



NK-IPS User Guide

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 - offer the best product quality and support
2. Make Cool Practical Technology
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David Ross
CEO, Ross Video
dross@rossvideo.com

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3. We will not ship crap.
4. We will be great to work with.
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6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

NK-IPS · User Guide

- Ross Part Number: **9807DR-1004-05**
- Release Date: December 13, 2017.

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Patents

Patent numbers US 7,034,886; US 7,508,455; US 7,602,446; US 7,802,802 B2; US 7,834,886; US 7,914,332; US 8,307,284; US 8,407,374 B2; US 8,499,019 B2; US 8,519,949 B2; US 8,743,292 B2; GB 2,419,119 B; GB 2,447,380 B; and other patents pending.

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This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a Commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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This Class A device complies with Canadian ICES-003 rules.

Cet appareil numérique de la classe "A" est conforme a la norme NMB-003 du Canada.

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This equipment is in compliance with the essential requirements and other relevant provisions established under regulation (EC) No 765/2008 and Decision No 768/2008/EC referred to as the "New Legislative Framework".



Warning — *This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.*

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Class A equipment (Broadcasting and communications service for business use).

This device is a business-use (Class A) EMC-compliant device. The seller and user are advised to be aware of this fact. This device is intended for use in areas outside home.

Type of Equipment	User's Guide
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
Class A Equipment (Industrial Broadcasting & Communication Equipment)	This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home.

International

This equipment has been tested under the requirements of CISPR 22:2008 or CISPR 32:2015 and found to comply with the limits for a Class A Digital device.

Notice — *This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.*

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The product is backed by a comprehensive one-year warranty on all components.

If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross' notification of change of ownership.

Environmental Information

The equipment may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration. You can also contact Ross Video for more information on the environmental performances of our products.

Company Address



Ross Video Limited

8 John Street
Iroquois, Ontario
Canada, K0E 1K0

Ross Video Incorporated

P.O. Box 880
Ogdensburg, New York
USA 13669-0880

General Business Office: (+1) 613 • 652 • 4886

Fax: (+1) 613 • 652 • 4425

Technical Support: (+1) 613 • 652 • 4886

After Hours Emergency: (+1) 613 • 349 • 0006

E-mail (Technical Support): techsupport@rossvideo.com

E-mail (General Information): solutions@rossvideo.com

Website: <http://www.rossvideo.com>

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Introduction

This guide is for system administrators and installers of the Ross Video NK-IPS Network Bridge. It provides instructions on how to physically install and configure your NK-IPS.

This guide includes the following chapters:

- “**Introduction**” summarizes the guide and provides important terms, and conventions.
- “**Getting Started**” provides an overview for using the NK-IPS in a routing system.
- “**Hardware Overview**” provides a basic introduction to the NK-IPS front and rear panels.
- “**Physical Installation**” provides instructions for the basic physical installation of the NK-IPS.
- “**Configuration**” provides instructions on how to connect the NK-IPS to a network, connecting a video reference signal, cabling for a Multiviewer Head, and connecting to source and destination devices.
- “**Operation**” provides additional information on the input and output designations for each NK-IPS.
- “**Using an NK-VCP**” provides information on using the NK Virtual Control Panel (NK-VCP) with the NK-IPS.
- “**DashBoard Interface Overview**” provides an overview of the DashBoard menus and parameters available for the NK-IPS.

If you have questions pertaining to installation of this Ross Video product, please contact us at the numbers listed in the section “**Contacting Technical Support**” on page 10. Our technical staff is always available for consultation, training, or service.

Related Publications

It is recommended to consult the following Ross documentation before installing your NK-IPS:

- *DashBoard User Guide*, Ross Part Number: 8351DR-004

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Interface Elements

Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example:

In the **Save Layout** dialog, click **OK**.

User Entered Text

Courier text is used to identify text that a user must enter. For example:

In the **Language** box, enter **English**.

Referenced Guides

Italic text is used to identify the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the *DashBoard User Guide*.

Menu Sequences

Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads “**File > Save**,” you would click the **File** menu and then click **Save**.

Important Instructions

Star icons are used to identify important instructions or features. For example:

- ★ When the NK-IPS cannot connect to the network, a **Message** dialog box opens to report the connection problem.

Contacting Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (Eastern Time), technical support personnel are available by telephone. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Technical Support:** (+1) 613-652-4886
- **After Hours Emergency:** (+1) 613-349-0006
- **E-mail:** techsupport@rossvideo.com
- **Website:** <http://www.rossvideo.com>

Getting Started

The NK-IPS is the external gateway to all NK Series devices for configuration, firmware upgrades, monitoring, and remote control. This chapter provides a general overview of the NK-IPS functions and role in your routing system.

General Overview

The NK-IPS provides an Ethernet port that connects to a LAN or directly to a computer. This port is used to communicate to a web browser or the DashBoard Control System to configure and control the NK Series Routing System.

The NK-IPS is also equipped with a buffered 8-port T-Bus hub. T-Bus is the RS-485 based communications system the NK Series uses to communicate between devices such as remote control panels and frames. Each T-Bus port can support multiple devices in a daisy chain configuration.

Figure 2.1 provides a simplified example and may differ from what your facility requires.

1. The NK-VRC receives data from the RCP-NK1.
2. The NK-VRC then sends the physical data to the NK Series router.
3. Upon activation, a switch completion message is returned to the NK-VRC.
4. The NK-VRC converts the physical data to virtual data and returns it to the remote control panel.

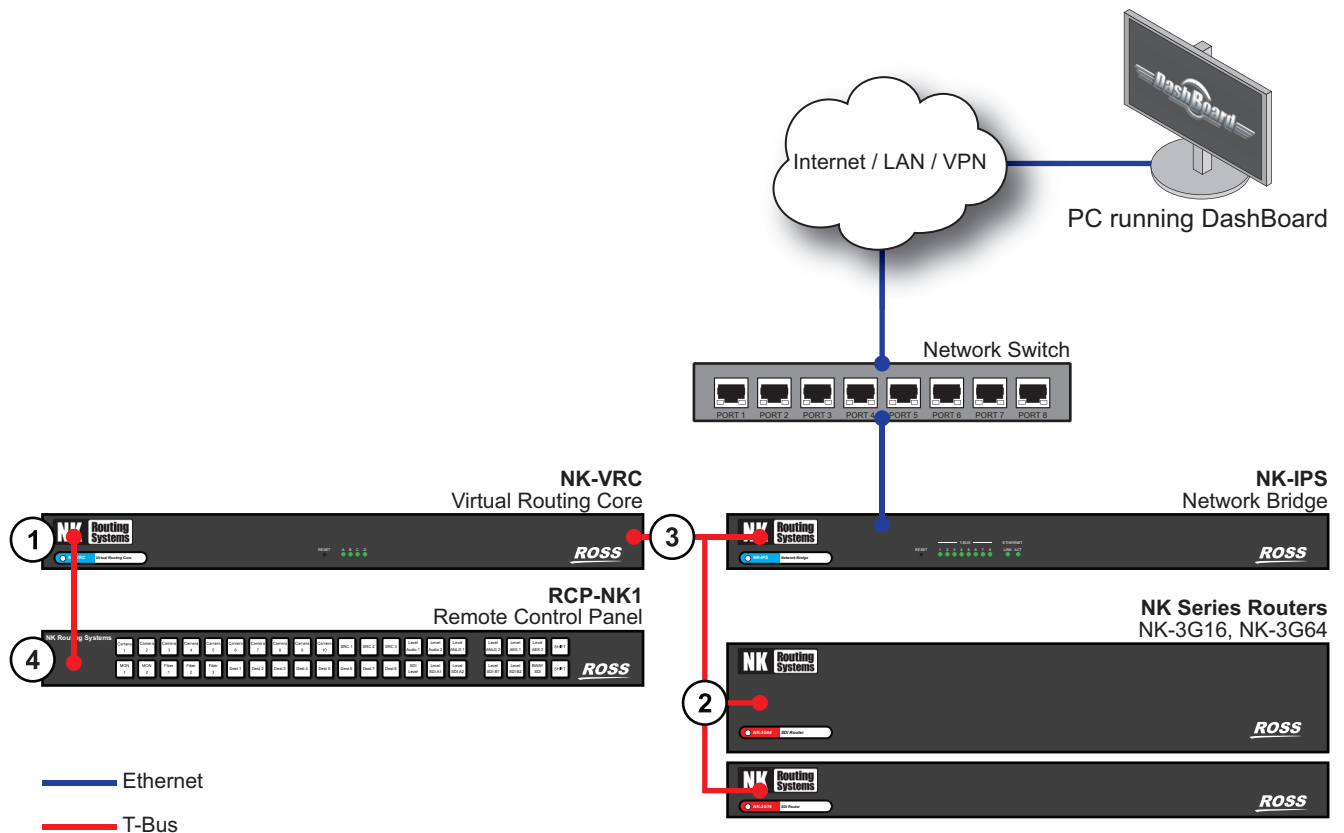


Figure 2.1 Example of the NK-IPS in a Routing System

Features

The NK-IPS includes the following features:

- Network configuration and monitoring of NK Series devices via DashBoard
- Compact size: 1RU, depth 2.4cm
- Password protection to prevent unauthorized changes
- Front panel status and communication indicators
- 8 port hub for T-Bus compliant devices
- 10/100 Ethernet port
- Supports static or DHCP assigned IP addressing
- Universal power supply included
- Optional redundant power supply available

Hardware Overview

This chapter presents information on the NK-IPS front and rear panels.

Front Panel Overview

The NK-IPS front panel includes status LEDs for T-Bus and network activity, as well as a RESET button.

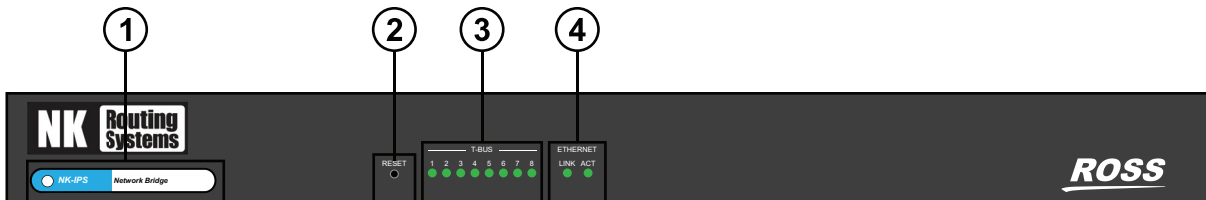


Figure 3.1 NK-IPS — Front Panel Overview

- | | |
|-----------------|-----------------------|
| 1) Heartbeat | 3) T-BUS COMM LEDs |
| 2) Reset Button | 4) ETHERNET COMM LEDs |

1. Heartbeat

The NK-IPS reports the status by a pulsating LED, called a heartbeat.

Heartbeat Behavior	Display and Description
Flickers	A switch message is handled by the NK-IPS
Dims	Indicates a handled message that did not result in a switch
Flashes rapidly	An error condition is reported by the power supply

2. Reset Button

The **Reset** button can be used in the event of device failure where the Heartbeat stops pulsing, the **ETHERNET LNK** LED turns off, or the **ETHERNET ACT** LED stops flashing. In some cases, looping or daisy-chaining too many devices on one line may cause a communication failure or a power dropout (with devices that are supplied phantom power via the T-Bus line).

The **Reset** button can be used as a last resort if errors are encountered, but no physical problem can be sourced (disconnected or severed CAT5, power cable, etc.). Pushing the **Reset** button resets the NK-IPS.

3. T-BUS COMM LEDs

The front panel includes eight T-BUS LEDs that each represent a T-BUS connector on the rear panel of the NK-IPS. These LEDs will light when data is transmitted to, or sent from, the NK-IPS.

4. ETHERNET COMM LEDs

Table 3.1 Front Panel LEDs

LED	Status	Description
LNK	Green	A valid physical ethernet connection is established, and the port is active. There is data transfer activity on the indicated Ethernet port.
ACT	Flashing Green	Network activity is transmitted or received.

Rear Panel Overview

The rear panel provides connections for power and communications.

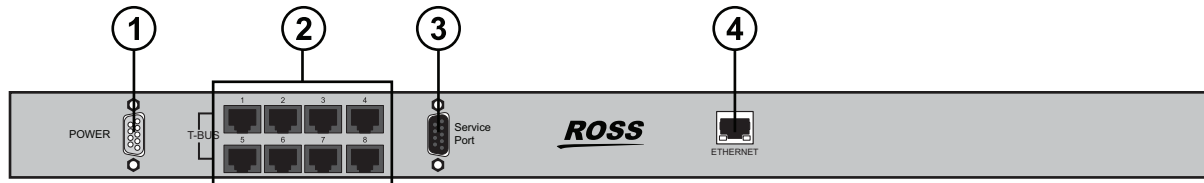


Figure 3.2 NK-IPS — Rear Panel Overview

1) PSU Connection	3) Service Port
2) T-BUS Connections	4) ETHERNET Connection

1. PSU Connection

The NK-IPS is powered by a +15V DC external power supply. This can be either an NK-RP1 power supply which is shipped as standard or an NK-RP1/NK-RPN1 redundant power supply purchased as an option.

2. T-BUS Connections

The NK-IPS has eight T-BUS connections (RJ-45) to connect to devices. This provides options for connection of T-Bus devices either as a daisy-chained or star configuration, or a combination of the two topologies.

3. Service Port

The Service port is a RS-232 connection for factory use only (service and maintenance) and is not for customer use.

4. ETHERNET Connection

The Ethernet port is an RJ45 connector used to connect the NK-IPS to a network hub or network card.

★ The NK-IPS does not require Internet access for operation. However, the DashBoard software is required for operation and configuration.

Physical Installation

If you have questions pertaining to the installation of your NK-IPS, please contact us at the numbers listed in the section “**Contacting Technical Support**” on page 10.

Before You Begin

Notice — *The NK-IPS utilizes side-to-side airflow management (right to left looking at the front of the chassis). It is a requirement that the sides of the mounted NK-IPS router are not obscured.*

These installation guidelines assume the following:

- The relevant Ross equipment is installed into a ventilated rack frame. The relative humidity in the environment of the equipment should be <70% (non-condensing). The ambient temperature of the air entering the front panel should not exceed 40°C (104°F), and should not fall below 0°C (32°F). It is recommended to leave a 1RU gap between each module.
 - Ensure that adequate space exists in front, behind, and on both sides of the NK-IPS for airflow exhaust.
 - Ensure that adequate space exists on both sides of the NK-IPS and side access is not blocked from the rear.
 - If a Ross openGear frame is included in the installation, it is recommended that the NK-IPS be installed directly above the openGear frame.
 - The install location of the NK-IPS should be accessible, dry, and dust-free.
 - The socket/outlet should be installed near the equipment and be easily accessible.
 - Valid IP addresses are assigned to the equipment.
- ★ If difficulties or problems are experienced when connecting the NK-IPS to a network hub, or with assigning IP addresses, contact your network administrator.

Static Discharge

Throughout this chapter, please heed the following cautionary note:



ESD Susceptibility — *Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments such as carpeted areas and when synthetic fiber clothing is worn. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

Mounting Requirements

The NK-IPS is designed for installation into a standard 19” equipment rack. It has integrated rack ears, allowing it to be screwed in using standard screws and cage nuts.

The NK-IPS mounts in the rack frame by means of four rack screws fastened through the front mounting ears. This should normally be sufficient to carry the load, including the weight of accompanying cables.

Under some conditions, the ambient air temperature inside rack-mount cabinets can be greater than the ambient temperatures within a room. Adequate ventilation within a rack frame must be maintained.

For More Information on...

- the technical specifications for the NK-IPS, refer to the chapter “**Technical Specifications**” on page 45.

Connecting the NK-IPS to a Network

The NK-IPS can be connected directly to your network so that it can interface with the devices and the computer running the DashBoard client. After a physical connection is established, DashBoard is used to configure the network settings for the NK-IPS.

For More Information on...

- downloading and installing DashBoard, refer to the *DashBoard User Manual*.

To establish a physical connection to the network

1. Connect one free end of a standard CAT 5 Ethernet cable to a free port of the network hub.
2. Connect the other end of the same cable to the **ETHERNET** port on the rear of the NK-IPS.

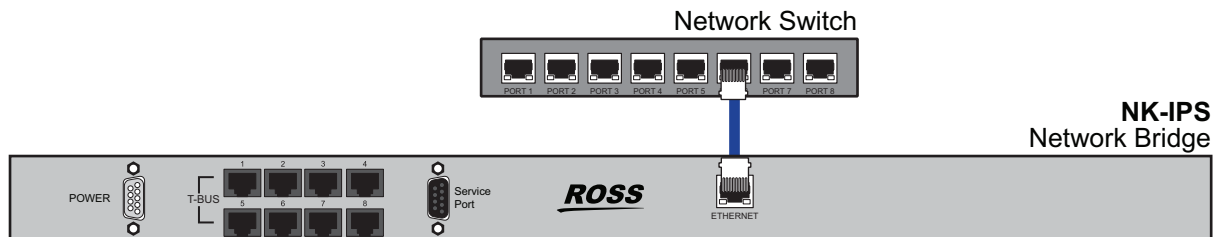


Figure 4.1 NK-IPS — Network Connections

Connecting the NK-IPS to a PC

The NK-IPS can be connected to a single PC (a computer that is on the same network as your routing system), or stand-alone PC (a computer that is not on a network) for configuration purposes. After a physical connection is established, the IP Address of the PC can be configured and can be used to configure the IP Address for the NK-IPS.

- If a PC that is on a network is used to interface with the NK-IPS, a spare network card is required to connect the two (the other network card is used to communicate with the network).
- If a PC that is not on a network is used to interface with the NK-IPS, only one network card is required to connect the two.

Keep the following in mind:

- Use a crossover CAT5 cable to connect the NK-IPS and the PC (this is in contrast to connecting directly to a network, where a straight through CAT5 cable is used for the connection).
- If a small standalone Ethernet hub is accessible, two standard CAT5 cables can be used. The first cable is used to connect the PC to the Ethernet hub while the second connects the Ethernet hub to the NK-IPS.
- ★ If the PC does not support Auto MDIX, a crossover cable must be used.

To connect the NK-IPS to a single PC that is on a network or a standalone PC that is not on a network

1. Connect one free end of the CAT5 crossover cable to the free network card of the PC.
2. Connect the other free end of the CAT5 crossover cable to the **ETHERNET** port on the rear of the NK-IPS.
3. Alternatively, if a small standalone Ethernet hub is accessible, two standard CAT5 cables can be used. The first cable connects the PC to the Ethernet hub and the second connects the Ethernet hub to the NK-IPS.

Connecting the NK-IPS to Ross NK Series Devices

Most Ross NK Series devices, such as routers, panel, and control devices, are equipped with two RJ-45 ports for looping or daisy chaining devices. Refer to the user documentation that came with your device for connection details.

To connect the NK-IPS to other NK Series devices

1. Connect a CAT5 cable to one of the **T-Bus** RJ-45 ports on the rear of the NK-IPS.
2. Connect the other end to either of the RJ-45 ports of the NK Series device.

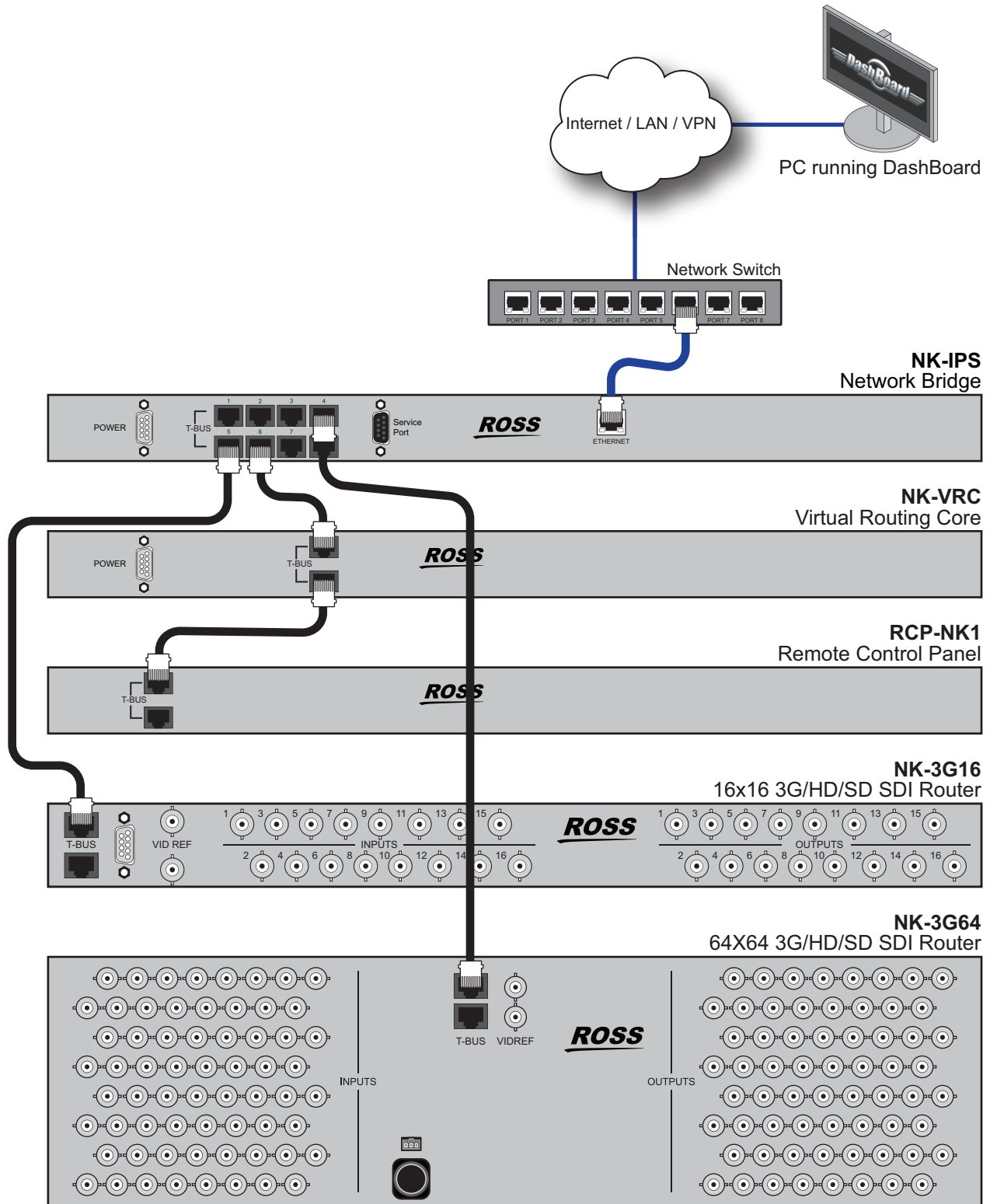


Figure 4.2 NK-IPS — Example Connection to Ross NK Series Devices

Powering on the NK-IPS

Each NK-IPS is powered by a +15V DC external power supply. This can be either an NK-RP1 power supply which is shipped as standard or an NK-RP1/NK-RPN1 redundant power supply purchased as an option.

For redundancy, each power cord should be connected to a separate power source for protection against failure of the A/C power circuit. In the event of one power supply failure, the panel load is seamlessly transferred to the other connected redundant power supplies.



Warning Hazardous Voltages — *The safe operation of this product requires that a protective earth connection be provided. This protective earth is provided by the ground conductor in the equipment's supply cord. To reduce the risk of electrical shock to operator and service personnel, this ground connector must be connected to an earthed ground.*



Warning — *In some countries it may be necessary to supply the correct mains supply cord. Use only certified cords for the country of use.*

To connect the power cables to the NK-IPS

1. Connect the male end of the provided power cable into the socket marked **POWER**.

Note: It is recommended that you always connect the Power Supply Unit to the NK-IPS before connecting to Mains Power.

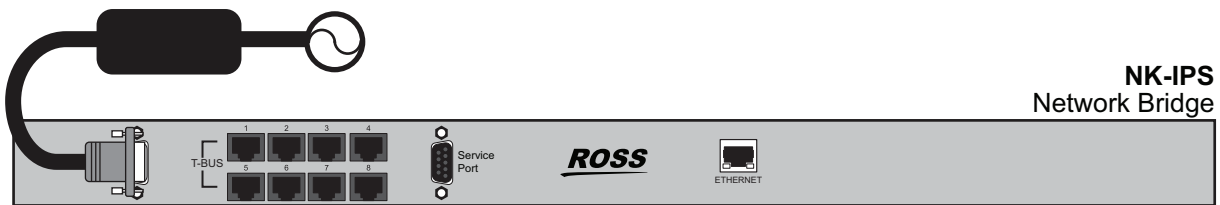


Figure 4.3 NK-IPS — Power Connection



Notice — *The NK-IPS automatically powers on when power is applied.*

2. Connect the supplied AC power cable into the power module.
3. Connect the supplied power cable to Mains Power.

Configuration

Before proceeding, ensure that you have DashBoard installed on a PC that is connected to the same network as your routing system.

Configuring the IP Addresses

Once either a single PC or a standalone PC has been physically connected to the NK-IPS, the IP address for both the PC and the NK-IPS needs to be configured. It is recommended that users familiar with networking configure the IP addresses for both a single and a standalone PC, as well as the NK-IPS.

This topic only applies to single or standalone computers connecting to the NK-IPS; it does not apply when the NK-IPS is connected directly to the network.

Using DashBoard

The DashBoard client software allows configuration and monitoring of some NK Series devices, and provides access to other devices in your routing system. DashBoard communicates with devices in your routing system through the NK-IPS.

DashBoard must be run on a computer that has a physical wired ethernet connection. Wireless connections do not allow device discovery.

For More Information on...

- downloading and installing the DashBoard client software, refer to the *DashBoard User Guide*.

Launching DashBoard

DashBoard must be run on a computer that has a physical wired ethernet connection. Wireless connections do not allow device discovery.

For More Information on...

- downloading and installing the DashBoard client software, refer to the *DashBoard User Guide*.

To launch DashBoard

1. Ensure that you are running DashBoard software version 8.0 or higher.
2. Launch DashBoard by double-clicking its icon on your computer desktop.

Navigating to the NK Series IPS Interfaces

The NK Series IPS interface is accessed via the Tree View in DashBoard.

To access the NK Series IPS interface in DashBoard

1. Launch DashBoard.
2. Locate the NK-IPS node in the Basic Tree View of DashBoard.
3. Expand the NK-IPS node in the Basic Tree View.
A list of devices communicating with the NK-IPS are displayed as sub-nodes.
4. Double-click the sub-node for the NK-IPS you wish to configure.


The **NK Series IPS** interface opens in DashBoard.

Navigating to the NK Switchboard Interface

The NK Switchboard enables the routing matrix to be monitored and optionally controlled on any router on any NK-IPS detected on the network. The NK Switchboard is configured using the NK Switchboard tab in DashBoard.

★ It is recommended to configure the NK Switchboard globally before performing any switches.

To navigate to the NK Switchboard interface


1. Once DashBoard has been installed.
2. Click  Switchboard from the toolbar.

If the Switchboard has already been opened in the work area, activating it from either the menu or the toolbar will open it as a tab in DashBoard.

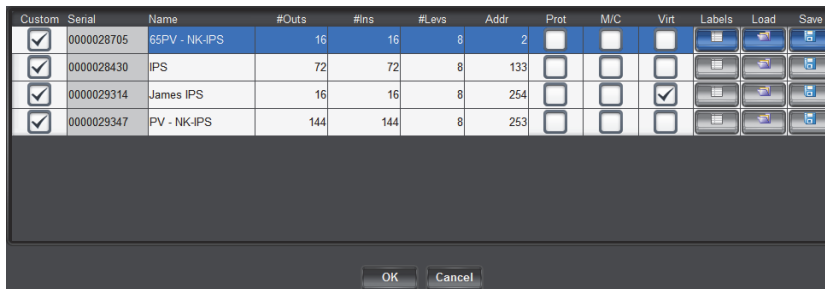
Navigating to the Configure IPS Dialog

From the **Configure IPS** dialog you can configure the number of inputs, outputs, and level, enable protects, and machine control functions for each NK-IPS detected in the routing system.

To navigate to the Configure IPS dialog

1. Display the **NK Switchboard** interface as outlined in the procedure “**To navigate to the NK Switchboard interface**” on page 20.
2. Click .

The **Configure IPS** dialog opens.



Custom	Serial	Name	#Outs	#Ins	#Levs	Addr	Prot	M/C	Virt	Labels	Load	Save
<input checked="" type="checkbox"/>	0000028705	65PV - NK-IPS	16	16	8	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input checked="" type="checkbox"/>	0000028430	IPS	72	72	8	133	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input checked="" type="checkbox"/>	0000029314	James IPS	16	16	8	254	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	0000029347	PV - NK-IPS	144	144	8	253	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Adding Connections to the Tree View in DashBoard

Once you have assigned the NK-IPS a static IP Address, you can then manually add it to the Tree View. Manually adding the NK-IPS displays its node in the Tree View, granting you access to the interfaces described in the chapter “**DashBoard Interface Overview**” on page 37.

Using the NK-IPS Connection Interface

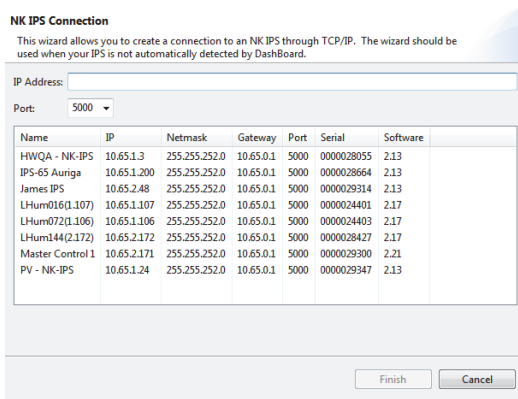
The NK-IPS Connection interface enables you to use DashBoard to locate an NK-IPS, select an NK-IPS to add from the device list, or to manually add an NK-IPS by entering the network address. Information such as the device name, IP Address, netmask, gateway, port number, serial number, and software version are available in the NK-IPS Connection interface.

You begin by using the NK-IPS Connection interface to add an NK-IPS to the DashBoard Tree View and then querying NK-IPS devices on the network.

To open to the NK-IPS Connection interface

1. Launch DashBoard.
2. In the main toolbar of DashBoard, select **File > NK IPS Connection**.

The **NK-IPS Connection** interface opens and lists the NK-IPS devices on the network.



3. Verify that the required NK-IPS device(s) are listed in the interface.
4. Click **Finish** to close the interface.

Manually Adding an NK-IPS to the Tree View in DashBoard

If an NK-IPS is not listed in the **NK-IPS Connection** interface, it can be manually added by entering its IP Address via the **Manual Connection** dialog.

To manually add an NK-IPS connection in DashBoard

1. Launch DashBoard.
2. In the main toolbar of DashBoard, select **File > Manual Connection**.

The **Manual Connection** interface opens.

3. Enter the IP Address for the NK-IPS in the **IP Address** field.
4. Click **Finish**.

The NK-IPS displays in the **Tree View**.

Configuring the Communication Settings for the NK-IPS

Use the NK Series IPS interface in DashBoard to configure the interface and security options for the NK-IPS such as assigning a unique name to the device, assigning a T-Bus Address, setting up communication for the MC-1 and specifying the DashBoard client connection details.

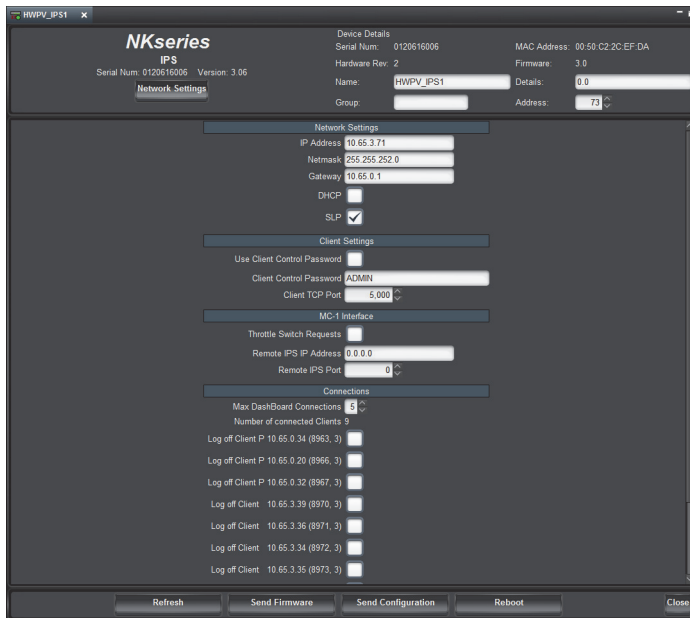
Updating the Network Settings for the NK-IPS

Once you establish initial communications with the NK-IPS, and it displays in the DashBoard Tree View, you may wish to review or change the IP address and other network settings according to your facility network requirements.

★ This section is not applicable if your NK-IPS is already set to the correct IP address.

To update the network settings for an NK-IPS

1. Display the **NK Series IPS** interface as outlined in the procedure “**To access the NK Series IPS interface in DashBoard**”.
2. Locate the **Network Settings** area in the NK Series IPS interface.



3. To assign a static IP Address:
 - a. Use the **IP Address** field to specify the new static IP Address for the NK-IPS.
 - b. Use the **Netmask** field to specify the subnet mask for your network.
 - c. Use the **Gateway** field to specify the default gateway for communication outside of the local area network (LAN).
4. If you want the NK-IPS network settings to be automatically obtained, select the **DHCP** check box.
- ★ When DHCP is enabled, the NK-IPS will attempt to acquire network settings from a DHCP server on power up. If successful, the NK-IPS will use the acquired network settings. If it is unable to acquire the network settings after one minute, the NK-IPS will use the following values: IP Address of 192.168.20.100, Netmask of 255.255.255.0, and Gateway of 0.0.0.0.
5. Click **Send Configuration** to apply the new settings.

Assigning a T-Bus Address to the NK-IPS

The T-Bus address is used to identify the NK-IPS within your routing system and help avoid hardware and communication conflicts if you have multiple NK Series devices.

To assign a T-Bus Address to the NK-IPS

1. Display the **NK Series IPS** interface as outlined in the procedure “**To access the NK Series IPS interface in Dashboard**”.
2. Locate the **Device Details** area, located at the top of the NK Series IPS interface.
3. Use the **Name** field to assign a unique identifier to the NK-IPS.
4. Use the **Details** field to provide additional information about the NK-IPS such as its physical location.
5. Use the **Address** field to assign a unique T-Bus address to this NK-IPS within your control system.
6. Click **Send Configuration** to apply the new settings.

Assigning the NK-IPS to a Device Group

This section is applicable if you have chosen to organize the devices in your routing system into logical groups. For example, you can assign separate group numbers for devices based on their physical location with your facility. The

Group field in the **NK Series IPS** interface enables you to specify the Group that the NK-IPS is included in. This field has a maximum of 10 characters and by default is blank.

To assign the NK-IPS to a Group

1. Display the **NK Series IPS** interface as outlined in the procedure “**To access the NK Series IPS interface in DashBoard**”.
2. Locate the **Device Details** area, located at the top of the NK Series IPS interface.
3. Use the **Group** field to assign the NK-IPS to a specific group within your routing system.
4. Click **Send Configuration** to apply the new setting.

Enabling Automatic Device Discovery for the NK-IPS

The Automatic Device Discovery feature of DashBoard enables the Basic Tree View to automatically update when devices are detected on the same network as the DashBoard client computer. If Automatic Device Discovery is not enabled, or is unable to locate devices, devices can be manually added using the NK-IPS Connection interface.

This feature is automatically enabled by default on the NK-IPS (the **SLP** check box is selected in the **NK Series IPS** interface).

For More Information on...

- the Automatic Device Discovery feature in DashBoard, refer to the *DashBoard User Guide*.

Setting the Client Password for the NK-IPS

You can assign a password for the use of client devices (such as Virtual Control Panels) when these external devices issue switch requests to the NK-IPS. Assigning a password will request users to log on to allow switching routers connected to the NK-IPS. The password is case sensitive and has a maximum value of 20 characters.

To configure the client password for the NK-IPS

1. Display the **NK Series IPS** interface as outlined in the procedure “**To access the NK Series IPS interface in DashBoard**”.
 2. To use a password when applications external to the NK-IPS issue switch requests:
 - a. Use the **Client Control Password** field to specify the new password.
 - b. Select the **Use Client Control Password** check box.
- ★ When this check box is not selected, a password is not required, regardless of what text was entered into the Client Control Password field.
3. Click **Send Configuration** to apply the new settings.

Configuring the Communication Settings for an openGear MC1-MK

The NK series routers communicate via the NK-IPS over the Ross T-Bus protocol. The NK-IPS then communicates with the MC1-MK via an Ethernet protocol. This section outlines the settings that must be configured on the NK-IPS to establish a connection point with an MC1-MK. Refer to the *MC1-MK Installation Manual* for details on configuring the MC1-MK.

- ★ The NK-IPS must be running software version 3.11 or higher to communicate with the MC1-MK.

To create a connection point to the MC1-MK

1. Display the **NK Series IPS** interface as outlined in the procedure “**To access the NK Series IPS interface in DashBoard**”.
2. Locate the **MC-1 Interface** area in the NK Series IPS interface.
3. If the NK-IPS is the primary NK-IPS in the Master Control System:

- a. Select the **Throttle Switch Requests** check box to enable the serialize and re-transmit switch requests on the T-Bus when using an MC1-MK.
- b. Set the **Remote IPS IP Address** to **0.0.0.0**.
- c. Verify that the **Remote IPS Port** is set to **5000** (the default value).
4. If the NK-IPS is the secondary NK-IPS in the Master Control System:
 - a. Ensure the **Throttle Switch Requests** check box is cleared (not selected).
 - b. Use the **Remote IPS IP Address** field to specify the IP Address of the primary NK-IPS.
- ★ The Remote IPS IP Address and Remote IPS Port fields are only used when using a second NK-IPS to segregate traffic from other devices such as control panels and the NK-3RD.
 - c. Use the **Remote IPS Port field** to specify the TCP Client Port of the primary NK-IPS.
5. Click **Send Configuration** to apply the new settings.

Specifying the Client Connections

From the NK Series IPS interface, you can specify the maximum number of DashBoard clients that can connect to the NK-IPS.

Specifying the DashBoard Client Connections

In the instance that the maximum number of DashBoard clients are connected,

To specify the DashBoard client connections to the NK-IPS

1. Display the **NK Series IPS** interface as outlined in the procedure “**To access the NK Series IPS interface in DashBoard**”.
2. Locate the **Connections** area in the NK Series IPS interface.
3. Use the **Max. DashBoard Connections** field to enter a limit (up to 5) for the number of DashBoard clients that can connect to the NK-IPS. The default is 3.
- ★ This is only applicable to DashBoard client connections.
4. Click **Send Configuration** to apply the new settings.

Managing Client Devices

The **Number of connected Clients** field in the NK Series IPS interface reports how many client devices are connected to the NK-IPS. The maximum number of device clients is 20. If the maximum clients are already connected, DashBoard can auto-detect devices, but not auto-connect to them.

To disconnect a client device from the NK-IPS

1. Display the **NK Series IPS** interface as outlined in the procedure “**To access the NK Series IPS interface in DashBoard**”.
2. Locate the **Connections** area in the NK Series IPS interface.
3. In the provided list, locate the IP Address of the client device you wish to disconnect from the NK-IPS.
4. Select the applicable check box for the client device to disconnect.
5. Click **Send Configuration** to apply the new settings.

Specifying the Number of Inputs, Outputs, and Levels

The NK Switchboard interface enables the routing matrix to be monitored and optionally controlled on any router on any NK-IPS detected on the network. The number of inputs, outputs, and levels is configured using the Configure IPS options in the NK Switchboard interface.

- ★ It is recommended to configure the NK Switchboard settings globally before performing any switches.

Specifying the Number of Inputs, Outputs, and Levels

You can create a custom setup and save the settings to an *.nks file.

For More Information on...

- resource management, refer to the *NK-VRC User Guide*.

To specify the number of inputs, outputs, and levels in the NK Switchboard interface

1. Display the Configure IPS dialog as outlined in the procedure “**To navigate to the Configure IPS dialog**”.
2. In the **Configure IPS** dialog, locate the row for the NK-IPS you wish to configure.
3. To save the settings when saving to an *.nks file, select the **Custom** check box.
4. To specify the number of inputs:
 - a. Double-click the cell in the **#Ins** column for the applicable NK-IPS.
 - b. Enter the maximum number of inputs (sources) to display in the NK Switchboard interface.
5. To specify the number of outputs:
 - a. Double-click the cell in the **#Outs** column for the applicable NK-IPS.
 - b. Enter the maximum number of outputs (destinations) to display NK Switchboard interface.
6. To specify the number of levels:
 - a. Double-click the cell in the **#Levs** column for the applicable NK-IPS.
 - b. Enter the maximum number of levels to display NK Switchboard interface.
7. Click **OK** to apply the new settings and close the dialog.

Operation

The NK Switchboard enables the routing matrix to be monitored and optionally controlled on any router on any NK-IPS detected on the network. The NK Switchboard is configured using the NK Switchboard tab in DashBoard.

★ It is recommended to configure the NK Switchboard globally before performing any switches.

Source, Destination, and Level Buttons

The Input (Source), Output (Destination), and Level buttons displayed on the NK Switchboard can be edited individually on-the-fly as required by right-clicking on the desired button and editing the fields. The button edit menu enables users to define text labels for the buttons display (Edit Text), the relative input, output, or level value (Edit Value), as well as Add or Delete buttons.

The number of inputs, outputs, and levels can be configured using the **Configure IPS** dialog.

Level Buttons

The Level buttons, when selected, enable switching on the corresponding levels. The total number of Level buttons shown is reliant on the number entered in the Configure IPS dialog.

Source Buttons

The Input buttons select the source or sources to be switched on the levels previously selected. The total number of Input buttons shown is reliant on the number entered in the Configure IPS dialog box.

Output (Destination) Buttons

The Output buttons select the destination for the source to be switched on the levels previously selected. The total number of Output buttons shown is reliant on the number entered in the Configure IPS dialog box.

Virtual Routing Button

Press the **Virtual Routing** button to have NK Switchboard perform all switches in virtual routing mode. If de-selected, any routing devices controlled through NK Switchboard will use physical switching.

★ The NK-VRC virtual routing core is required for virtual routing and resource management.

Function Buttons

The NK Switchboard function keys provide Machine Control switching (the **MC** button) and protecting of selected inputs/outputs (the Protect button). For the Protect and MC buttons to be active, they must be enabled from the Configure IPS dialog box.

Protects

The NK Switchboard displays protected outputs by either a yellow highlight, or a pink highlight. Outputs that are highlighted yellow are protected by that computer and outputs that are highlighted pink are protected by another user or another panel in the system.

NK Switchboard Interface Overview

The NK Switchboard, accessible through DashBoard, acts as a virtual panel for any router device. The NK Switchboard enables control of multiple NK Series routers through multiple NK-IPS devices, with alternating between each NK-IPS as needed.

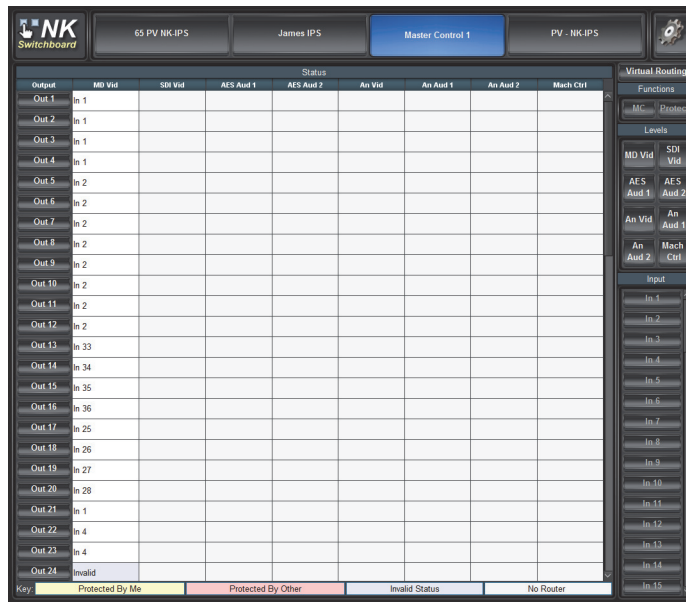


Figure 6.1 Example of the NK Switchboard Interface in Dashboard

Launching the NK Switchboard Interface

Once Dashboard is installed, the NK Switchboard can be accessed by clicking the NK Switchboard button from the toolbar. If the Switchboard is already open in the work area, activating it from either the menu or the toolbar will open it as a new tab in the Device View of Dashboard.

Protected Outputs

The NK Switchboard displays protected outputs by either a yellow highlight, or a pink highlight:

- Outputs that are highlighted yellow are protected by your Dashboard client computer.
- Outputs that are highlighted in pink are protected by another user or another panel in the system.
- ★ For the protect system to be accurate, each panel and computer running a Dashboard client must have its own unique address, specified in the Configure IPS dialog.

You enable the protect function on the specific NK-IPS and then select which outputs will be protected in the matrix.

To enable the Protect feature on an NK-IPS

1. Display the **Configure IPS** dialog as outlined in the procedure “**To navigate to the Configure IPS dialog**” on page 20.
2. In the **Configure IPS** dialog, locate the row for the NK-IPS you wish to configure.
3. Select the **Prot** check box for the NK-IPS.
4. Click **OK** to apply the new settings and close the dialog.

To apply a protect to an output

1. Display the NK Switchboard interface as outlined in the procedure “**To navigate to the NK Switchboard interface**” on page 20.
2. In the **Status** table, select the cell for the crosspoint you want to protect.
In the example below, Output 3 in Level 3 was selected.
3. From the **Functions** toolbar, located on the far right of the NK Switchboard interface, click **Protect**.
The cell for the selected Output now displays a yellow background.

Switching

The NK Switchboard is designed to emulate basic behavior of the RCP-NK1. The number of levels, inputs, and outputs, is determined by the settings in the Configure IPS dialog.

For More Information on...

- specifying the number of levels, outputs, and inputs in the NK Switchboard, refer to the section “**Specifying the Number of Inputs, Outputs, and Levels**” on page 24.

When an Output is selected, all Input buttons pressed thereafter will switch to that output. This is indicated by the blue line highlighting the current output selection.

To perform a crosspoint switch

1. Display the NK Switchboard interface as outlined in the procedure “**To navigate to the NK Switchboard interface**” on page 20.
2. From the top toolbar, select the NK-IPS to perform the crosspoint switch on.
The selected button is lit blue in the toolbar.
3. From the Levels toolbar, located on the far right of the NK Switchboard interface, click each Level(s) to be included in the switch.
4. From the Output toolbar, located on the far left of the NK Switchboard interface, select the Output to be switched.
5. From the Input toolbar, located on the far right of the NK Switchboard interface, click the input to be switched.

Enabling Machine Control

When Machine Control is enabled in the Configure IPS dialog,

To enable machine control for an NK-IPS

1. Display the Configure IPS dialog as outlined in the procedure “**To navigate to the Configure IPS dialog**” on page 20.
2. In the **Configure IPS** dialog, locate the row for the NK-IPS you wish to configure.
3. Select the **MC** box for the required NK-IPS.
4. Click **OK** to apply the new settings and close the dialog.

The **MC** button in the **Functions** toolbar of the NK Switchboard interface is now enabled (not grayed out).

Enabling Virtual Control

When Virtual Control is enabled in the Configure IPS dialog, pressing the Virtual Routing button in the NK Switchboard performs all switches in virtual routing mode.

★ The NK-VRC virtual routing core is required for virtual routing and resource management.

To enable virtual control for an NK-IPS

1. Display the Configure IPS dialog as outlined in the procedure “**To navigate to the Configure IPS dialog**” on page 20.
2. In the **Configure IPS** dialog, locate the row for the NK-IPS you wish to configure.
3. Select the **MC** box for the required NK-IPS.
4. Click **OK** to apply the new settings and close the dialog.

The **Virtual Routing** button in the **Functions** toolbar of the NK Switchboard interface is now enabled (not grayed out).

Using an NK-VCP

The NK Virtual Control Panel (NK-VCP) is a software application that communicates via the NK-IPS and enables monitoring and control of the router matrix. If required, it is also possible to control multiple systems, alternating between each as needed.

As the NK-VCP works in conjunction with the NK-IPS, NK-VCP control can be password protected to only allow authorized users to perform router functions.

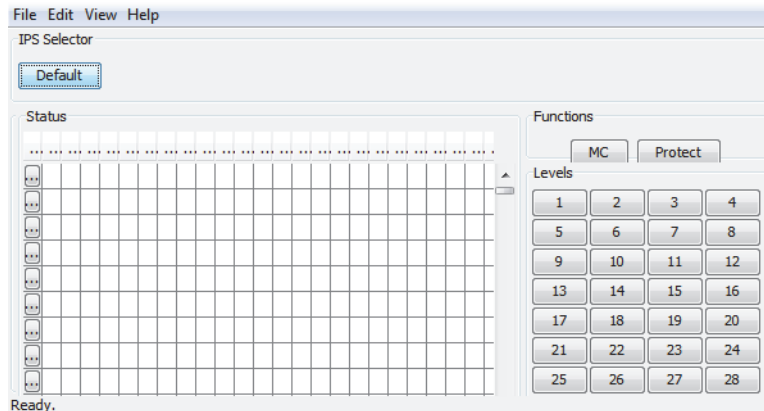


Figure 7.1 Example of the NK Virtual Control Panel

- ★ Although the NK-VCP will operate with Java Runtime Environment 1.4.2 and later, it is recommended that users have the latest JRE installed on their computer before using the NK-VCP.

Installing the NK-VCP

The NK-VCP runs in the Java® platform, using version 1.4.2 or later of the Java Runtime Environment (JRE). This allows the application to run on any system that supports the Java Virtual Machine (VM). The program runs on Microsoft® Windows®.

To use the NK-VCP, the Java Runtime Environment must first be present on your system. If this software is not present on your system, or if you are unsure, follow the guidelines below to ascertain whether it needs to be installed or updated.

- ★ NK-VCP is only supported Microsoft® Windows® based operating systems and will launch in 32-bit environments only.

System Requirements

- Intel® Pentium® 200Mhz or equivalent
- Microsoft® Windows® XP or later
- 32MB of RAM
- 150MB of available hard-disk space

Installing the Java Runtime Environment (JRE)

The Java Runtime Environment is required for NK-VCP operation. If you are unsure what version (if any) of the JRE is installed on your computer, you will need to open a command line prompt.

To determine previous JRE installations in Microsoft® Windows®

1. From the **Start** menu:
 - Select **All Programs > Accessories > Command Prompt** or,
 - Select **Run** and type **cmd**.
2. Once you have opened the Command Prompt:
 - a. Type **java -version**
 - b. Press **Enter**.
3. If you have JRE installed, a message will inform you of which version and build you are running, if you have an earlier version than 1.6, then you will need to download and install the latest version.
4. If you receive a message that says “**java is not recognized as an internal or external command**” then you will need to download and install the latest version.

Installing the NK-VCP Application

To install the NK-VCP

1. Navigate to the NK-VCP installation program.
2. Double-click **install.exe**.
3. Follow the on-screen instructions.

The installation wizard will guide you through the rest of the installation process.

Starting the NK-VCP

After installation, the NK-VCP can be started from the link placed on the desktop or from the **Start** menu. All communication requests and activity are shown in the bottom left corner of the NK-VCP interface.

Using the Preferences Dialog

The Preferences dialog box is used to add or change configuration of the NK-VCP, the NK-IPS device(s) to be interfaced, and the network details required for the NK-VCP and the NK-IPS to communicate with each other.

Table 7.1 NK-VCP Preferences Dialog

Item	Description
#	Indicates the NK-IPS available to the NK-VCP
IPS Name	Displays a unique name for each NK-IPS added to the NK-VCP. Unique or descriptive names can be assigned to identify NK-IPS devices in the system.
IP Address	Required for the NK-VCP to connect to an NK-IPS and is the link for network communications. The IP Address will first need to be detected via the IPS Connection interface in DashBoard and entered into this field.
Num Outs ^a	Specifies how many outputs are to be viewed and controlled by the NK-VCP for a specific NK-IPS.
Num Ins ^b	Specifies how many inputs are to be viewed and controlled by the NK-VCP for a specific NK-IPS.

Table 7.1 NK-VCP Preferences Dialog

Item	Description
Num Levels	Specifies how many levels are to be viewed and controlled by the NK-VCP for a specific NK-IPS. The maximum number of levels for the NK Series routers is eight, and the default value for any NK-IPS added to the NK-VCP is also eight.
Address	Defines the T-Bus Address that the NK-VCP will use when sending switch requests to the NK-IPS. By default, the NK-VCP's address is 253. If multiple NK-VCPs are to be used within one NK system, it is strongly recommended that they be given different addresses within that system because it is necessary for proper function of protects.
TCP Port	Defines which port is used for network communication. By default, the TCP Port is 5000 but must match the port defined on the NK-IPS network settings. Versions v1.00 to v1.02 of the NK-IPS Firmware used the TCP Port 4444, and was not configurable. The NK-VCP must be configured to this TCP Port when being used with early NK-IPS firmware. It is recommended that users upgrade NK-IPS firmware when using the NK-VCP. Firmware revisions can be determined by opening the tab of a device in the Basic Tree View section of DashBoard and viewing the Device Details section.

- a. If the output range of routers connected to the NK-IPS exceeds the number of outputs (Num Outs) specified in the Preferences dialog, the remaining outputs will not be shown on the NK-VCP.
- b. If the input range of routers connected to the NK-IPS exceeds the number of inputs (Num Ins) specified in the Preferences dialog, the remaining inputs will not be shown on the NK-VCP.

Adding an NK-IPS

Multiple NK-IPS configuration devices can be added to the one NK-VCP. When the NK-VCP is first loaded, the default NK-IPS will need to be configured.

To configure the default NK-IPS

1. Select **Edit > Preferences**.

The **Preferences** dialog opens.

#	IPS N...	IP Ad...	Num ...	Num Ins	Num ...	Address	Prot	M/C
1	Default	192.16...	16	16	8	253	<input type="checkbox"/>	<input type="checkbox"/>

Buttons: Add, Remove, TCP Port: 5000, Virtual: , Log to File: no File, OK

2. Locate the row for the NK-IPS in the dialog.
3. Use the **IPS Name** field to assign a unique identifier to the NK-IPS.
4. Use the **IP Address** field to specify the IP Address you entered in the procedure “**Adding Connections to the Tree View in DashBoard**” on page 20.

5. In the **Num Outs** field, enter the maximum number of outputs the NK-VCP will control via the NK-IPS.
6. In the **Num Ins** field, enter the maximum number of inputs the NK-VCP will control via the NK-IPS.
7. Use the **Address** field to specify the T-Bus address assigned to the NK-IPS.
8. Use the TCP Port field to specify the port used by the NK-IPS for network communications.
9. Select the **Prot** check box to recognized the Protected Outputs from the NK-IPS.
10. Select the **M/C** check box to enable Machine Control from the NK-IPS.
11. Click **OK** to apply the new settings and close the dialog.

To add another NK-IPSto the NK-VCP

1. Select **Edit > Preferences**.
The **Preferences** dialog opens.
2. Select the last row in the dialog.
3. Click **Add**.
4. Repeat steps 3 to 10 in the procedure “**To configure the default NK-IPS**” on page 33.
5. Click **OK** to apply the new settings and close the dialog.

Client Control Password

If the **Client Control Password** is enabled on an NK-IPS, users will be prompted to enter that password after the NK-IPS has been selected.

For More Information on...

- configuring a client control password on the NK-IPS, refer to the section “**Setting the Client Password for the NK-IPS**” on page 23.

★ When entered, passwords are masked. If an incorrect password is entered, an error message is displayed:

Selecting the Source, Destination, and Levels

The In (Source), Out (Destination), and Level buttons displayed on the NK-VCP can be edited as required by right-clicking on them. The button edit menu enables users to define the text the buttons display (Edit text), the respective input, output, or level value (Edit value), and Add or Delete buttons.

Overview

The Level buttons, when selected, enable switching on the required levels. The total number of Level buttons shown is reliant on the number entered in the Preferences dialog box.

The Input buttons select the source (or sources) to be switched on the levels previously selected. The total number of Input buttons shown is reliant on the number entered in the Preferences dialog box.

The Output buttons select the destination for the source to be switched on the levels previously selected. The total number of Output buttons shown is reliant on the number entered in the Preferences dialog box.

Switching

The NK-VCP is designed to emulate basic behavior of the RCP-NK1.

To perform switches via the NK-VCP

1. Select the Level(s) required to be switched.
2. Select the Output.

3. Select the Input.

When an Output has been selected, all Input buttons pressed thereafter will switch to that output. This is indicated by the blue line highlighting the current output selection.

Protecting Outputs

The **Protect** button is used to lock the current output (destination) from switching by other control panels or virtual control panels. If a switch is attempted for an output that has been protected, a message is displayed describing the cause of the error.

- Clicking **Protect** once will protect the current destination.
- Clicking **Protect** a second time will clear the protect.

Machine Control

The Machine Control button (MC) is used to reciprocally switch the source (master) and destination (slave) selected. Click MC to enable machine control operation and then press the required destination and source.

For More Information on...

- the Machine Control operation and reciprocal switching, refer to the *NK Series User Guide*.

DashBoard Interface Overview

The DashBoard client software enables you to monitor and configure your NK-IPS. Using the interfaces provided via the DashBoard client software, you can:

- Configure the network connection for your router
- Configure router levels and assign level names
- Assign physical router inputs and outputs to logical sources and destinations
- Configure source and destination labels
- Perform crosspoint preset/takes
- Monitor the status of multiple levels
- Create and use salvos

For More Information on...

- the DashBoard client software, refer to the *DashBoard User Manual*.

NK-IPS in DashBoard

NK-IPS groups the configuration, monitoring, and operating features in a Tree View in the DashBoard client window. Each node of the tree opens to reveal one or more sub-nodes, giving access to the features for your router.

NK-IPS includes the following interfaces, as separate nodes, in the DashBoard Tree View.

NK Series IPS Interface

The NK-IPS uses the NK Series IPS interface in DashBoard to allow users to configure interface and security options for the NK-IPS, as well as having the ability to assign a name and brief details for the device itself.

- ★ Any changes to the parameters on the NK Series IPS interface will need to be sent to the NK-IPS using the **Send Configuration** button before the changes take effect.

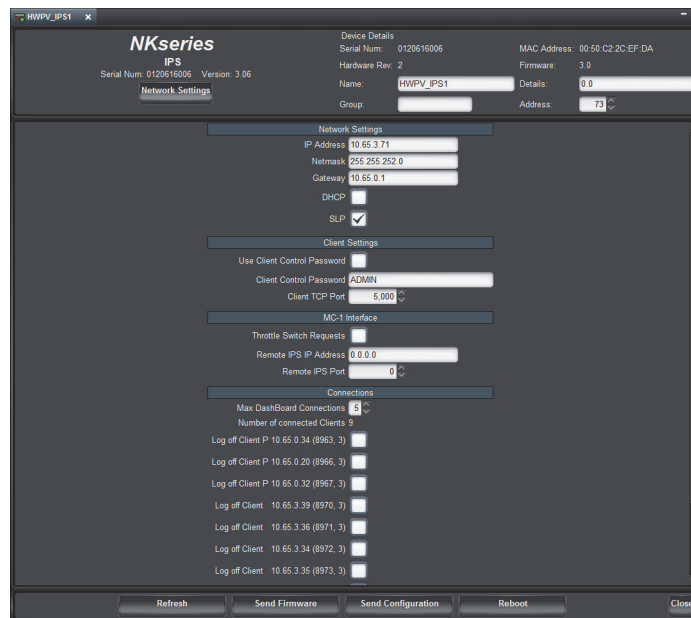


Figure 8.1 Example of an NK Series IPS Interface in DashBoard

Table 8.1 summarizes the fields and menus displayed in the NK Switchboard interface.

Table 8.1 NK Series IPS Interface

Item	Parameters	Description
Network Settings		Opens the Update IPS Network Settings dialog to configure the network settings for the NK-IPS
Device Details		
Serial Num	#	Indicates the unique serial number assigned to the NK-IPS (read-only)
Hardware Rev	#	Indicates the hardware version of the device
Name	<text>	Assigns a unique identifier to the device. This field has a maximum of 16 characters.
Group	#	Indicates the Group number the device is assigned to. This field has a maximum of 10 characters. By default it is blank.
MAC Address	#	Displays the Media Access Control address which is a unique hardware address for a device on a network (read-only)
Firmware	#	Indicates the firmware version used by the NK-IPS
Details	<text>	Additional details provided by the user to be used for description and identification only. This field has a maximum of 16 characters.
Address	#	This T-Bus address is used within the overall control system to identify devices. Each device must be given a unique T-Bus address to avoid hardware and communication conflicts. The valid range for assigning an individual device T-Bus address is 1-255.
Network Settings		
IP Address	###.###	Assigns a unique IP Address to the NK-IPS
Netmask	###.###	Assigns the netmask value to the NK-IPS
Gateway	###.###	Assigns the IP Gateway value to the NK-IPS
DHCP	Selected	Automates the assignment of the Ethernet settings for the NK-IPS
	Cleared	User must manually specify the Ethernet settings for the NK-IPS
SLP	Selected	Enables usage of Automatic Device Discovery in DashBoard. This is enabled by default.
	Cleared	Disables Automatic Device Discovery
Client Settings		
Use Client Control Password	Selected	A password is required when applications external to the NK-IPS issue switch requests
	Cleared	A password is not required for switch requests
Client Control Password	<text>	Assigns a password for the use of client devices. This field is case sensitive with a maximum value of 20 characters. The Use Client Control Password box must be selected.
Client TCP Port	#	Defines which port is used for network communication. The default value is 5000.
MC-1 Interface		

Table 8.1 NK Series IPS Interface

Item	Parameters	Description
Throttle Switch Requests	Selected	This is the primary NK-IPS when communicating with an openGear MC1-MK.
	Cleared	This device is not the primary NK-IPS for an MC1-MK, or an MC1-MK is not communicating with this device.
Remote IPS IP Address	###.#	For a primary NK-IPS, this field is set to 0.0.0.0. On a secondary NK-IPS, enter the IP address of the primary NK-IPS.
Remote IPS Port	#	For a primary NK-IPS, this field can be left to the default port of 5000. On a secondary NK-IPS, enter the TCP Client port of the primary NK-IPS.
Connections		
Max. DashBoard Connections	#	Specifies a limit to the number of DashBoard clients that the NK-IPS will allow at any given time (up to a maximum of 5). The default value is 3.
Number of connected Clients	#	Specifies how many clients are connected to the NK-IPS. The maximum total is 20.
Log off Client #	Selected	The NK-IPS disconnects from the client device
	Cleared	The NK-IPS communicates with the client device
Reset		
Reset IPS	Selected	Reboots the NK-IPS without clearing the NK-IPS settings. Any changes to the NK Series IPS interface are sent to the device.
	Cleared	Does not reboot the NK-IPS
Other Functions		
Refresh		Reverts to the configuration previously sent to the device. The NK Series IPS interface will display the last settings that were sent to the NK-IPS via the Send Configuration function.
Send Firmware		Opens a file browser to select a software/firmware file to send to the device
Send Configuration		Uploads the settings to the device. All configuration items become active only after uploading.
Reboot		Reboots the NK-IPS. This function does not clear the NK-IPS settings. The RESET button on the front panel will perform the same function.
Close		Closes the NK Series IPS interface in DashBoard

Update IPS Network Settings Dialog

Click the **Network Settings** button on the **NK Series IPS** interface to display the Update IPS Network Settings dialog. **Table 8.2** summarizes the fields displayed in the Update IPS Network Settings dialog.

Table 8.2 Update IPS Network Settings Dialog

Item	Parameters	Description
Use DHCP	Selected	The NK-IPS automatically obtains its network settings from a Dynamic Host Configuration Protocol (DHCP) server.
	Cleared	The user must assign static network settings to the NK-IPS
Address	###.###	Specifies the IP Address for the NK-IPS
Netmask	###.###	Specifies the Netmask value for the NK-IPS
Gateway	###.###	Specifies the IP Gateway value for the NK-IPS
Port	###.###	Specifies the port number assigned to NK-IPS on the network (read-only)
Send Settings		Sends the settings to the NK-IPS
Cancel		Changes to the dialog are not applied; the dialog closes

NK Switchboard Interface

The NK Switchboard interface enables the routing matrix to be monitored and optionally controlled on any router on any NK-IPS detected on the network.

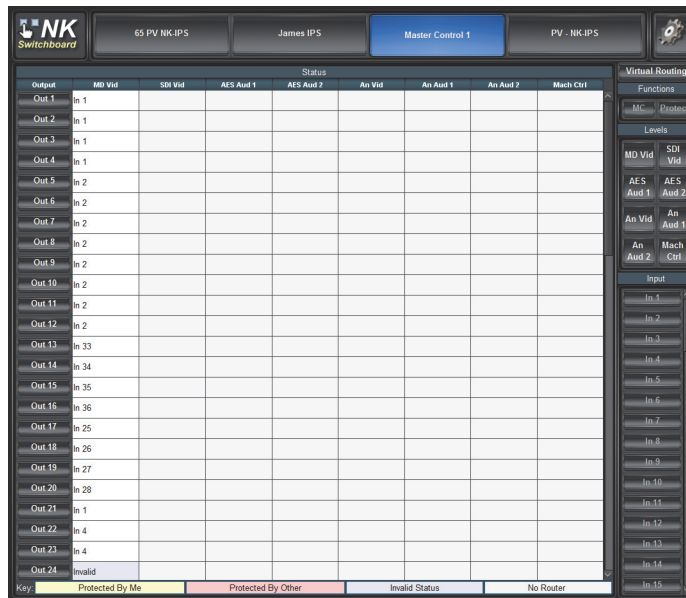


Figure 8.2 Example of the NK Switchboard Interface

Top Toolbar

The toolbar located at the top of the NK Switchboard interface provides buttons to select a device in the routing system the NK-IPS detects on the network.

Right Toolbar

Table 8.3 summarizes the buttons displayed in the toolbar located to the far right side of the NK Switchboard interface.

Table 8.3 NK Switchboard Interface — Right Toolbar

Item	Parameters	Description
Virtual Routing ^a		Press the Virtual Routing button to have the NK Switchboard perform all switches in virtual routing mode.
		If de-selected, any routing devices controlled through NK Switchboard will use physical switching.
Functions	MC	Provides Machine Control switching; must be enabled from the Configure IPS dialog
	Protect	Protects selected inputs/outputs; must be enabled from the Configure IPS dialog
Levels	#	When selected, enable switching on the corresponding levels. The total number of Level buttons shown is reliant on the number entered in the Configure IPS dialog
Input	#	Selects the source(s) to be switched on the levels previously selected. The total number of Input buttons shown is reliant on the number entered in the Configure IPS dialog.
Output	#	Selects the destination for the source to be switched on the levels previously selected. The total number of Output buttons shown is reliant on the number entered in the Configure IPS dialog.

a. The NK-VRC is required for virtual routing and resource management.

Configure IPS Interface

Table 8.4 summarizes the columns and fields displayed in the Configure IPS interface.

Table 8.4 Configure IPS Interface

Item	Parameters	Description
Custom	Selected	Saves the custom settings when saving the setup to an *.nks file. Any changes to the settings of an NK-IPS in the Configure IPS dialog will automatically select this box.
	Cleared	The change in settings are not captured when saving to an *.nks file.
Serial	#	This read-only field reports the serial number assigned to the specified device.
Name	<text>	Provides a unique identifier for the specified device.
#Outs	#	Specifies the maximum number of destinations for the device.
#Ins	#	Specifies the maximum number of sources for the device.
#Levs	#	Specifies the maximum number of levels for the device.
Addr	#	Assigns a Switchboard T-Bus address to the device. By default, the NK Switchboard T-Bus address is the same as the NK-IPS T-Bus address.
Prot	Selected	Enables the Protect function for the device
	Cleared	Disables the Protect function for the device

Table 8.4 Configure IPS Interface

Item	Parameters	Description
M/C	Selected	Enables the Machine Control features for the device
	Cleared	Disables the Machine Control features for the device
Virt	Selected	Enables Virtual Routing and Resource Management for the device. This box is selected by default if an NK-VRC is installed as part of the system connected via T-Bus to the NK-IPS.
	Cleared	Disables the Virtual Routing and Resource Management for the device
Labels		Use this button to import global labels..