This document outlines the steps necessary to configure the NK-VRC Virtual Control Panel for use with MC1-MK Master Control System. Ross Video strongly recommends the use of an NK-VRC to ensure reliable router switching, even if virtual routing is otherwise not needed. The NK-VRC works in conjunction with a special software load on the NK-IPS ethernet bridge. The combination of NK-VRC and NK-IPS ensures that all switch requests from the MC1-MK Master Control System will be performed by the router, even if bus collisions should occur.

Cabling

In addition to its power supply, the NK-VRC has two RJ-45 ports, which are cabled using standard CAT-5 network cable. The two ports allow daisy-chaining the T-Bus between all the router components.
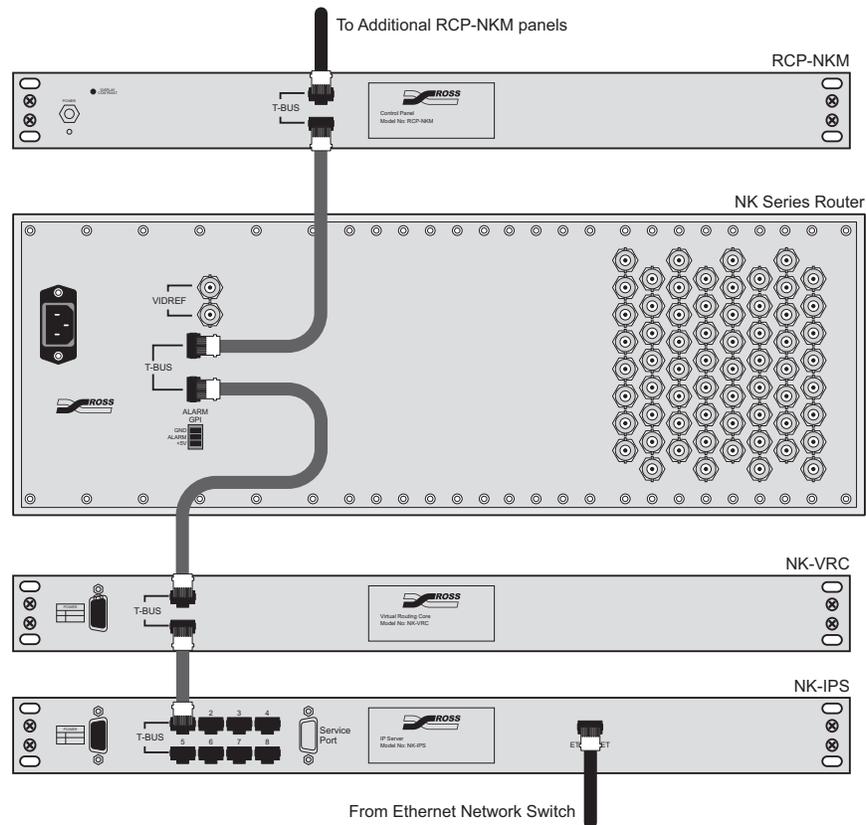

Figure 1 *Example of Possible Cabling*

T-Bus Topology

For Master Control application, Ross Video recommends that all T-Bus devices should be connected in a single daisy-chain fashion. This means that only one of the eight T-Bus connectors on the NK-IPS will be used. From this single connector, one CAT-5 cable will run to the next device, and from that device, another cable will run to the third device, etc. The order of devices on the bus does not matter.

An alternative topology would be star-shaped, with all devices plugged directly into the eight ports on the NK-IPS. This configuration is not recommended for Master Control applications. If it cannot be avoided, then put non-critical devices (like NK-RCP panels) in star topology, while keeping the critical devices (NK-IPS, NK-VRC, and the router) on a single daisy-chain.

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NK-VRC Configuration

It is necessary to configure the NK-VRC in a site-specific manner, even if virtual switching is not being used. In such cases, a "unity" virtual routing table will be established, which simply maps all virtual sources/destinations directly to the corresponding physical inputs and outputs.

Installing and Accessing the Phoenix Control Surface

In order to configure the NK-VRC and other router components, the Phoenix Control Surface software needs to be installed. This software is provided on CDROM with each router system, and can also be downloaded from the Ross Video web site. The most recent version at time of writing is **1.3**.

> **Note** — *The Phoenix Control Surface requires the Java™ Runtime Environment (JRE) to be installed. This can be downloaded from the Oracle® website.*

Accessing the NK-VCore Interface

1. Launch the Phoenix Control Surface by double-clicking its icon on your PC desktop.

2. Locate the router system in the **IPS Explorer** pane (located on the left hand side of the Phoenix window). It may be necessary to disable the fire wall on your PC if you are unable to see any devices.

3. Expand the tree by clicking the small plus sign (node) to reveal a list of all devices on the T-Bus. One of these will be an icon labeled V-Core which is the icon for the NK-VCore interface.

4. Right-click the NK-VRC node.

5. Select **Open** to display the NK-VCore interface in the right half of the Phoenix window.

   • The **Physical Map** tab is automatically selected in the NK-VCore interface.

   • The **1** button is selected in the **Destination** row (located near the top of the **Physical Map** tab).

Source and Destination Tables

The main area of the NK-VCore interface displays a spreadsheet-like grid. By default, each row will be filled with numbers, in an increasing numeric progression.

> **Important** — *It is imperative to clear out all the unneeded level mappings otherwise the MC1-MK switching will be very slow.*

Clearing the Grid

1. Click the **Edit...** button, located near the top of the **Physical Map** tab. The **Edit** dialog is displayed.

2. In the **Table** area, select **Destinations**.

3. In the **Levels** area, select all of the boxes for **Class** and **L1** through **L32**.

4. In the **Range** area, ensure that **Start** is set to **1**, and **End** is set to **100**.

5. Select the **Blank** box.

6. Click **Fill**. The **Edit** dialog closes and the fields in the grid of the NK-VCore interface are now cleared.

7. Clear the Source entries by repeating steps 1-6, only selecting **Sources** in step 2.

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8. If using a router with more than 100 inputs, be sure to also clear the second page of data:

- Repeat steps 1-6 for **Destinations** and **Sources**.
- Ensure that:
    › In the **Range** area, for both Destinations and Sources, that **Start** is set to **101** and **End** is set to **200**.
    › The **Value** field is set to **101**.

Assigning a Class to Sources and Destinations

All source and destinations must be assigned a Class. Use Value 1 unless you have more complex needs.

1. Click the **Edit...** button. The **Edit** dialog is displayed.
2. In the **Table** area, select **Destinations**.
3. Select the **Class** box only. Leave the **L1** to **L32** boxes unchecked.
4. In the **Range** area, ensure that **Start** is set to **1**, and **End** is set to **100**.
5. Set the **Value** to **1**.
6. Leave the **Increment** box unchecked.
7. Click **Fill**. The **Edit** dialog closes and the cells in the **Class** column of the grid each display **1**.
8. Repeat steps 1-7 only select **Sources** in step 2.
9. If more than 100 inputs/outputs are used, repeat the procedure for the second page of sources and destinations. In the **Range** area, ensure that **Start** is set to **101**, and **End** is set to **200**.

Mapping the Level(s)

Most router systems will only use a single level for all switches, typically Level 1 (**L1**). With the grid cleared out, we will now enable virtual-to-physical mapping for a single level only.

1. Select **Edit** to display the **Edit** dialog.
2. In the **Table** area, select **Destinations**.
3. In the **Levels** area, select only the **L1** box.
4. In the **Range** area, ensure that **Start** is set to **1**, and **End** is set to **100**.
5. Set the **Value** to **1**.
6. Select the **Increment** box.
7. Click **Fill**. The **Edit** dialog closes and the cells in the **L1** column are filled in starting with the first cell displays 1 and incrementing by a value of 1 thereafter.
8. Repeat steps 1-7 only select **Sources** in step 2.
9. If using a router with more than 100 inputs, be sure to also map the levels on the second page of data.

- Repeat steps 1-7 for both **Destinations** and **Sources**.
- Ensure that:
    › In the **Range** area, for both Destinations and Sources, that **Start** is set to **101** and **End** is set to **200**.
    › The **Value** field is set to **1** and the **Increment** box is selected.

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Update the NK-VRC Configuration

When you have made changes to the NK-VRC configuration, the changes are not activated until the changes are sent to the NK-VRC. The last step is to send all of these changes made in the NK-VCore interface to the NK-VRC.

1. Select the third icon from the left on the main tool bar (located above the **IPS Explorer** pane) to display the **Send to Device** dialog. Note that when you hover your mouse cursor over this icon, the tool-tip displays **Send Current Document**.

2. Confirm which modified page(s) will be sent, and to which device(s) it will go to.

3. Click **OK** to send the configuration to the NK-VRC.

4. In the **IPS Explorer** pane, right-click on the NK-VRC.

5. Select **Reload This Device**.

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