`>DATE`
	`10/31/2004 Wed`

`DISK FREE`	Displays the total bytes of free space available.
	Example:
	`>DISK FREE`
	`The disk has 2441216 bytes of free space.`

`DNS LIST <D:P:S>`	Displays the DNS configuration of a specific device including:
	• Domain suffix·
	• Configured DNS IP Information
	Example:
	`>DNS LIST [0:1:0]`
	`Domain suffix:amx.com`
	`The following DNS IPs are configured`
	`Entry 1-192.168.20.5`
	`Entry 2-12.18.110.8`
	`Entry 3-12.18.110.7`

`ECHO ON|OFF`	Enables/Disables echo (display) of typed characters.
`GET JAVA HEAP`	Display the amount of memory allocated for Java pool. This is the current Java memory heap size as measured in Mega-bytes. Example: a value of 5 = 5 MB.

`GET ETHERNET MODE`	Displays the current ethernet configuration setting.
	Settings are either "auto" in which the ethernet driver will discover it's settings based on the network it is connected to OR <speed> and <duplex> where speed is either 10 or 100 and duplex is either full or half.
	Example:
	`>GET ETHERNET MODE`
	`Ethernet mode is auto.`
	***Note**: See SET ETHERNET MODE.*

`GET IP`	Displays the current IP configuration.
	Example:
	`>GET IP`
	`IP Settings`
	`HostName MLK_INSTRUCTOR`
	`Type DHCP`
	`IP Address 192.168.21.101`
	`Subnet Mask 255.255.255.0`
	`Gateway IP 192.168.21.2`
	`MAC Address 00:60:9f:90:0d:39`

`IPSEC ON|OFF|STATUS`	Enables/Disables IPSec security or displays current setting.

Terminal Commands (Cont.)	
Command	**Description**

MEM	Displays the largest free block of the NXB-KNX's memory.
	Example:
	`>MEM`
	`The largest free block of memory is 11442776 bytes.`

MSG ON|OFF	Enables/Disables extended diagnostic messages.
	• MSG On sets the terminal program to display all messages generated by the NXB-KNX.
	• MSG OFF disables the display.
	Example:
	`> MSG ON`
	`Extended diagnostic information messages turned on.`
	`> MSG OFF`
	`Extended diagnostic information messages turned off.`

PING [ADDRESS]	Pings an address (IP or URL), to test network connectivity to and confirms the presence of another networked device. The syntax is just like the PING application in Windows or Linux.
	Example:
	`>ping 192.168.29.209`
	`192.168.29.209 is alive.`

PWD	Displays the name of the current directory.
	Example:
	`pwd`
	`The current directory is doc:`

REBOOT	Reboots the NXB-KNX.
	Example:
	`>REBOOT`
	`Rebooting...`

RELEASE DHCP	Releases the current DHCP lease for the NXB-KNX. ***Note**: The NXB-KNX must be rebooted to acquire a new DHCP lease.* Example: `>RELEASE DHCP`
SECURITY SETUP	Modify system security settings.

SET DATE	Prompts you to enter the new date for the NXB-KNX.
	Example:
	`>SET DATE`
	`Enter Date: (mm/dd//yyyy) ->`
	***Note**: Due to the absence of a battery-backed real-time clock, setting the current date is only valid for the life of the current run. When the unit is rebooted, the date will be lost.*

Terminal Commands (Cont.)	
Command	**Description**

SET DNS	Sets up the DNS configuration.
	This command prompts you to enter a Domain Name, DNS IP #1, DNS IP #2, and DNS IP #3.
	Then, enter Y (yes) to approve/store the information in the NXB-KNX.
	Entering N (no) cancels the operation.
	***Note**: The device must be rebooted to enable new settings.*
	Example:
	`>SET DNS`
	`-- Enter New Values or just hit Enter to keep current settings --`
	`Enter Domain Suffix: amx.com`
	`Enter DNS Entry 1 : 192.168.20.5`
	`Enter DNS Entry 2 : 12.18.110.8`
	`Enter DNS Entry 3 : 12.18.110.7`
	`You have entered: Domain Name: amx.com`
	`DNS Entry 1: 192.168.20.5`
	`DNS Entry 2: 12.18.110.8`
	`DNS Entry 3: 12.18.110.7`
	`Is this correct? Type Y or N and Enter -> Y`
	`Settings written. Device must be rebooted to enable new settings`

SET JAVA HEAP	Set the amount of memory allocated for the Java pool. This is the current Java memory heap size as measured in Megabytes. Valid values = 2 - 8 This setting does not take effect until the next reboot.

SET ETHERNET MODE <CMD>	This command sets the current ethernet configuration settings - auto OR speed = 10 | 100, duplex = full | half.
	Example:
	`set ethernet mode auto`
	`set ethernet mode speed=100 duplex=full`
	***Note**: See GET ETHERNET MODE.*

SET FTP PORT	Enables/Disables the NXB-KNX's IP port listened to for FTP connections.
	***Note**: The NXB-KNX must be rebooted to enable new settings.*
	Example:
	`>SET FTP PORT`
	`FTP is enabled`
	`Do you want to enable (e) or disable (d) FTP (enter e or d):`
	`FTP enabled, reboot the NXB-KNX for the change to take affect.`

SET HTTP PORT	Sets the NXB-KNX's IP port listened to for HTTP connections.
	***Note**: The NXB-KNX must be rebooted to enable new settings.*
	Example:
	`>SET HTTP PORT`
	`Current HTTP port number = 80`
	`Enter new HTTP port number (Usually 80) (0=disable HTTP):`
	`Setting HTTP port number to`
	`New HTTP port number set, reboot the NXB-KNX for the change to take affect.`

Terminal Commands (Cont.)	
Command	**Description**

SET HTTPS PORT	Sets the NXB-KNX's IP port listened to for HTTPS connections.
	***Note**: The NXB-KNX must be rebooted to enable new settings.*
	Example:
	`>SET HTTPS PORT`
	`Current HTTPS port number = 443`
	`Enter new HTTPS port number (Usually 443) (0=disable HTTPS):`
	Once you enter a value and press the ENTER key, you get the following message:
	`Setting HTTPS port number to`
	`New HTTPS port number set, reboot the NXB-KNX for the change to take affect.`

SET IP	Sets the IP configuration.
	Enter a Host Name, Type (DHCP or Fixed), IP Address, Subnet Mask, and Gateway IP Address.
	***Note**: For NetLinx Central Controllers, the "Host Name" can only consist of alphanumeric characters.*
	• Enter Y (yes) to approve/store the information into the NXB-KNX.
	• Enter N (no) to cancel the operation.
	***Note**: The NXB-KNX must be rebooted to enable new settings.*
	Example:
	`>SET IP`
	`--- Enter New Values or just hit Enter to keep current settings ---`
	`Enter Host Name: MLK_INSTRUCTOR`
	`Enter IP type. Type D for DHCP or S for Static IP and then Enter:`
	`DHCP`
	`Enter Gateway IP: 192.168.21.2`
	`You have entered: Host Name MLK_INSTRUCTOR`
	`Type DHCP`
	`Gateway IP 192.168.21.2`
	`Is this correct? Type Y or N and Enter -> y`
	`Settings written. Device must be rebooted to enable new settings.`

SET LOG COUNT	Sets the number of entries allowed in the message log.
	***Note**: The NXB-KNX must be rebooted to enable new settings.*
	Example:
	`>SET LOG COUNT`
	`Current log count = 1000`
	`Enter new log count (between 50-10000):`
	Once you enter a value and press the ENTER key, you get the following message:
	`Setting log count to`
	`New log count set, reboot the NXB-KNX for the change to take affect.`

SET SSH PORT	Sets the NXB-KNX's IP port listened to for SSH connections.
	***Note**: The NXB-KNX must be rebooted to enable new settings.*
	Example:
	`>SET SSH PORT`
	`Current SSH port number = 22`
	`Enter new SSH port number (Usually 22) (0=disable SSH):`
	Once you enter a value and press the ENTER key, you get the following message:
	`Setting SSH port number to 22`
	`New SSH port number set, reboot the NXB-KNX for the change to take affect.`

Terminal Commands (Cont.)	
Command	**Description**

SET TELNET PORT	Sets the NXB-KNX's IP port listened to for Telnet connections.
	***Note**: The NXB-KNX must be rebooted to enable new settings.*
	Example:
	`>SET TELNET PORT`
	`Current telnet port number = 23`
	`Enter new telnet port number (Usually 23)(0=disable Telnet):`
	Once you enter a value and press the ENTER key, you get the following message:
	`Setting telnet port number to 23`
	`New telnet port number set, reboot the NXB-KNX for the change to take affect.`

SET TIME	Sets the current time.
	Example:
	`>SET TIME`
	`Enter Date: (hh:mm:ss) ->`
	***Note**: Due to the absence of a battery-backed real-time clock, setting the current time is only valid for the life of the current run. When the unit is rebooted, the time will be lost.*

SHOW LOG	Displays the log of messages stored in the NXB-KNX's memory.
	The NXB-KNX logs all internal messages and keeps the most recent messages. The log contains:·
	• Entries starting with first specified or most recent
	• Date, Day, and Time message was logged
	• Which object originated the message
	• The text of the message:
	`SHOW LOG [start] [end]`
	`SHOW LOG ALL`
	- <start> specifies message to begin the display.
	- If start is not entered, the most recent message will be first.
	- If end is not entered, the last 20 messages will be shown.
	- If <ALL> is entered, all stored messages will be shown, starting with the most recent.
	Example:
	`>SHOW LOG`
	`Message Log for System 50 Version: v2.10.75`
	`Entry Date/Time Object`
	`Text`
	`----------`
	`1: 11-01-2001 THU 14:14:49 ConnectionManager`
	`Memory Available = 11436804 <26572>`
	`2: 11-01-2001 THU 14:12:14 ConnectionManager`
	`Memory Available = 11463376 <65544>`
	`3: 11-01-2001 THU 14:10:21 ConnectionManager`
	`Memory Available = 11528920 <11512>`
	`4: 11-01-2001 THU 14:10:21 TelnetSvr`
	`Accepted Telnet connection:socket=14 addr=192.168.16.110 port=2979`
	`5: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OnLine 10002:1:50`
	`6: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OnLine 128:1:50`
	`7: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OffLine 128:1:50`
	`8: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OnLine 96:1:50`
	`9: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OffLine 96:1:50`
	`10: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OnLine 128:1:50`
	`11: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OnLine 96:1:50`
	`12: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OnLine 5001:16:50`
	`13: 11-01-2001 THU 14:05:51 Interpreter`
	`CIpEvent::OnLine 5001:15:50`
	`14: 11-01-2001 THU 14:05:51 Interpreter`

Terminal Commands (Cont.)	
Command	**Description**
SHOW HEAP	Displays heap usage statistics.
SHOW MEM	Displays the memory usage for all memory types.

TIME	Displays the current time on the NXB-KNX.
	Example:
	`>TIME`
	`13:42:04`

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