

NK-3G144-X to Carbonite eXtreme Upgrade

The NK-3G144-X router can be upgraded to a Carbonite eXtreme switcher. This upgrade replaces the matrix core of the router with the Carbonite eXtreme CPU, and adds a number of cards to the system to support the switcher. Settings stored for the NK-3G144-X are not compatible with the Carbonite eXtreme.

Refer to the QuickStart poster that came with your upgrade kit for information on cabling the control panel and breakout box to the frame.



CAUTION: The upgrade of the NK-3G144-X to a Carbonite eXtreme must be limited to service personnel only and must be performed with the frame/chassis in a de-energised state.



Important: The Carbonite eXtreme upgrade is only compatible with **Carbonite eXtreme / NK-3G144-X** frame (2500AR-202-xx). If you do not have this frame, or are unsure about the model of your frame, please contact Ross Video Technical Support for more information.

Upgrade Components

The Carbonite eXtreme upgrade kit contains the following parts.

Table 1: Parts Description

Part	Description
2500AR-003A	Controller Card
4803AR-001A	Switcher/Crosspoint Card
30-00478	USB Cable (12")
4803AR-050	The Breakout Panel
70-00394	The Breakout Panel cable
4803AR-070A	Ethernet Interface Card
4803AR-072A	GPIO/Tally Card
2500AR-025	GPI/Tally Rear Module
4803CDR-004	The Carbonite eXtreme Product Resources disk
4803DR-120	Carbonite eXtreme Setup Manual

Part	Description
4803DR-200	Carbonite eXtreme QuickStart

Carbonite eXtreme Hardware Upgrade

The Carbonite eXtreme upgrade of the NK-3G144-X frame requires the removal and installation of a number of hardware components.



CAUTION: When the frame is energized, Hazardous Energy Levels are present on the chassis midplane where I/O card resettable fuses make contact with the 15V DC supply bus. Hazardous Energy Sources can cause fire or serious burns under short circuit conditions. Access to the inside chassis areas must be restricted to service personnel only, by use of the chassis door screw. The screw should be engaged to limit access to the inside chassis without a tool.



CAUTION: Servicing within the chassis while energized should be limited to module card or supply installation, or defect replacement. Installation of the cards should be carried at the front of the enclosure and care should be taken to avoid any card or user contact with the resettable fuses on the chassis's midplane. All other service or repair should be carried out off-line with the chassis in a de-energized state.

To Install the Carbonite eXtreme Frame CPU



Important: Only qualified service personnel are allowed to replace or service system boards and/or cards.

1. Power off the frame and open the frame door.
2. Remove the retaining screws on the NK-3G144-X Matrix card latches.

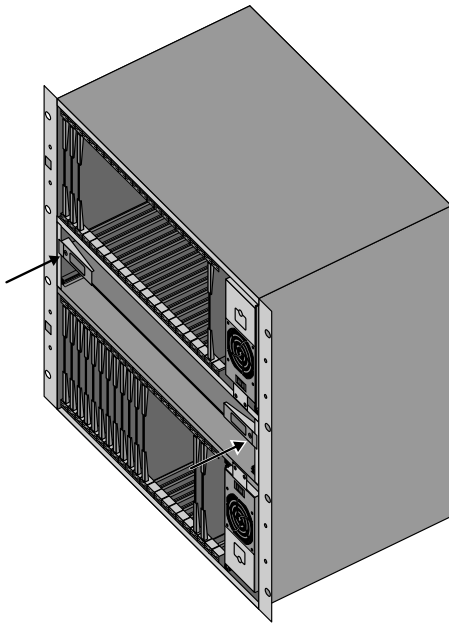


Figure 1: NK-3G144-X Matrix board retaining screws

3. Swing the retaining latches out to release the matrix board and remove the board from the frame.

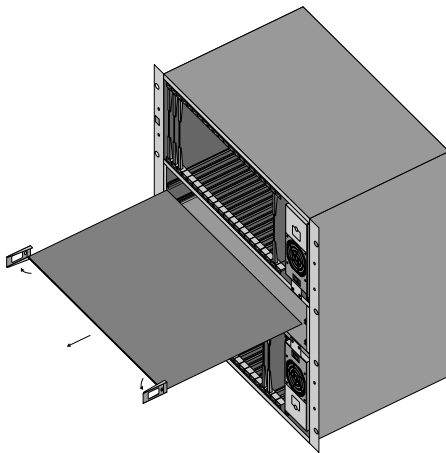


Figure 2: NK-3G144-X Matrix board Removal

4. If there is an additional NK-3G144-X Matrix card in the system, it must also be removed.
5. Install the Switcher/Crosspoint Card into the top slot in the frame.
6. Connect the USB cable from the USB port on the Switcher/Crosspoint Card to the USB 1 port on the left side of the frame.

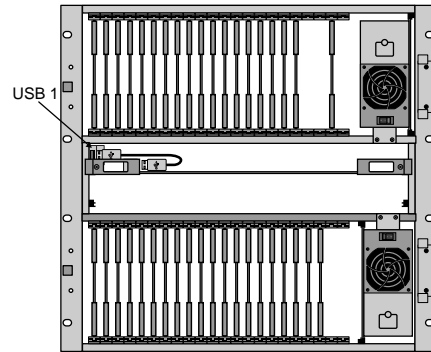


Figure 3: Switcher/Crosspoint Card USB

To Install the Controller Card

The Carbonite eXtreme uses the same rear module for the Controller Card as the NK-3G144-X.



Important: Only qualified service personnel are allowed to replace or service system boards and/or cards.

1. Locate the Controller Card slot in the frame. The controller card for the NK-3G144-X will already be in the slot and must be removed.

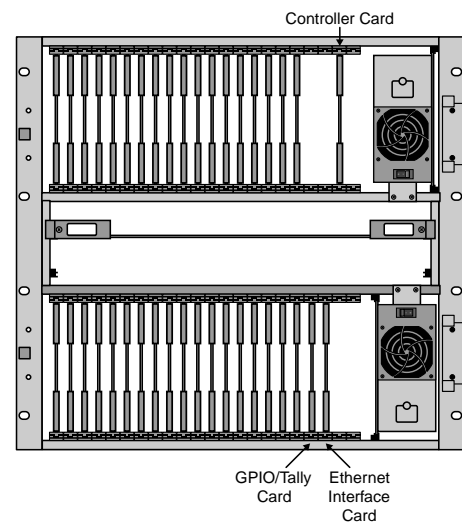


Figure 4: Controller Card Slot

2. Rotate the ejector tabs on the NK-3G144-X Controller Card out to eject the card and remove it from the frame.

Tip: You can send the old controller card back to Ross Video for recycling.

3. If there is an additional NK-3G144-X Controller Card installed in the frame, it must also be removed.
4. Orient the new card so that the component side is towards the power supplies.
5. Rotate the ejector tabs on the card out.

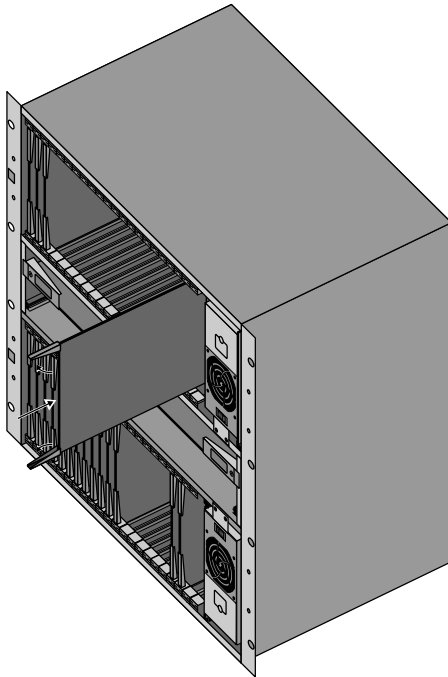


Figure 5: Controller Card Installation

6. Align the card to the top and bottom guide rails and insert the card into the slot until it is firmly seated.

Fastpath: Do not use excessive force to seat the card. If the card does not fit into the slot, check the alignment of the card and the rear module.

7. Rotate the ejector tabs in, towards the front of the card, to lock the card into the slot.

To Install the Ethernet Interface Card and GPIO/Tally Card



Important: Only qualified service personnel are allowed to replace or service system boards and/or cards.

1. The NK-3G144-X can have output cards in slots 15D to 18D. These cards must be removed before you can proceed with the upgrade.

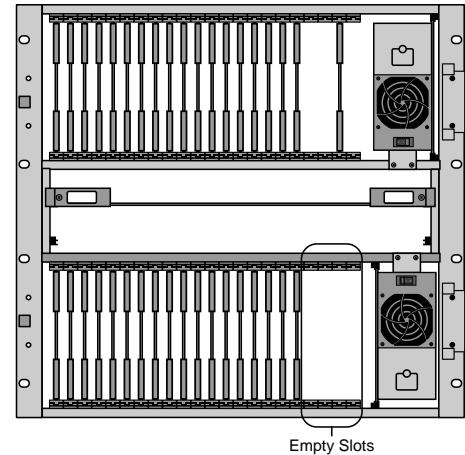


Figure 6: Empty Slots

2. Remove the six (6) screws securing the rear module to the frame and remove the old rear module.

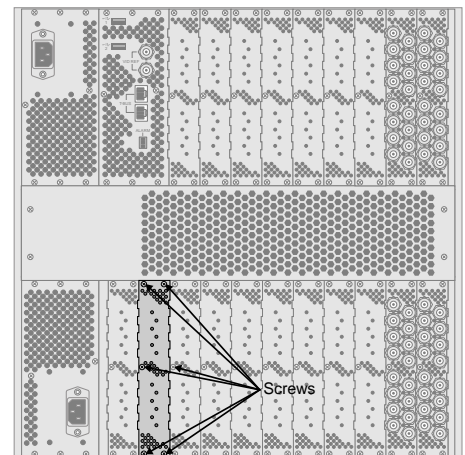


Figure 7: Rear Module Screws

3. Align the connectors on the back of the GPI/Tally Rear Module to the connectors on the midplane at the back of the frame and insert the rear module into the slot.
4. Re-install the screws into the new rear module to secure it in position.

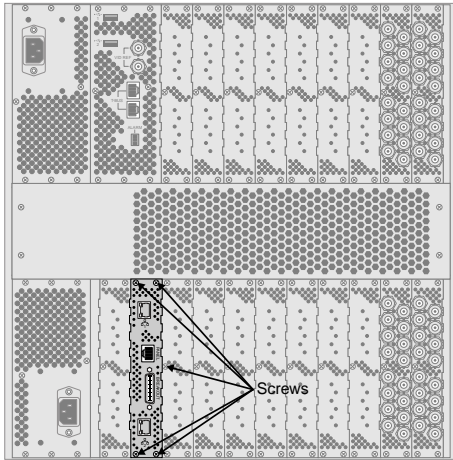


Figure 8: GPIO/Tally Rear Module Screws

5. Locate the GPIO/Tally Card and Ethernet Interface Card slots in the frame.

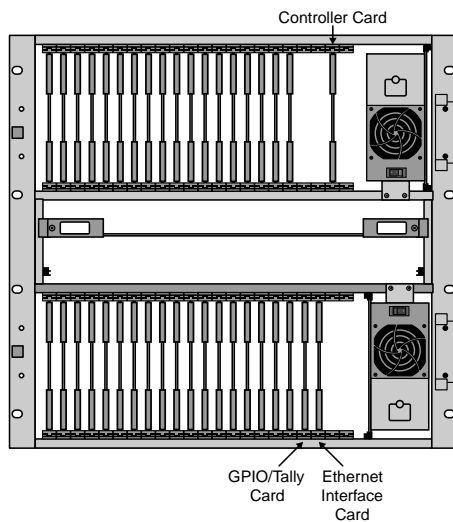


Figure 9: GPIO/Tally and Ethernet Card Slots

6. Orient the Ethernet Interface Card so that the component side is towards the power supplies.
7. Rotate the ejector tabs on the card out.

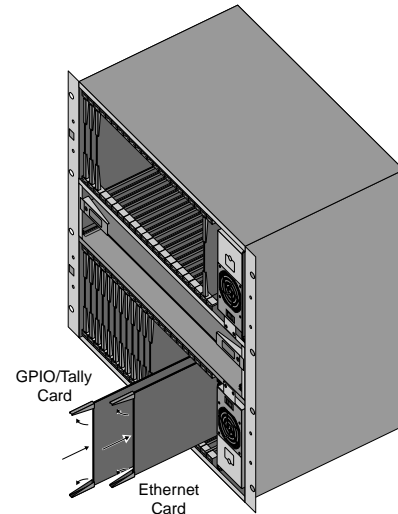


Figure 10: Ethernet Interface Card Installation

8. Align the card to the top and bottom guide rails and insert the card into the slot until it is firmly seated.

Fastpath: Do not use excessive force to seat the card. If the card does not fit into the slot, check the alignment of the card and the rear module.

9. Rotate the ejector tabs in, towards the front of the card, to lock the card into the slot.
10. Install the GPIO/Tally Card in the same way as the Ethernet Interface Card.

Router Inputs and Outputs

Video signals can either pass directly from an input BNC on the router to an output BNC on the router, bypassing the video processing of the switcher subsystem, or can pass through the switcher subsystem. Only video signals passing through the switcher can be used for transitions or keying.

The Switchboard node in the DashBoard control system allows you to assign video sources to the input and output BNCs. The router subsystem views the switcher inputs as outputs and the switcher outputs as inputs. These inputs and outputs must be mapped to BNCs on the router to allow video sources in and out of the switcher. The router subsystem assigns a different range

of inputs and outputs to each switcher subsystem.

Note: You cannot route an output from one switcher subsystem to the input of the other switcher subsystem. Each switcher subsystem is an independent unit.

	Switcher A	Switcher B
Router Outputs to Switcher	145-168	169-192
Router Inputs from Switcher	145-154	155-164

Note: Video signals that are routed through the switcher subsystem are delayed versus those that are routed directly from an input BNC to an output BNC.

Switchboard Setup

Before you can access the inputs and outputs of the switcher you must configure Switchboard to access the additional inputs and outputs.

To Set Up Switchboard

1. Open the Switchboard node in DashBoard for your frame.
2. Click the **Configure Switchboard** button in the upper-right corner of the window.
3. Select the **Custom** check box for the router the switcher is installed into.
4. Click **Yes** on the **Overwrite** dialog box to confirm the changes.
5. Clear the **Custom** and click **Yes** to confirm.

Switcher Inputs from the Router

Video inputs to the switcher must be assigned to outputs (**Switcher Input 1-24**) on the router.

To Assign a Router Input to a Switcher Input

1. Open the Switchboard node in the DashBoard control system for your frame.
2. In the **Output** column, select the switcher input (**Switcher A/B Input 1-24**) that you want to assign a router input to.

3. In the **Input** column, select the source from the router (**In 1-In 144**) that you want to assign to the selected switcher input.

Switcher Outputs to the Router

Video outputs from the switcher must be assigned to outputs on the router.

To Assign a Switcher Output to a Router Output

1. Open the Switchboard node in the DashBoard control system for your frame.
2. In the **Output** column, select the output of the router that you want to assign an output of the switcher to.
3. In the **Input** column, select the output from the switcher (switcher A or switcher B) that you want to assign to a router output.
 - **Switcher A/B Preview** — main preview output of the switcher
 - **Switcher A/B Program** — main program output of the switcher
 - **Switcher A/B Output 1-8** — video outputs from the switcher
 - **In1-In144** — router inputs (bypass switcher)