



Protecting Your Digital Assets™



# CRU® Data Express® DX175

## User Manual

### Features

- Short frame length is ideal for fitting in smaller computers
- Toolless entry into the drive carrier
- Temperature Control Cooling Sensor auto-adjusts fan speed depending on need
- Push-button carrier ejection mechanism
- Keylock secures the carrier from accidental ejection
- Rated for up to 50,000 carrier insertions





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## 1 GENERAL INFORMATION

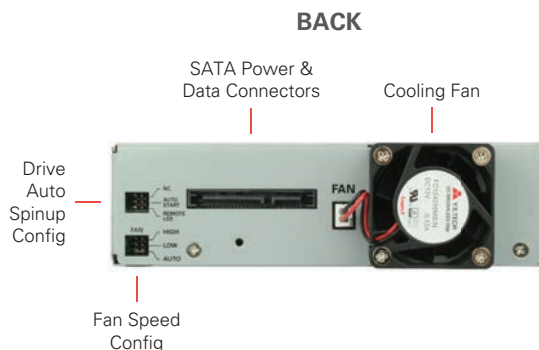
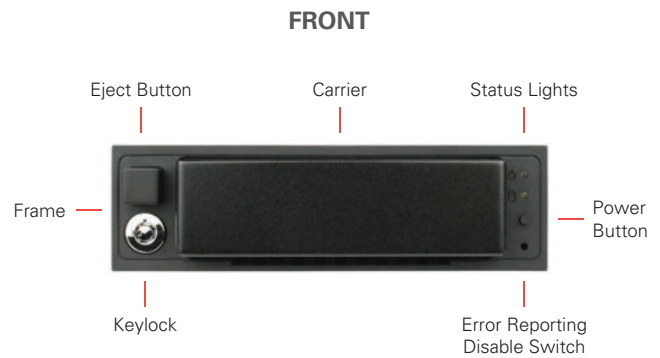
### 1.1 PACKAGE CONTENTS

The following list contains the items that are included in the complete configuration for this device. Please contact CRU if any items are missing or damaged:

Accessories	Quantity
Installation screws for receiving frame	4
Installation screws for 2.5" drive mounting	4
Installation screws for 3.5" drive mounting	4
Data Express key	3
Quick Start Guide	1

### 1.2 IDENTIFYING PARTS

Take a moment to familiarize yourself with the parts of the product. This will help you to better understand the following instructions.





### 1.3 LED BEHAVIOR

LED	COLOR	STATE	DESCRIPTION
Drive Ready/Error	White/ Red	Flashing White	The drive is inside the bay and powering up.
		Solid White	The drive is powered on and ready for access.
		Flashing Red and White	Fan failure. Please contact Technical Support.
		Solid Red	DC power failure. Please contact Technical Support.
Drive Activity	White	Flashing	The drive inside the bay is being accessed by your computer. See Section 3.2 for configuration instructions.
		Solid	The computer's SAS or SATA host controller does not support drive activity polling. See Section 3.2 for configuration instructions.

### 1.4 WARNINGS AND NOTICES

Please read the following before handling this product.

#### General Care

- The circuit boards within the product are susceptible to static electricity. Proper grounding is strongly recommended to prevent electrical damage to the product or other connected devices, including the computer host. Avoid all dramatic movement, tapping on the unit, and vibration.
- Avoid placing the drive carrier close to magnetic devices, high voltage devices, or near a heat source. This includes any place where the product will be subject to direct sunlight. Do NOT allow water to make contact with the carrier or receiving frame.
- Before starting any type of hardware installation, please ensure that all power switches have been turned off and all power cords have been disconnected to prevent personal injury and damage to the hardware.
- To avoid overheating, the DX175 should be operated in a well-ventilated area.
- Remove the drives before transporting the DX175 to prevent damage to the drive interfaces.

## 2 DX175 INSTALLATION

### 2.1 FRAME INSTALLATION

- a. Slide the DX175 receiving frame into an open 5.25-inch drive bay on your computer.
- b. Secure the frame to the chassis with the mounting screws provided.
- c. Attach a SAS or SATA data cable to the SAS/SATA data connector on the rear of the frame and attach the other end to the appropriate SAS or SATA host inside your computer.
- d. Attach a SATA power connector to the rear of the frame.

### 2.2 DRIVE INSTALLATION

- a. If the carrier is locked into the frame, insert a Data Express Key into the lock and turn it 90 degrees counterclockwise.
- b. Push in on the ejection button of the carrier to pop it out.
- c. Press in on the button securing the cover to the rear of the carrier and lift the cover upwards to remove it.
- d. Mount a 3.5-inch or 2.5-inch drive inside of the carrier.



- e. With one hand on top of the drive, turn the carrier over. Then secure the drive to the carrier using the screws provided.
- f. Reattach the carrier cover. Insert the front of the carrier into the front of the cover while simultaneously lowering the cover over the top of the carrier.

### 2.3 OPERATING YOUR DX175

- a. Slide the DX175 carrier into the frame, then push until the carrier clicks.
- b. You may optionally insert the provided Data Express Key into the keylock and turn it 90 degrees clockwise to secure the carrier to the frame.
- c. To power the DX175 on, press and hold the power button until the Drive Ready LED begins to flash.

**NOTE** If the drive and carrier are already installed into the receiving frame before a system power up, you do not have to press and hold the switch to power on the drive. The DX175 will turn on automatically when the system is powered on. See Section 3.3 for information on how to disable this behavior.

Your DX175 removable drive enclosure is now ready to use! If the drive inside is already formatted, it can be used right away. If the drive is brand new or its format is not compatible with your computer, the drive will need to be formatted before being used. Formatting a drive will erase all data on the drive, so be sure to back up your data before beginning this operation.

### 2.4 EJECTING A CARRIER

- a. Turn off the computer or properly dismount the drive from the system. To dismount the drive, ensure there are no file transfers in progress and the white Drive Activity LED is off before turning the DX175 off.
- b. If the carrier is locked into the frame, insert a Data Express Key into the lock and turn it 90 degrees counterclockwise.
- c. Press in on the eject button to eject the carrier.

## 3 OTHER CONFIGURATION OPTIONS

### 3.1 ERROR REPORTING DISABLE SWITCH

This switch (see Section 1.2) is located right below the power switch on the front of the DX175 and allows the user to disable the red error LED on the Drive Ready/Error LED. Insert a paper clip or similar object into the hole to activate the switch and disable error reporting.

### 3.2 DRIVE ACTIVITY LED POLLING

Some SATA PC systems and host controllers provide support for the Drive Activity LED feature. The Drive Activity LED can be enabled via host connection (cable not included) to the “Remote LED” pin located on the rear of the DX175 frame. Refer to your SATA PC system or host controller manufacturer’s documentation for further information.

### 3.3 DRIVE AUTO SPINUP

To disable the drive from spinning up automatically when the carrier is inserted into the DX175 frame, place a jumper on the “Auto Start” pins located on the rear of the DX175 frame.



### 3.4 FAN SPEED

Adjust the fan speed by adjusting the “Fan” jumper located on the rear of the DX175 frame.

#### Fan Jumper Settings

**High** - Fan is set to high speed

**Low** - Fan is set to low speed

**Auto** - Enables the DX175’s built-in Temperature Control Cooling Sensor (TCCS). The fan speed is automatically adjusted depending on the temperature of the drive carrier.

## 4 USAGE WITH WINDOWS AND MAC OPERATING SYSTEMS

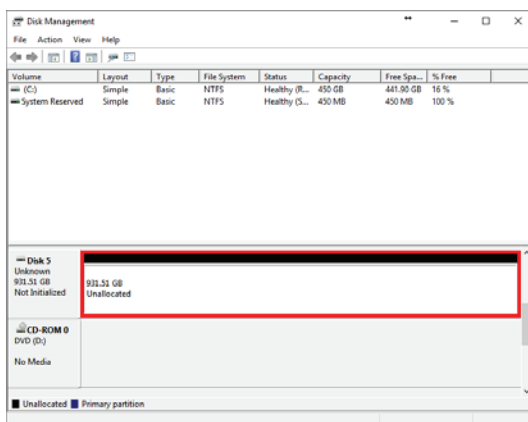
### 4.1 USAGE WITH WINDOWS OPERATING SYSTEMS

#### 4.1.1 Format a Drive

When you first mount a drive to a Windows operating system, a pop-up window will ask you if you would like to format it. Click **Format Disk** and skip to Step E in the instructions for your operating system below. If the prompt does not pop up, use the Disk Management utility by following the steps below for your specific Windows operating system:

#### Windows 10

- a. Right-click on the **Start Button** and then select **Disk Management**.
- b. The drive should appear in the list of Disks in the lower pane. You may need to scroll down to see it. If the drive is already formatted, you can identify it easily by its volume name. If the drive is not initialized or is brand new, a window will pop up asking you to select a partition type. Select **GPT** and press **OK**.
- c. To format the volume, right-click the **Drive Properties Box** of the drive (highlighted red in Figure 1) and select **New Simple Volume...**
- d. Unless you wish to customize the settings in these dialog prompts, click **Next** on the Select Partition, Specify Volume/Partition Size, and Assign Drive Letter or Path dialog prompts, leaving the default settings.



**Figure 1.** The Disk Management window in Windows 10 is very similar to the one found in Windows 8. The Drive Properties Box is highlighted in red.



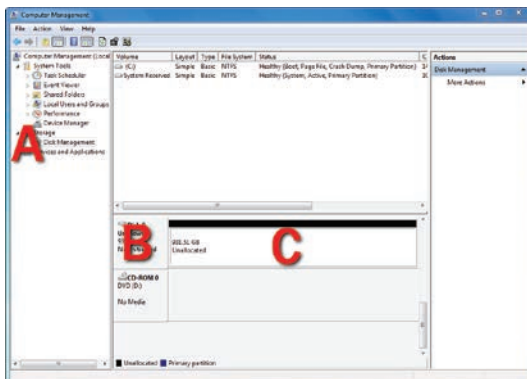
- e. You will now see a window that allows selection of a file system. Choose **NTFS** and enter a name for the new volume. Be sure to check the box labeled **Quick Format**, which will ensure that the formatting process takes less than a minute.
- f. Click **Next** and then **Finish** to start the format process. When the format is complete, the Drive Properties Box will update to show the new volume name. The new volume can now be found by opening a File Explorer window and clicking on **This PC** in the navigation pane to the left.

### Windows 8

- a. Press **WINKEY + X** and then select **Disk Management**.
- b. The drive should appear in the list of Disks in the lower pane. You may need to scroll down to see it. If the drive is already formatted, you can identify it easily by its volume name. If the drive is not initialized or is brand new, a window will pop up asking you to select a partition type. Select **GPT** and press **OK**.
- c. To format the volume, right-click the **Drive Properties Box** (highlighted in red in Figure 1) and select **New Simple Volume...**
- d. Unless you wish to customize the settings in these dialog prompts, click **Next** on the Select Partition, Specify Volume/Partition Size, and Assign Drive Letter or Path dialog prompts, leaving the default settings.
- e. You will now see a window that allows selection of a file system. Choose **NTFS** and enter a name for the new volume. Be sure to check the box labeled **Quick Format**, which will ensure that the formatting process takes less than a minute.
- f. Click **Next** and then **Finish** to start the format process. The new volume can now be found by opening a File Explorer window.

### Windows 7

- a. Click on the **Start Button**, right-click the **Computer button** in the Start Menu, and then select **Manage**. In the left pane of the Computer Management window that opens, left-click on **Disk Management** (labeled 'A' in Figure 2).



**Figure 2.** The Computer Management window in Windows 7. 'A' denotes the Disk Management section, 'B' denotes the Device Properties Box, and 'C' denotes the Drive Properties Box.



- b. The drive should appear in the list of Disks in the lower pane. You may need to scroll down to see it. If the drive is already formatted, you can identify it easily by its volume name. If the Device Properties Box (labeled 'B' in Figure 2) says "Not Initialized", you'll need to initialize the disk before formatting it.

Right-click where it says "Not Initialized" and select **Initialize Disk**. If you are prompted to select a partition type, select **GPT**.

- c. To format the volume, right-click the **Drive Properties Box** (labeled 'C' in Figure 2) and select **New Simple Volume...**
- d. Unless you wish to customize the settings in these dialog prompts, click **Next** on the Select Partition, Specify Volume/Partition Size, and Assign Drive Letter or Path dialog prompts, leaving the default settings.
- e. You will now see a window that allows selection of a file system. Choose **NTFS** and enter a name for the new volume. Be sure to check the box labeled **Quick Format**, which will ensure that the formatting process takes less than a minute.
- f. Click **Next** and then **Finish** to start the format process. When the format is complete, the Drive Properties Box will update to show the new volume name. The new volume can now be found by clicking on the **Computer button** in the Start Menu (Windows 7 or the Windows Server 2008 product family).

#### 4.1.2 Mount and Unmount Volumes

##### Mount a Volume

If the drive inside of the DX175 is already formatted, you can begin using the volume right away. When the DX175 is properly connected and turned on, a window may open to allow you access to the volume. If no window appears, find the volume by opening a File Explorer window (Windows 10, 8, and Server 2012 R2), by clicking on **This PC** in the navigation pane of a File Explorer Window (Windows 10), by clicking on **Computer** in the navigation pane of a File Explorer Window (Windows 8 and Server 2012), or by clicking the **Computer button** in the Start Menu (Windows 7 or the Windows Server 2008 product family).

##### Unmount a Volume

If are using the DX175 in conjunction with an SATA host card or motherboard with hot swap support enabled, you should unmount the DX175 before powering it down. Otherwise follow the instructions in the third paragraph of this section.

To unmount the volume, left click the **USB plug icon** with the checkmark on the Desktop task bar and select the proper device from the menu that pops up.

You may have to click on the **Show Hidden Icons arrow** on the task bar to find the correct icon. Windows will indicate when it is safe to disconnect the DX175.

Many SATA hosts do not support unmounting SATA volumes, but third-party software utilities like HotSwap! are available that will provide the functionality. You may download one of these utilities or follow these instructions: Ensure no file transfers are taking place and make sure the Drive Activity



Figure 3. The USB plug icon in the Windows 10 Desktop task bar.



LED is not blinking, as disconnecting the unit while a file transfer is in progress can result in data loss. Then turn the DX175 off. You may need to restart your computer to remount the DX175.

**NOTE** Disconnecting the DX175 while Windows is accessing it can result in data loss.

## 4.2 USAGE WITH MAC OPERATING SYSTEMS

### 4.2.1 Format a Drive

To format a hard drive or SSD, use Disk Utility (see Figure 4), which can be found in **Applications** → **Utilities**, or by selecting Spotlight Search and typing in “Disk Utility” and hitting **Return** on your keyboard.

- Click on the drive in the window to the left.
- Click on the **Erase button** at the top.
- Enter a name for the new volume
- Select the format type. Select **APFS** if it is an available option. Otherwise, select **OS X Extended (Journaled)**. If you need to use your DX175 with both macOS and Windows computers, select **ExFAT** instead.
- For the scheme, select **GUID Partition Map**.
- Click **Erase** to start the process.
- Once the format is complete, click **Done**.

### 4.2.2 Mount and Unmount Volumes

If the drive installed in the DX175 is already formatted, an icon representing the drive’s volume will appear on the desktop. You can begin using the volume right away. If the drive is unformatted, a message will appear on the desktop saying that the disk is unreadable. Use Disk Utility to easily format the drive (see Section 4.2.1).

Unmount the volume before powering down the unit by dragging the volume’s icon to the Trash, or by selecting the volume then pressing **Command + E**.

**NOTE** Disconnecting the DX175 without first unmounting the volume can result in data loss.



Figure 4. macOS Disk Utility, showing the “Erase” submenu.





### 4.2.3 Create a Boot Drive

To create a boot drive, you must first install macOS on the drive in the carrier using a third-party app like MacDaddy Install Disk Creator. Next, go to **System Preferences** → **Startup Disk**. A window will list the available bootable volumes. Select the volume from which you wish to boot. Another method is to hold down the **Option key** during boot up. A screen should appear that allows you to select the volume you wish to use. This is useful if you are sporadically booting from the DX175.

## 5 TECHNICAL SPECIFICATIONS

Product Models	Data Express DX175
Interface Types & Speeds	SATA: up to 6 Gbps SAS: up to 6 Gbps
Supported Drive Types	2.5 and 3.5-inch SATA HDDs and SSDs 2.5 and 3.5-inch SAS HDDs and SSDs
Data Connectors	One (1) SATA (SAS singleport) connector
Insertion Rating	up to 50,000 carrier insertions
Torque	2.5-inch drives, M3 screws: 4 inch-pounds max. 3.5-inch drives, #6-32 screws: 6 inch-pounds max.
Supported Operating Systems	Windows 10, 8, and 7 Windows Server 2016, 2012 and 2008 product families OS X/macOS 10.11 "El Capitan" or newer Linux distributions that support the connection type used
Compliance	EMI Standard: FCC Part 15 Class B EMC Standard: EN55024, EN55032 CE, RoHS, RCM
Product Weight	1.2 pounds (0.54 kg)
Product Dimensions	With Fan: 5.75in W x 7.37in L x 1.66in H (147mm W x 187mm L x 42mm H) Without Fan: 5.75in W x 6.77in L x 1.66in H (147mm W x 172mm L x 42mm H)
Technical Support	Your investment in CRU products is backed up by our free technical support for the lifetime of the product. Contact us through our website, <a href="http://www.cru-inc.com/support">www.cru-inc.com/support</a> or call us at 1-800-260-9800 or +1-360-816-1800.

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**FCC Compliance Statement:** "This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."

This equipment has been tested and found to comply with the limits for a Class B 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 home or 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.

In the event that you experience Radio Frequency Interference, you should take the following steps to resolve the problem:

- 1) Ensure that the case of your attached drive is grounded.
- 2) Use a data cable with RFI reducing ferrites on each end.
- 3) Use a power supply with an RFI reducing ferrite approximately 5 inches from the DC plug.
- 4) Reorient or relocate the receiving antenna.



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For more information,  
visit the CRU web site.

[www.cru-inc.com](http://www.cru-inc.com)