

Ultracool

Ultracool User Guide

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2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
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.)*

Ultracool · User Guide

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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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US FCC Part 15

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.



Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user's authority to operate this equipment.*

CANADA

This Class “A” digital apparatus complies with Canadian **ICES-003**.

Cet appareil numérique de la classe “A” est conforme à la norme **NMB-003** du Canada.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

AUSTRALIA

This equipment has been tested to **AS/NZS CISPR 22:2008** and found to comply with the limits for a Class A Digital device.

INTERNATIONAL

This equipment has been tested to **CISPR 22:2008** 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.*

Warranty and Repair Policy

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



Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.*

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.

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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.

This appliance may contain a Coin type battery which should not be treated as household waste.

To ensure that the battery will be treated properly use the appropriate take-back systems in your area. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

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Introduction

This guide is for system administrators and installers of the Ross Video Ultracool. It provides instructions on how to install, configure, and monitor your Ultracool rack mount cooling system.

This guide contains the following chapters that cover the installation and setup of an Ultracool:

- “**Introduction**” summarizes the guide and provides important terms, and conventions.
- “**Getting Started**” provides general information to keep in mind before installing and configuring your Ultracool.
- “**Hardware Overview**” provides a basic introduction to the Ultracool front and rear panels.
- “**Physical Installation**” provides instructions for the basic physical installation of the Ultracool.
- “**Configuration**” provides instructions on navigating the Ultracool interfaces, and establishing communications in DashBoard.
- “**External Controls**” lists the third-party protocol commands the Ultracool supports.
- “**Monitoring the Ultracool**” provides instructions on how to monitor the Ultracool status via the chassis and the DashBoard read-only status fields.
- “**Maintenance**” provides instructions on how to move the duct on the rear panel of the chassis.
- “**DashBoard Interface Overview**” summarizes the tabs, menus, fields, and parameters displayed in the DashBoard window for Ultracool.
- “**Technical Specifications**” provides the specifications, such as dimensions and power consumption, for the Ultracool.

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 Ultracool:

- *Ultracool Quick Start Guide*, Ross Part Number: 2101DR-402
- *ULTRIX-FR1 and ULTRIX-FR2 Quick Start Guide*, Ross Part Number: 2101DR-002
- *ULTRIX-FR5 Quick Start Guide*, Ross Part Number: 2101DR-502
- *Ultrix Installation Guide*, Ross Part Number: 2101DR-003
- *Ultrix User Guide*, Ross Part Number: 2101DR-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 *Ultrix Installation 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 Ultricool 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 Ultracool is a smart, directional 1RU rack mount cooling system to compliment equipment thermal performance when in extreme conditions or in confined spaces. Ultracool can be configured to provide directional airflow from front to back, front to right side, or front to left side depending on equipment requirements.

Ultracool may integrate with an Ultrix router to provide automatic thermal adjustments, or operate stand-alone with manual fan speed controls. Ultracool also provides a RossTalk interface to set the fan speeds.

Ultrix Support Overview

The default configuration of Ultracool provides enhanced thermal management for Ultrix routers particularly in confined spaces. The right hand side fans duct front-of-rack cool air to the Ultrix router frame air intake, whilst the left hand side fans creates a low pressure where Ultrix exhaust is drawn up and vented out the rear of the system enclosure. This helps to prevent Ultrix ingesting the warm air within an enclosure.

Supported Devices

The Ultracool supports the following Ultrix devices:

- ULTRIX-FR1
- ULTRIX-FR2
- ULTRIX-FR5

Features

The Ultracool includes the following features:

- Directional 1RU rack mount cooling system
- Rear duct that can be moved to change airflow from right to left, or left to right
- Multiple modes for fan control:
 - › Manual — via DashBoard or RossTalk commands
 - › Bonded — automatically adjusted via connection to an Ultrix router
- DashBoard interface to all reported status data

Hardware Overview

This chapter presents information on the Ultracool front and rear panels.

Front Panel Overview

This section summarizes the Ultracool front panel features.

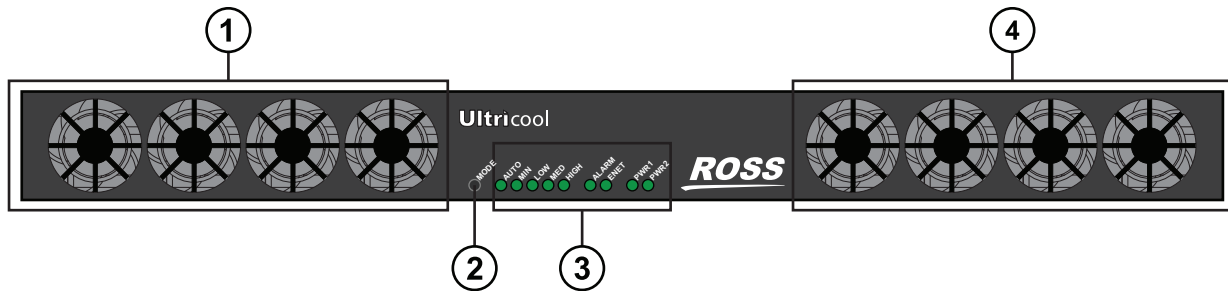


Figure 3.1 Ultracool — Front Panel

- | | |
|----------------|----------------|
| 1) Fans 1-4 | 3) Status LEDs |
| 2) MODE Button | 4) Fans 5-8 |

1. Fans 1-4

Fans 1-4 draw air into the Ultracool and if the duct is installed on the rear panel over these fans, directs the air down and to the left of the chassis.

2. MODE Button

Toggle this button to set the sets the speed of all fans to a specific rate.

3. Status LEDs

The Status LEDs monitor the overall fan speed, communication status, and power supplies. Refer to “**Monitoring via the Front Panel LEDs**” on page 27 for details.

4. Fans 5-8

Fans 5-8 draw air into the Ultracool and if the duct is installed on the rear panel over these fans, directs the air down and to the right of the chassis.

★ A duct is installed over fans 5-8 when shipped from the factory.

Rear Panel Overview

The rear panel provides a support structure for connecting power inputs, power outputs, and to your facility network. This section summarizes the Ultracool rear panel features.

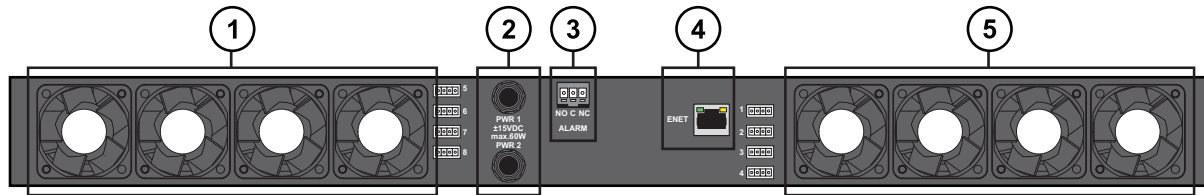


Figure 3.2 Ultracool — Rear Panel (Duct Removed) Overview

1) Fans 5-8	3) ALARM Connector	5) Fans 1-4
2) PWR Ports 1, 2	4) ENET Port	

1. Fans 5-8

Fans 5-8 draw air into the Ultracool and if the duct is installed on the rear panel over these fans, directs the air down and to the right of the chassis.

★ When shipped from the factory, a duct is installed over fans 5-8. This duct can be removed entirely or installed over fans 1-4.

2. PWR Ports 1, 2

There are two power supply connectors located on the rear of the Ultracool. Each connector requires a 15VDC connection to an external power supply.



Notice — *The Ultracool automatically powers on when power is applied.*

The Ultracool ships with one power supply. An option is available to order a second power supply for redundancy.

3. ALARM Connector

The ALARM connector is a general purpose output that provides contact closure alarm state monitoring. Refer to the section “Using the ALARM Connector” on page 17 for details.

4. ENET Port

The ENET port is an RJ45 connector used to connect the Ultracool to an external Ethernet network. This port is required for monitoring and control of Ultracool.



Notice — *The ENET port does not provide Power-over-Ethernet (PoE).*

5. Fans 1-4

Fans 1-4 draw air into the Ultracool and if the duct is installed on the rear panel over these fans, directs the air down and to the left of the chassis.

Physical Installation

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

Before You Begin

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 unit.
- Ensure that adequate space exists in front, and behind of the chassis for airflow exhaust.
- The install location of the chassis should be accessible, dry, and dust-free.
- The socket/outlet should be installed near the equipment and be easily accessible.

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.*

Unpacking the Equipment

On receiving your Ultracool, check the contents against the packing list. Ensure that all equipment itemized on the packing list is present and there are no signs of damage before installing the Ultracool in your system.

If anything is missing or damaged, contact Ross Video immediately to obtain the correct warranty service procedures.

We recommend that the equipment is installed by qualified and experience personnel, to any relevant standards and approvals.

Mounting Requirements

The Ultracool 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 Ultracool mounts in the rack frame by means of four rack screws fastened through the 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. For safe long term reliability, ensure the ambient air temperatures at the chassis right-side intake are within the Ultracool specified operating temperature range. Adequate ventilation within a rack frame must also be maintained.

For More Information on...

- the technical specifications for the Ultracool, refer to the chapter “**Technical Specifications**” on page 35.

Connecting Ultracool to a Network

The **ENET** port is a standard 10/100 RJ45 Ethernet connector and is used to exchange data and communicate with control and monitoring applications such as DashBoard.

★ Contact your IT department before connecting to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for your device.

The Ultracool is 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 Ultracool.

For More Information on...

- downloading and installing DashBoard, refer to the *DashBoard User Manual*.
- ★ If difficulties or problems are experienced when connecting the Ultracool to a network hub, or with assigning IP addresses, please contact your network administrator.

To establish a physical connection to the network

1. Connect one free end of a standard CAT 5/5e/6 Ethernet cable to a free port of the network hub.
2. Connect the other end of the same cable to the **ENET** port on the rear of the Ultracool.

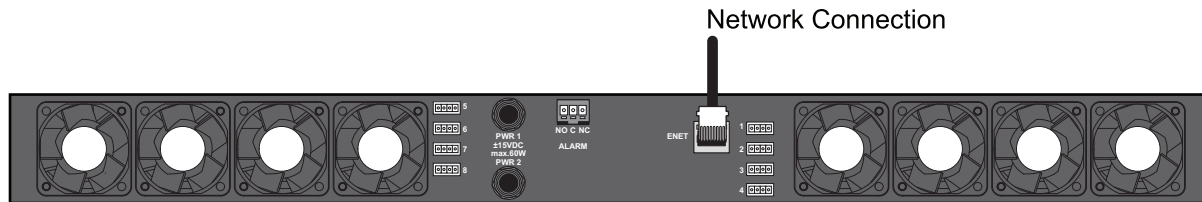


Figure 4.1 Ultracool — Network Connection

Connecting to a Power Source

For redundancy, each power cord should be connected to a separate power source for protection against failure of the A/C power circuit. Under normal conditions with two power supply modules operating, the DC output power is shared between the two modules.



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 Ultracool

1. Connect the supplied power supply DC cable into the socket marked **PWR 1** on the Ultracool rear panel.

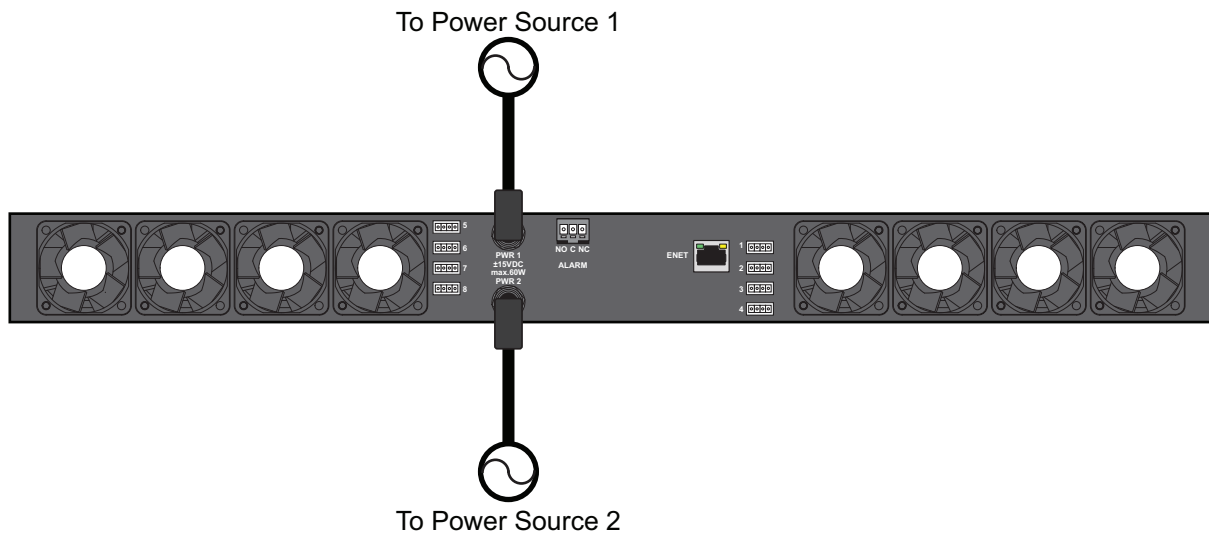


Figure 4.2 Ultracool — Power Connections

2. If available, connect the redundant power supply DC cable into the socket marked **PWR 2**.
3. Connect the supplied AC power cable into the power module(s).
4. Connect the supplied power cable's three-prong male connector to Mains Power.

Using the ALARM Connector

Refer to **Figure 4.3** for pin designations.

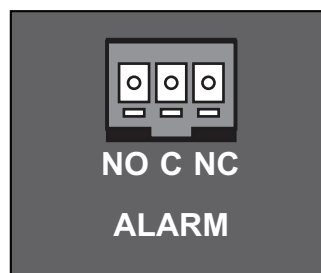


Figure 4.3 ALARM Connector — Pin Designations

Refer to **Table 4.1** for the pinout assignment of the ALARM port on the chassis.

Table 4.1 Alarm Pinouts

Pin Number	Function
NO	Normally Open
C	Common terminal
NC	Normally Closed

Under normal operation (unit powered with no alarms activated), Pin **C** is connected to Pin **NO**. An alarm condition connects Pin **C** to **Pin NC**. (Figure 4.4)

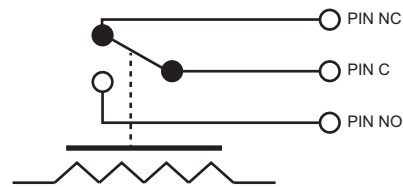


Figure 4.4 De-energized or Alarm State Equivalent Circuit

Refer **Figure 4.5** to for the signal pinouts for the 3-pin connector plug.

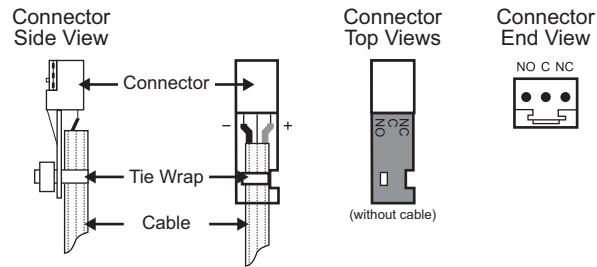


Figure 4.5 Connector Plug — Pinouts for Alarm Port

Configuration

The DashBoard client software enables you to configure and monitor the Ultracool. Using the tabs provided via the DashBoard client software, you can:

- Configure the network settings for your Ultracool
- Monitor the status of each fan

This chapter outlines how to assign an IP address to the Ultracool, and access the interfaces and status fields displayed in the Ultracool DashBoard interface.

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 Manual*.

To launch DashBoard

1. Ensure that you are running DashBoard software version 8.5 or higher.
2. Launch DashBoard by double-clicking its icon on your computer desktop.

Using Walkabout to Assign the IP Address to the Ultracool

Once the Ultracool is physically installed and cabled to your facility network, you will need to assign it a static IP Address to enable DashBoard to locate it on your network. Establishing an IP Address enables DashBoard to communicate with the Ultracool and update the Basic Tree View with the Ultracool nodes.

★ The default IP Address of the Ultracool is 192.168.20.125.

To assign a static IP address to the Ultracool

1. Launch DashBoard.
2. From the DashBoard client main toolbar, select **File > Show Walkabout**.

The DashBoard window displays the **Walkabout** table.

3. Click **Refresh**, located at the bottom of the Walkabout tab, to ensure the list in the Walkabout interface is current.
 4. In the **Walkabout** table, find the entry for the Ultracool you want to configure.
 5. Use the **Name** field to assign a unique identifier to the Ultracool. This will be the name displayed in the Tree View of DashBoard.
- ★ After you edit a cell in the **Walkabout** table, the **Connection/Link Quality** value for the device reports **1%**. It is recommended to wait approximately 1 minute, then click **Refresh** to apply the new settings.
6. Use the **Address** field to specify the IP Address supplied by your IT Department for this device.
 7. Ensure the **Netmask** field is set to match your network requirements.
 8. Use the **Gateway** field to specify the IP Address for connection outside of the local area network (LAN).
- ★ Press **Enter** on your keyboard after editing each field.
9. Click **Reboot** in the row of the **Walkabout** table for the Ultracool.

- ★ After initial setup, you can edit the network settings of the Ultracool using the Network tab options in DashBoard.

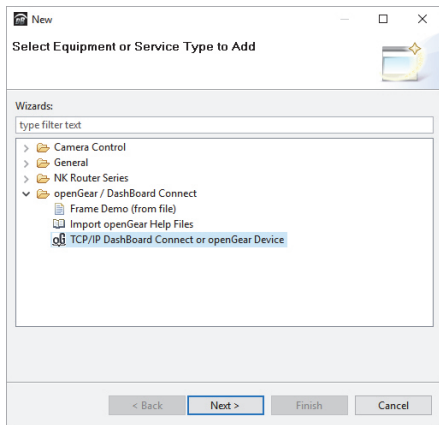
Adding the Ultracool to the Tree View in DashBoard

Once you have assigned the Ultracool a static IP Address, you can then manually add it to the Tree View. Manually adding the Ultracool displays its node in the Tree View, granting you access to the interfaces described used to monitor the status of the power supplies.

To manually add the Ultracool to the Tree View in DashBoard

1. In the **Basic Tree View** toolbar of DashBoard, click .

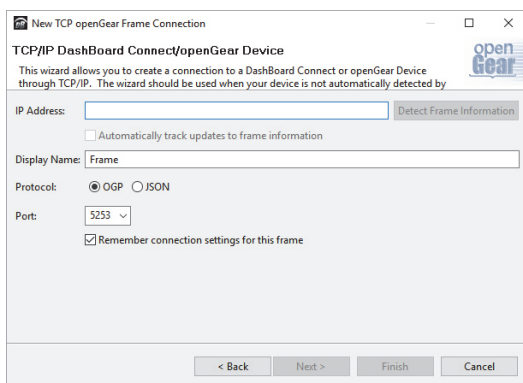
The **Select Equipment or Service Type to Add** dialog opens.



2. Expand the **openGear/DashBoard Connect** node.
3. Select **TCP/IP DashBoard Connect or openGear Device**.
4. Click **Next >**.

The **TCP/IP DashBoard Connect/openGear Device** dialog opens.

5. Select the **OGP** radio button as the **Protocol**.



6. Enter the IP Address for the Ultracool in the **IP Address** field that you assigned in the section “**To assign a static IP address to the Ultracool**” on page 19.
7. In the text fields provided, enter the display name for the Ultracool.
8. Click **Finish**.

The Ultracool displays in the **Tree View**.

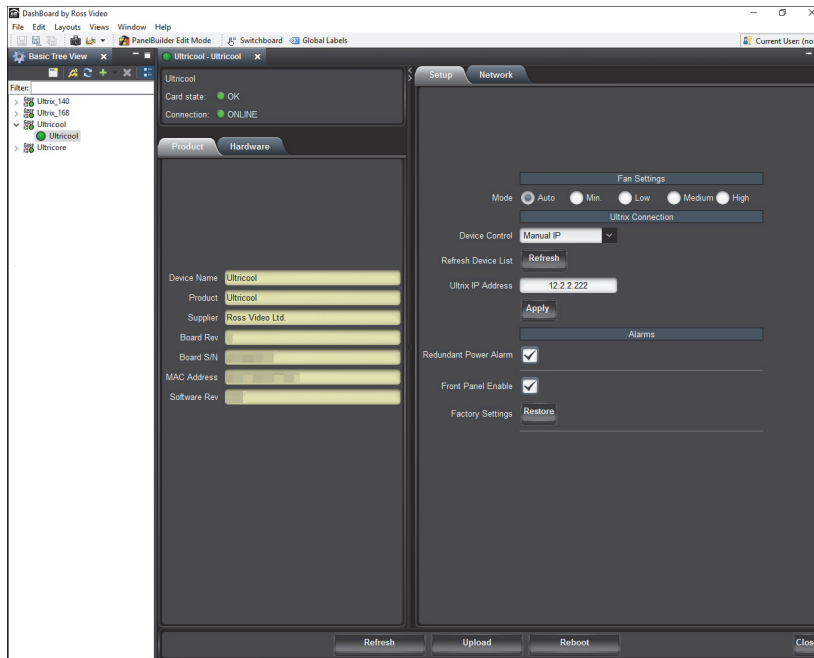
Accessing the Ultracool Interfaces in DashBoard

The interface is accessed by expanding the Ultracool node in the DashBoard Tree View and selecting the sub-node. The interface is divided vertically to show status and frame information on the left, and configuration options on the right.

To access the Ultracool interfaces in DashBoard

1. Locate the Ultracool in the Tree View of DashBoard.
2. Expand the Ultracool node to display the frame in the Tree View.
3. Double-click the Ultracool sub-node to display its interface in the right-side of the DashBoard window.
4. Select a tab to displays its contents in the DashBoard window.

In the example below, the **Product** and **Setup** tabs are selected.



For More Information on...

- the Status tabs, refer to the section “**Monitoring via DashBoard**” on page 28.

Configuring the Fan Mode

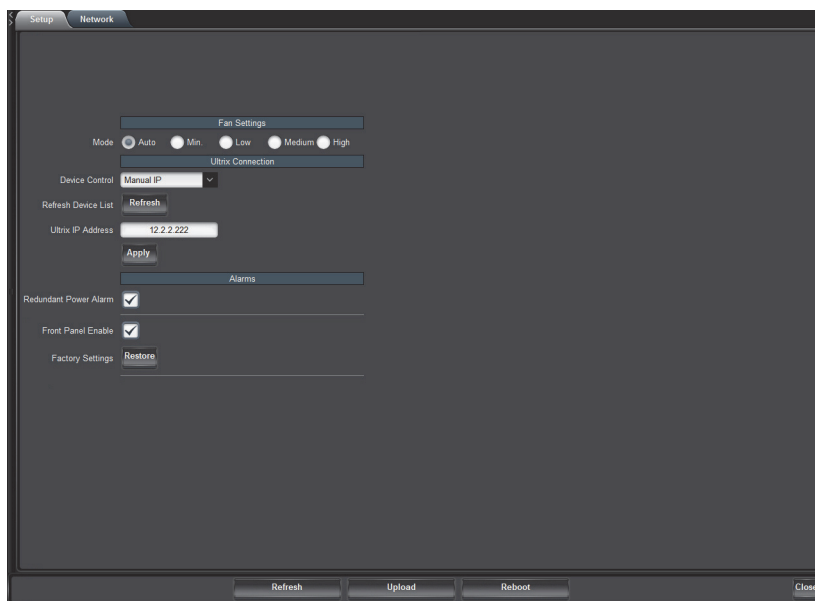
The Fan Mode sets the speed of all fans to a specific rate, or whether the fans will run at a speed as determined by the connected Ultrix router.

For More Information on...

- the physical fan locations, refer to the section “**Rear Panel Overview**” on page 14.
- establishing communications between an Ultrix router and the Ultracool, refer to the chapter “**Connecting to an Ultrix**” on page 23.

To specify a fan mode

1. Display the Ultracool interface in DashBoard as outlined in the procedure “**To access the Ultracool interfaces in DashBoard**” on page 21.
2. Select the **Setup** tab.



3. Choose a Fan Setting:

- **Auto** — Enables communications with Ultrix (if set) or RossTalk external control. Ensure that you establish a connection to a router as outlined in the chapter “**Connecting to an Ultrix**” on page 23.
- **Min.** — Sets the fan speed to the minimum RPM (less than 20%).
- **Low** — Sets the fan speed to approximately 20% of the maximum speed.
- **Medium** — Sets the fan speed to approximately 50% of the maximum speed.
- **High** — Sets the fan speed to approximately 100% of the maximum speed.

Connecting to an Ultrix

There are two methods for establishing a connection between the Ultracool and an Ultrix: Manual IP Mode or via Auto Detect Mode. This chapter outlines both methods.

Before You Begin

Before establishing communications between the Ultracool and an Ultrix router:

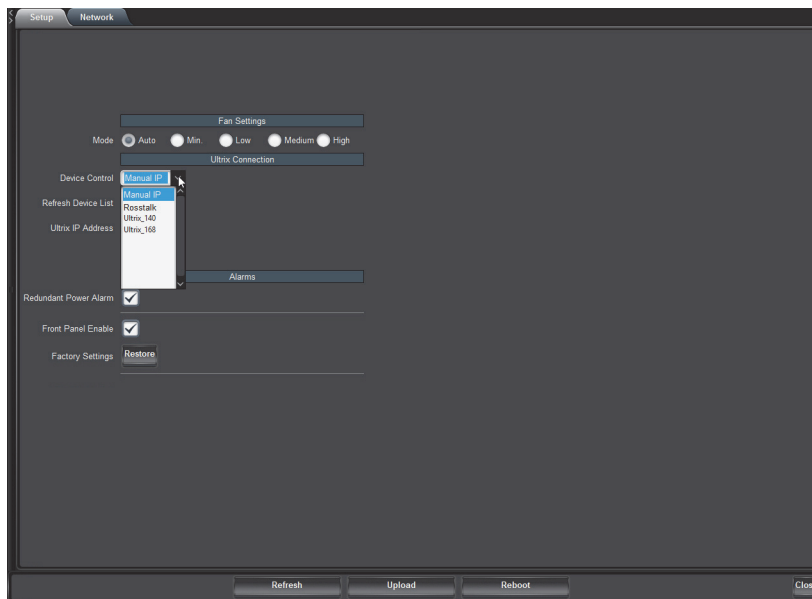
- Ensure the Ultrix router is installed and configured as outlined in its user documentation.
- Know the IP Address of the Ultrix router that will communicate with the Ultracool.
- Ensure the Ultracool is installed as outlined in its *Quick Start Guide*.

Using Auto Detect Mode

Ultracool uses the Discovered Devices feature of Walkabout to poll the network for a list of available Walkabout compatible devices (such as Ultrix routers). The Device Control menu displays this list for the Ultracool.

To establish a connection using Walkabout

1. Display the **Setup** tab for the Ultracool as outlined in the procedure “**Accessing the Ultracool Interfaces in DashBoard**” on page 21.
2. Set the **Fan Speed** mode to **Auto**.
3. Click **Refresh** to update the **Device Control** list of available control devices available in your routing system.
- ★ The Ultracool will poll the network for Ultrix routers using the Walkabout Discovery feature of DashBoard and populate the **Device Control** list.
4. Use the **Device Control** menu to select the required Ultrix router.



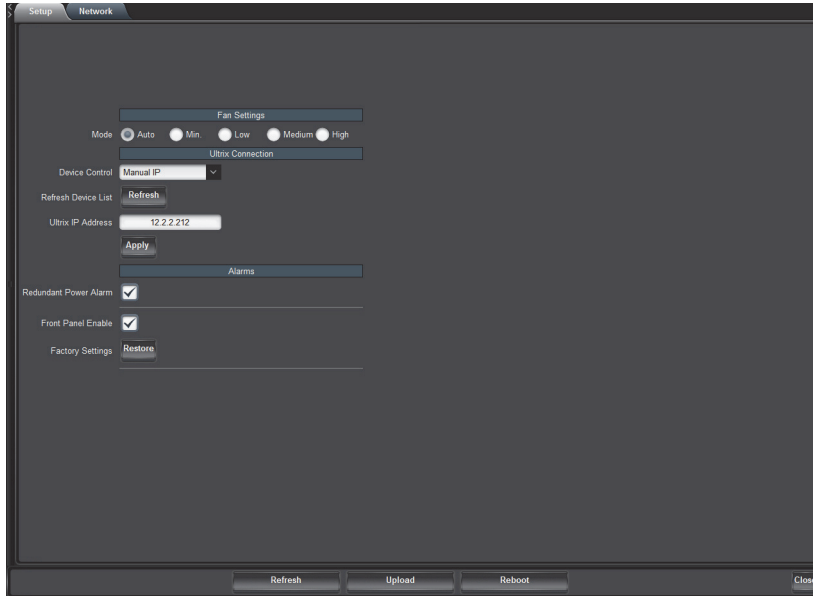
5. Click **Apply** to establish the connection.

Manual IP Mode

This mode is useful if the Walkabout multi-cast UDP port is blocked via network policy.

To establish a connection using Manual IP mode

1. Display the **Setup** tab for the Ultracool as outlined in the procedure “Accessing the Ultracool Interfaces in DashBoard” on page 21.
2. Set the **Fan Speed** mode to **Auto**.
3. Click **Refresh** to update the list of available control devices available in your routing system.
4. Use the **Device Control** menu to select **Manual IP**.



5. Specify the Ultrix router that will control the Ultracool as follows:
 - a. Use the **Ultrix IP Address** to specify the IP Address of the Ultrix router.
 - b. Press **Enter** to apply the new value.
6. Click **Apply** to establish the connection.

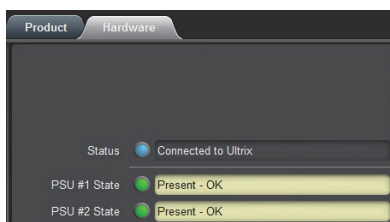
Verifying the Connection

You can verify the connection between the Ultracool and the Ultrix router in two ways:

- via the LED on the front panel (refer to **Table 8.1**)
- via the Hardware tab in DashBoard

To use DashBoard to verify the connection between Ultracool and Ultrix

1. Select the **Hardware** tab in the Ultracool window of DashBoard.
2. Locate the **Status** field on the tab and verify that:
 - the indicator is lit blue
 - the field reports as message of **Connected to Ultrix**



External Controls

This chapter lists the third-party protocol commands the Ultracool supports.

RossTalk Support

The RossTalk protocol is a plain text based protocol that allows control of Ross Video equipment.

★ Each command should be terminated by a carriage return and a line feed (CR/LF).

To establish communications using the RossTalk protocol

1. Display the **Setup** tab as outlined in the procedure “**To access the Ultracool interfaces in DashBoard**” on page 21.
2. Use the **Device Control** menu to select **RossTalk client**.

To send RossTalk commands to Ultracool

1. On the RossTalk client, create a network connection to the Ultracool on **Port 7788**.
2. Set the **Fan Speed Mode** on the Ultracool to **Auto**. Refer to the section “**To specify a fan mode**” on page 21.
3. At the prompt, enter the commands you wish to send. Refer to **Table 7.1** for a list of supported commands.

Table 7.1 RossTalk Protocol Commands

Message		
Command	Description	Notes
fan_speed:###	Controls the fan speed where ### is the speed percentage (0-100)	

Monitoring the Ultracool

You can monitor the Ultracool from the front panel LEDs, the rear panel LEDs, and via the read-only fields in DashBoard. Each location reports the status on a specific feature of the Ultracool.

Monitoring via the Front Panel LEDs

The Ultracool front panel includes LEDs that report the fan speed, power supply status, Ethernet communications, and a general ALARM LED to indicate if the unit is operating normally.

★ Ensure the **Setup > Front Panel Enable** box is selected to enable monitoring from the front panel.

Refer to **Table 8.1** for LED details.

Table 8.1 Front Panel — LEDs

LED	Color	Description
AUTO	Blue	Ultracool is under Ultrix control
	Purple	Ultracool has started a RossTalk server
MIN	Green	Ultracool fans are set to manual speed mode. The fans are set to the minimum RPM.
LOW	Green	Ultracool fans are set to manual speed mode. The fans are set to 20% of the maximum RPM.
MED	Green	Ultracool fans are set to manual speed mode. The fans are set to 50% of the maximum RPM.
HIGH	Green	Ultracool fans are set to manual speed mode. The fans are set to 100% of the maximum RPM.
ALARM	Red	An error condition is detected on the Ultracool. It is recommended to verify that the fans are working or power supplies are functioning correctly.
	Off	No alarm condition is detected
ENET	Flashing Green	There is currently communication activity on the ENET port of the Ultracool rear panel
PWR 1	Green	PSU 1 is present and working correctly
	Off	PSU 1 is not connected
PWR 2	Green	PSU 2 is present and working correctly
	Off	PSU 2 is not connected

For More Information on...

- the location of the LEDs on the front panel, refer to the section “**Front Panel Overview**” on page 13.

Monitoring the ENET Port LEDs

The Ultracool rear panel includes an ENET port. (Figure 8.1)

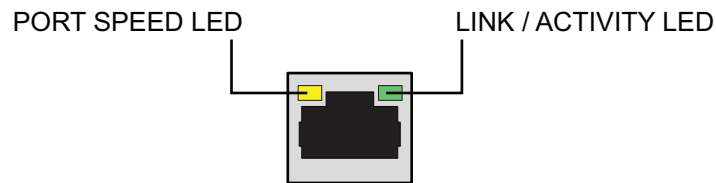


Figure 8.1 ENET Port LEDs

Table 8.2 Rear Panel — ENET LEDs

LED	Status	Description
LINK /ACTIVITY	Green	When lit solid green, this LED indicates an invalid link is detected on the RJ45 port or an absence of communication.
	Flashing Green	When flashing green, this LED indicates communication activity is occurring on the RJ45 port.
	Off	When unlit, this LED indicates an invalid link is detected on the RJ45 port or an absence of communication.
PORT SPEED	Yellow	When lit yellow, this LED indicates a 100Base-T Ethernet connection.
	Off	When unlit, this LED indicates a 10Base-T Ethernet connection.

Monitoring via DashBoard

The read-only fields in DashBoard enable you to monitor the state of the Ultracool chassis.

For More Information on...

- the status tabs and fields in DashBoard, refer to the section “**Status Tabs Overview**” on page 31.

Monitoring the Status of the Fans

The state of the fans is constantly monitored. The fan status may be observed in DashBoard by selecting the Hardware tab. Ultracool fan speeds below 2000rpm (approx.) will cause an alarm state.

To view the status of a fan via DashBoard

- Display the Ultracool interface in DashBoard as outlined in “**Accessing the Ultracool Interfaces in DashBoard**” on page 21.
- Select the **Hardware** tab.

The tab displays a read-only field for each fan in the Ultracool chassis.

★ Contact Ross Technical Support if you experience an error with Ultracool.

Monitoring the Ultracool PSU States

You can use DashBoard to monitor the overall status of each **PWR** port on the chassis. Refer to the section “**Hardware Tab**” on page 31 for a list of possible messages in these fields.

To enable monitoring the redundant power supply

- Display the Ultracool interface in DashBoard as outlined “**Accessing the Ultracool Interfaces in DashBoard**” on page 21.
- Select the **Setup** tab.
- Select the **Redundant Power Alarm** box to enable the alarm on a missing redundant power supply.

Maintenance

This chapter provides additional information for the ongoing maintenance of your Ultracool.

Moving the Duct on the Rear Panel

The duct affixed to the back of Ultracool is located, by default, on the right side when facing the chassis front. This is to ensure that the Ultracool assists in cooling an Ultrix router which is located below.

If your setup requires that the cooling air that the Ultracool outputs is instead directed to the left side, you will need to remove the duct from its default position and re-affix it to the Ultracool chassis on the opposite side.

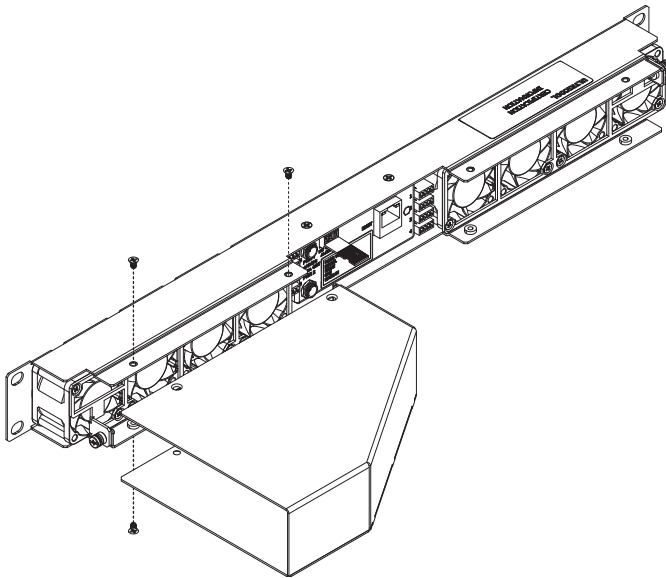
Remove the Duct

To move the duct from the default position to the opposite side of the chassis, you must first remove the four screws, remove the duct from the chassis, and rotate the duct.

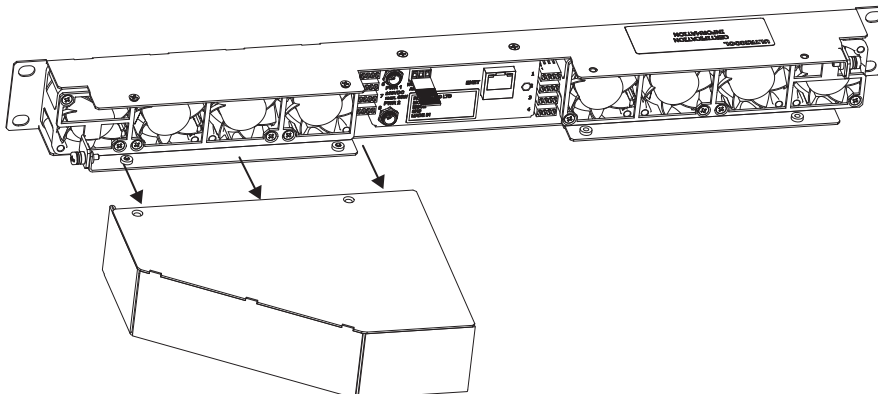
To remove the duct from the Ultracool chassis

1. Remove the four screws that affix the duct to the Ultracool chassis (two on the top and two on the bottom).

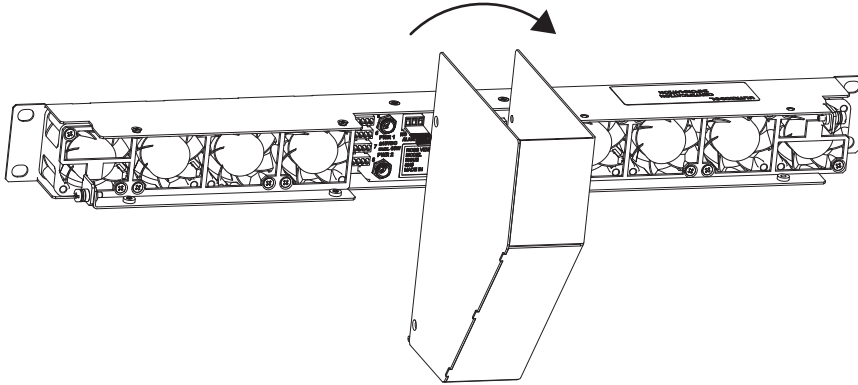
★ Set the screws aside as you will need them to affix the duct to the other side of the chassis.



2. Grasp the duct on both sides and gently pull the duct towards you to fully disengage it from the chassis.



3. Rotate the duct 180° clockwise.

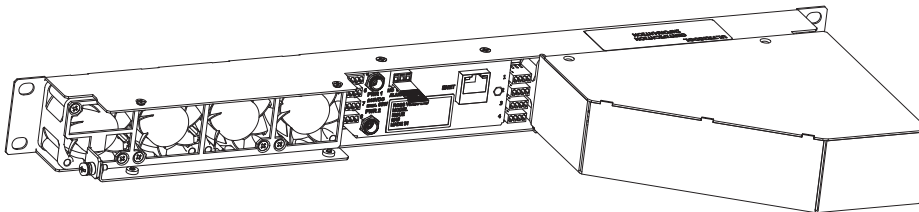


Installing the Duct

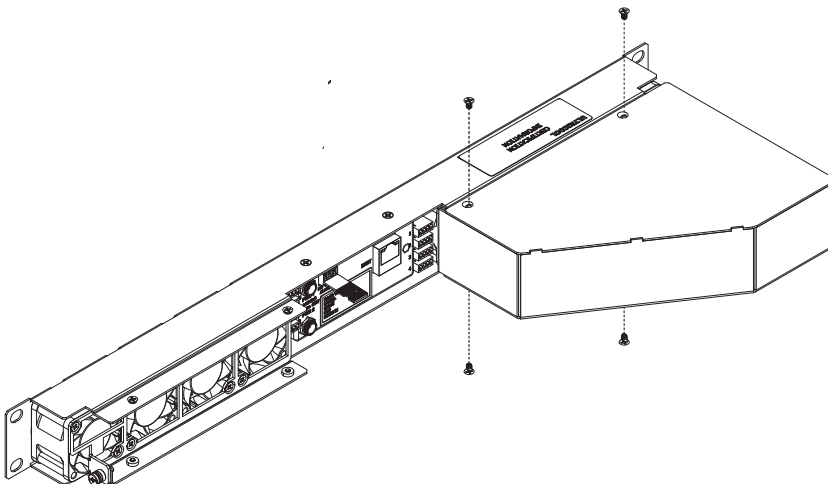
To install the duct in its new position, you must position the duct over the screw holes and affix the duct to the chassis using four screws.

To install the duct on the right-side of the Ultracool chassis

1. Position the duct on the right-side of the chassis so that:
 - the screw holes on the duct align over top the screw holes on the chassis
 - the exit wall on the duct is aligned with the right side of the chassis



2. Use the four screws from the procedure “**To remove the duct from the Ultracool chassis**” on page 29 to affix the duct to the right-side of the chassis.



DashBoard Interface Overview

Ultracool groups the configuration and monitoring features in two areas in the DashBoard client window: Status (tabs in the left pane of the window), and Configuration (tabs in the right pane of the window). The following sections outline the fields, menus, and parameters displayed in each area.

Status Tabs Overview

This section summarizes the read-only information displayed in the Status tabs. Some fields in the Status tabs vary in severity from green (valid), yellow (caution), to red (alarm). DashBoard reports the most severe alarm for a single field. Alarm colors are noted within the tables as text set in brackets next to the menu parameter name.

Product Tab

Table 10.1 summarizes the read-only information displayed in the **Product** tab.

Table 10.1 Product Tab

Item	Parameters	Description
Device Name	#	Indicates the name assigned to the device in the Setup tab
Product	Ultracool	Indicates the model name of this unit
Supplier	Ross Video	Indicates the supplier of this unit
Board Rev	#	Indicates the hardware version of the Ultracool control module
Board S/N	#	Indicates the serial number assigned to this unit
MAC Address	#	Media Access Control (MAC) address for ethernet connectivity
Software Rev	#	Read-only information used by Ross Technical Support

Hardware Tab

Table 10.2 summarizes the read-only information displayed in the **Hardware** tab.

Table 10.2 Hardware Tab

Item	Parameters	Description
Status	RossTalk (Purple)	The RossTalk server was started and will adjust the fan speed as per the received command
	Manual override (Yellow)	The user selected one of the fixed Fan Mode settings (Min, Low, Medium, or High). Refer to Table 10.3 for a list of settings.
	Connecting... (Blue)	Ultracool is attempting to connect with Ultrix
	Connected to Ultrix (Blue)	Ultracool is connected and controlled by an Ultrix

Table 10.2 Hardware Tab

Item	Parameters	Description
PSU # State	Present -OK	The specified power supply connection is present and working correctly
	Missing	The specified power supply connection is missing; no power supply is detected on this port
	Missing - Alarm masked	The Redundant Power Alarm is disabled
	Voltage Error	The specified power supply is out of voltage range
Fan # (rpm)	#	Reports the speed of the specified fans (~4000-18000rpm)
Temp (°C)	#	Reports the current interior temperature of the Ultracool chassis

Setup Tab

Table 10.3 summarizes the options in the Setup tab.

Table 10.3 Setup Tab

Item	Parameters	Description
Fan Settings		
Mode	Auto	Enables communications with Ultrix (if set) or RossTalk mode
	Min	Sets the fan speed to the minimum RPM
	Low	Sets the fan speed to approximately 20% of the maximum speed
	Medium	Sets the fan speed to approximately 50% of the maximum speed
	High	Sets the fan speed to approximately 100% of the maximum speed
Ultrix Connection		
Device Control	Manual IP	Enables you to manually specify the IP Address of the Ultrix router that will control the Ultracool. It is recommended to use this setting if your network policy blocks the Walkabout multi-cast UDP port.
	RossTalk client	Enables the Ultracool to get and send RossTalk commands from an external device
	Ultrix #	The specific Ultrix router will control the Ultracool
Refresh Device List	Refresh	Ultracool polls the network for Ultrix routers. Updates the list of detected routers, to a maximum of six, that are available for communication.
Ultrix IP Address	##.##.##.###	Specifies the IP Address of the Ultrix router that is communicating with the Ultracool. The Device Control is set to Manual IP.

Table 10.3 Setup Tab

Item	Parameters	Description
Alarms		
Redundant Power Alarm	Selected	The front panel PWR LEDs and the rear panel GPI will trigger upon a missing redundant power supply connection
	Cleared	Disables this alarm reporting
Front Panel Enable	Selected	The Fan Setting mode can be changed using the MODE button on the front panel
	Cleared	Disables the MODE button on the front panel
Factory Settings	Restore	Restores all alarm options to selected, the Ultrix connection is cleared, and the fans are set to Low.

Network Tab

Table 10.4 summarizes the options in the **Network** tab.

Table 10.4 Network Tab

Item	Parameters	Description
Device Name	#	Assigns a unique name to the Ultricool. This name also displays in the DashBoard tree view. The default is Ultricool.
IP Address	###.###	Specifies the IP address for the Ultricool. The default is 192.168.20.125.
Subnet Mask	###.###	Specifies the subnet mask for the Ultricool. The default is 255.255.255.0.
Default Gateway	###.###	Specifies the gateway for communication outside of the local area network (LAN).

Technical Specifications

This chapter provides technical information for the Ultracool. Note that specifications are subject to change without notice.

Physical Dimensions

Table 11.1 Physical Dimensions

Item		Specifications
Width		18.90" (48cm)
Depth (approx.)	With duct	6.20" (15.75cm)
	Without duct	1.60" (4.10cm)
Height		1.72" (4.40cm)
Weight (approx.)		2.69lb (1.25kg)

General Specifications

Table 11.2 General Specifications

Item	Specifications
Communications	10/100Mbps Ethernet
Ultrix communication	TCP port 8877
RossTalk communication	TCP port 7788
DashBoard communication	TCP port 5253
Walkabout communication	UDP port 5555

Power Consumption

Table 11.3 Power Specifications

Item	Specifications
Voltage	15VDC
Power	60W max. 50W (all fans operation at 100% RPM)

