



# Avid® AirSpeed® 5000 Setup Guide

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# Using This Guide

Congratulations on your purchase of an Avid ingest and playout server. You can use your AirSpeed 5000 to capture incoming media directly into Avid shared storage or play out media to air. Media can be captured directly into Avid Unity workspaces unattended, freeing the Avid editing system for editing. Use the Avid editing system to edit the captured media into sequences and send the sequence back to the AirSpeed 5000 for playout.

This guide contains all the installation, configuration, and setup instructions you need to install and setup the Avid product.

Unless noted otherwise, the material in this document applies to the Windows® 7 operating systems. The majority of screen shots in this document were captured on a Windows 7 system.



*The documentation describes the features and hardware of all models. Therefore, your system might not contain certain features and hardware that are covered in the documentation.*

## Symbols and Conventions

Avid documentation uses the following symbols and conventions:

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Symbol or Convention	Meaning or Action
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A note provides important related information, reminders, recommendations, and strong suggestions.



A caution means that a specific action you take could cause harm to your computer or cause you to lose data.



A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.



This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.



This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.

Symbol or Convention	Meaning or Action
(Windows), (Windows only), (Macintosh), or (Macintosh only)	This text indicates that the information applies only to the specified operating system, either Windows or Macintosh OS X.
<b>Bold font</b>	Bold font is primarily used in task instructions to identify user interface items and keyboard sequences.
<i>Italic font</i>	Italic font is used to emphasize certain words and to indicate variables.
<b>Courier Bold font</b>	Courier Bold font identifies text that you type.
Ctrl+key or mouse action	Press and hold the first key while you press the last key or perform the mouse action. For example, Command+Option+C or Ctrl+drag.

## If You Need Help

If you are having trouble using your Avid product:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check the latest information that might have become available after the documentation was published.

New information would be found in the ReadMe file as a PDF document and available online.

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# 1 Avid AirSpeed 5000 Server Overview

The chapter describes features and hardware of the Avid AirSpeed 5000 server.

Depending on your server or model configuration, your Avid AirSpeed 5000 system might not contain certain features and hardware that are covered in the document. For more information on the hardware, see [“AirSpeed 5000 Server Hardware Components” on page 18](#).

## Unpacking and Inspecting Your System

This topic provides information on how to unpack your system and inspect it to verify that you have received the appropriate components for your order, and that the components are not damaged in any way.

### Unpack and Inspect Checklist

The following table provides a checklist of tasks that must be performed when unpacking and inspecting your AirSpeed 5000 system.

- 
- Unpack your system, as described in [“Unpacking Your System” on page 16](#).
  - Verify that you have all of the correct boxes and components, as described in [“Verifying Components” on page 16](#).
  - Verify that the components are not damaged, as described in [“Inspecting Components for Damage” on page 17](#).
-

## Unpacking Your System

Before you unpack your system, make sure the location is free of clutter and dust. Also, make sure you have clean power and a VGA monitor nearby.



*The drives that were shipped with this server are pre-configured for use with this server only. Therefore, when installing the drives, make sure to use these drives only.*



*If your server is 2-channel model, look for your codecs in a separate package. You will need to install these on your Video I/O card before rack mounting your system.*

### To unpack your system:

1. Open the box.
2. Unpack your system.

Avid recommends that you keep all packaging materials for at least 90 days. If you need to return a system to Avid Technology, Inc., the system must be repackaged in its original packaging material to ensure that there is no damage to the system during shipment.

3. Remove all of the boxes, and lay them out so you can verify that you have received all of the components that should have been shipped.
4. Once all of the boxes and components have been unpacked, visually inspect the chassis to make sure that it is free of all scratches and dents, that there are straight connectors on the back, and that the power-supply securing screws are not bent.
5. The next step is to verify that you have received all of the items particular to your order. For more information, see [“Verifying Components” on page 16](#).

## Verifying Components

Once you have unpacked everything, verify that you have the following components:

### AirSpeed 5000 Component List

---

#### Part Name

---

Based on your order, you will have one of these servers:

- AirSpeed 5000 Server, Base (4-channel model)
- AirSpeed 5000 Server, MPEG-2 HD (4-channel model)
- AirSpeed 5000 Server, AVC-Intra (4-channel model)
- AirSpeed 5000 Server, Base (2-channel model)

## AirSpeed 5000 Component List

---

### Part Name

---

Media drives (4-channel server have 10 per system, 2-channel server have 5 per system)

Multi I/O Expansion Panel (1)

Serial Breakout (DB9) cable (1)

Reference and LTC Breakout cable (1)

Multi I/O Expansion (DVI) cable (1)

Multi I/O Expansion (SCSI) cable (1)

Auxiliary 1.0/2.3 to BNC adapters (4)

Power cables (2)

AirSpeed 5000 Recovery Module

Rack mount kit (rails, clips, and screws)

Service ID card

Customer Letter

Health and Safety Guide

---



**If you are missing any of these components, contact Avid Customer Support before proceeding.**



*ReadMe files are not in the box. They can be found online. You should always check online for the most up-to-date release notes or ReadMe because the online version is updated whenever new information becomes available. To view these online versions, visit the Knowledge Base at [www.avid.com/readme](http://www.avid.com/readme).*

## Inspecting Components for Damage

Once you have verified that all of your components have been shipped, you must verify that they are not damaged.

### To inspect components for damage:

1. Visually inspect all of the hardware components listed in the previous section to make sure that none of them were damaged during shipment.
2. If you received a hardware component that was damaged, contact Avid Customer Support.

# AirSpeed 5000 Server Hardware Components

The AirSpeed 5000 server ships with four on-board 1-Gb Ethernet ports. The Avid AirSpeed 5000 has two auto-sensing power supply modules that set the voltage automatically for either 100 V or 240 V at 50 to 60 Hz. For detailed specifications, see [“Power Specifications” on page 108.](#)<sup>®</sup>

The Avid AirSpeed 5000 server uses the Windows 7 Professional Service Pack 1 for Embedded Systems operating system. The AirSpeed 5000 client operating systems that are supported in your software release are listed in the latest AirSpeed 5000 ReadMe.



*The Windows Product Key Certificate of Authenticity is located to the top-right-front corner of the Avid AirSpeed 5000 server. Be sure to write down this number, and use it to activate your Windows 7 Operating System.*

## AirSpeed 5000 Server Component List Comparison by Model

Server	Components
AirSpeed 5000 Server (4-channel models)	<p>All AirSpeed 5000 (4-channel model) servers contain the following:</p> <ul style="list-style-type: none"> <li>• Ten (10) data drives for storing data. The size of the data drives is shown on the front of each drive.</li> <li>• Two (2) system drives. The Avid AirSpeed 5000 uses two externally accessible, mirrored system drives for the operating system and application software.</li> <li>• Two (2) Video I/O cards for capturing and playing video.</li> <li>• One (1) Multi I/O Expansion card for providing video reference, GPIO, LTC, and serial connectivity. This is for connecting to the Multi I/O Expansion Panel (included) when requiring these signal capabilities.</li> </ul>

## AirSpeed 5000 Server Component List Comparison by Model

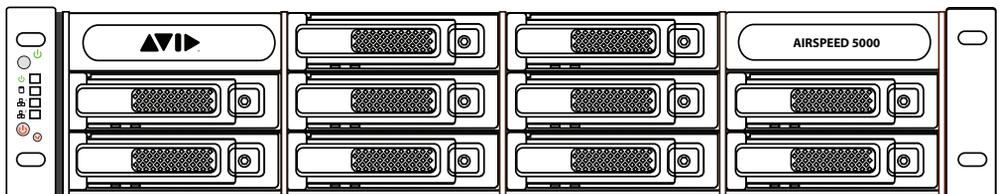
Server	Components
AirSpeed 5000 Server, (2-channel models)	<p>All AirSpeed 5000 (2-channel model) servers contain the following:</p> <ul style="list-style-type: none"> <li>• Five (5) data drives for storing data. The size of the data drives is shown on the front of each drive.</li> <li>• Two (2) system drives. The Avid AirSpeed 5000 uses two externally accessible, mirrored system drives for the operating system and application software.</li> <li>• One (1) Video I/O card for capturing and playing video.</li> <li>• One (1) Multi I/O Expansion card for providing video reference, GPIO, LTC, and serial connectivity. This is for connecting to the Multi I/O Expansion Panel (included) when requiring these signal capabilities.</li> </ul>

## Avid AirSpeed 5000 Server - Front Panels

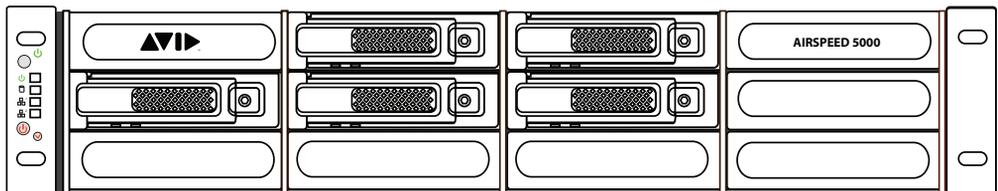
The front of the Avid AirSpeed 5000 server provides access to ten (10) data drives for 4-channel model servers. 2 channel models servers contain five (5) data drives. Both models contain activity LEDs, an error LED, and the Power and Reset buttons.

Each drive can be locked and unlocked with the use of a key that is provided with your system.

### Front of the Server (4-channel models)

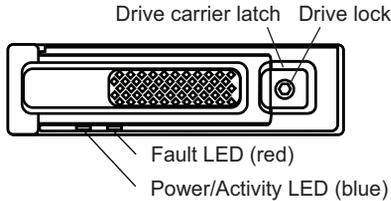


### Front of the Server (2-channel models)



Regarding data drives, each data drive has a blue and red LED on the bottom front of the drive. The left LED (blue) is on when a drive has power and flashes when the drive is in use. The right LED (red) is lit when an error is detected with the drive and the drive needs to be replaced. Details on the data drive LED indicators are in the following table.

### Data Drives



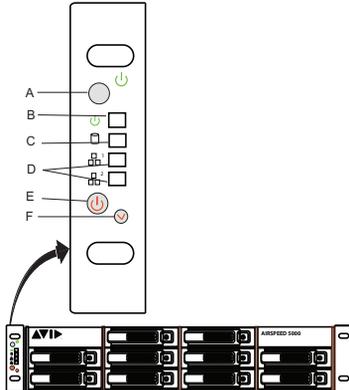
### Data Drive LED Functions

Drive State	Blue LED	Red LED	Comments
On-line Inactive	On solid	Off	Healthy online drive, no disk I/O
On-line Active	Activity	Off	Healthy online drive, with disk I/O
Online Disk in a Failed Set	On solid/Activity	Double flashing	Nothing needs to be done to these online drives, but failed drive should be replaced
Data Rebuilding	Activity	Double flashing	Automatically occurs on drive failure
Initializing	Activity	Fast flashing	Happens on initial array creation
Failed Data Disk	On solid	On solid	Should replace disk
Unused Disk	On solid	Off	

## System Front Panel and LED Control Panel

The system has two buttons (Power and reset), and 5 LEDs located on the left rack ear next to the front panel. The following figure shows the front view and LED control panel.

### System Front View and LED Control Panel



The following table describes the control panel shown in the previous figure.

#### System Control Panel

Letter	Description	Description
A	Power button	Press to power on the server. Power button illuminates green when the power is on.
B	Power LED	Illuminates green when the system is powered on.
C	System Drive activity LED	Indicates drive activity from the onboard SATA controller and blinks when either of the system drives is being accessed.
D	Two green network activity LEDs	Illuminates green when a good network connection is established and blinks when there is network activity on the four built-in 1-GB network ports. The number beside the LED corresponds with the number beside the network port on the rear of the server.

## System Control Panel

Letter	Description	Description
E	System Reset button	Performs a soft reset when pressed. Do not use this button unless the system has had a fatal error and you need to restart. A soft reset restarts the system; it clears all active program memory (you lose unsaved work) and shuts down all active programs.
F	Red System error LED	Illuminates red when an error is detected with the system (fan, power supply, temperature, voltage).

## Drive Array and Slot Locations (4-Channel Models)

For 4-channel model server data integrity, RAID 50 configuration consisting of 2 sets of 5 drives each are created in the Avid AirSpeed 5000 server.



*The media drives have been pre-RAIDed at the factory to save time installing and configuring your system. You must install the media drives in the same chassis with which they were packaged. Failure to do so will require recreating the media drive RAID set which can take up to 24 hours.*



*The LSI MegaRAID Storage Manager is a RAID utility included with the Avid AirSpeed 5000 (Start > Programs > MegaRAID Storage Manager) and should be used only when instructed to by Avid Customer Support. For more information, see the AirSpeed 5000 Administrator's Guide.*



**The following drive configuration is created when the RAID groups are initially configured.**

### Initial 4-Channel Server Setup — Data Drive Slot Locations and RAID Groups

Empty	4 – RAID Group 1	7 – RAID Group 2	Empty
2 – RAID Group 1	5 – RAID Group 1	8 – RAID Group 2	11 – RAID Group 2
3 – RAID Group 1	6 – RAID Group 1	9 – RAID Group 2	12 – RAID Group 2

The two RAID groups are configured as follows:

- The first RAID drive group consists of drives 2- 6
- The second RAID drive group consists of drives 7, 8, 9, 11, 12



*Slots 1 and 10 are empty.*

## Drive Array and Slot Locations (2-Channel Models)

For 2-channel model server data integrity, RAID 5 configuration consisting of 1 set of 5 drives is created in the Avid AirSpeed 5000 server



*The LSI MegaRAID Storage Manager is a RAID utility included with the Avid AirSpeed 5000 (Start > Programs > MegaRAID Storage Manager) and should be used only when instructed to by Avid Customer Support. For more information, see the AirSpeed 5000 Administrator's Guide.*



**The following drive configuration is created when the RAID groups are initially configured.**

### Initial 2-Channel Server Setup — Data Drive Slot Locations and RAID Group

Empty	4 – RAID Group 1	7 – RAID Group 2	Empty
2 – RAID Group 1	5 – RAID Group 1	8 – RAID Group 2	Empty
Empty	Empty	Empty	Empty

The single RAID group is configured as drives 2, 4, 5, 7, 8.



*Slots 1, 3, 6, 9,10, 11, and 12 are empty.*

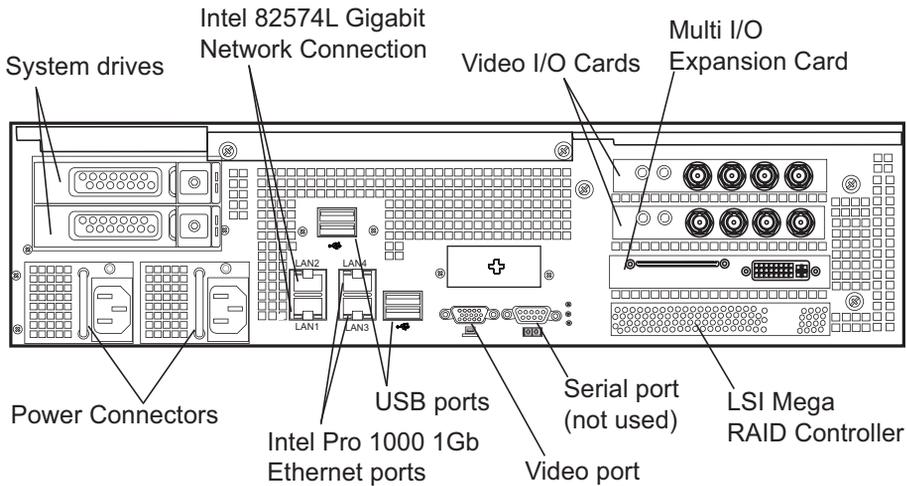
## Avid AirSpeed 5000 Server - Rear Panel

The rear panel Avid AirSpeed 5000 server provides access to the power supplies, system drives, video port, 1 gigabit (Gb) Ethernet ports, serial port (not used), and four USB connectors for the keyboard, mouse, and so on.



*The following illustration shows the shipping configuration of a 4-channel model AirSpeed 5000. Two 2-channel model servers only contain the top Video I/O card.*

### Avid AirSpeed 5000 Server - Rear Panel

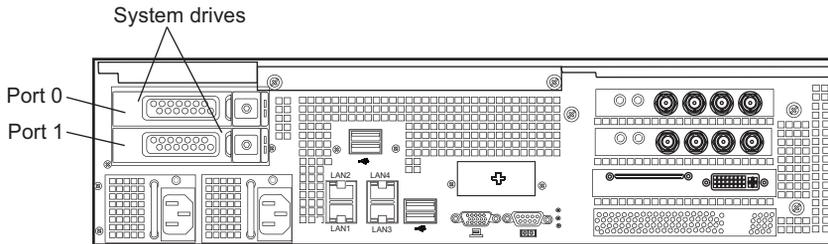


Each of these components is described in the topics below.

## System Drives

There are two system drives accessible from the rear of the Avid AirSpeed 5000 server. The top drive is Port 0, and the bottom drive is Port 1. These two drives are mirrored, and if a failure occurs on either one of the system drives, you can pull the failed drive out of the server, and install a replacement drive without turning off the Avid AirSpeed 5000 server.

As soon as a replacement system drive is installed, the working system drive creates a mirror of the original drive on the new drive. All Avid AirSpeed operations continue to run uninterrupted.



*The drive carriers for the system drives are locked to prevent them from opening during shipment. The plastic drive carrier key is mounted on the rear of the server beside the system drives.*

## Power Supplies

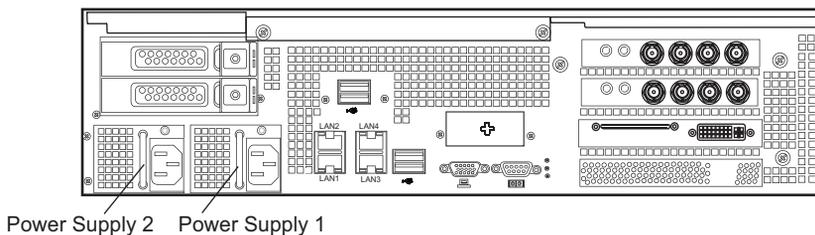
There are two power supplies accessible from the rear of the Avid AirSpeed 5000 server.

If a failure occurs on either one of the power supplies, you can pull the failed power supply out of the server, and install a replacement power supply without turning off the Avid AirSpeed 5000 server.

All Avid AirSpeed 5000 operations continue to run uninterrupted.



*From the rear of the chassis, the power supply on the left is Power Supply 2, and the power supply on the right is Power Supply 1.*

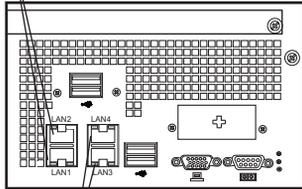


## Ethernet Ports

The AirSpeed 5000 Server comes equipped with four Ethernet connectors. Although all four are functional, we currently support the use of only two of these connectors (GigE Ports labelled LAN3 and LAN4) in a redundant configuration for Shared storage (ISIS).

The other ports can be used for other Ethernet uses.

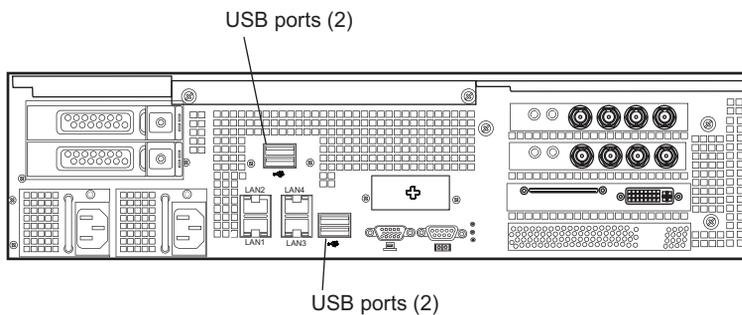
Intel 82574L Gigabit  
Network Connection



Intel Pro 1000 1Gb  
Ethernet ports  
(Used to connect to Shared Storage (ISIS))

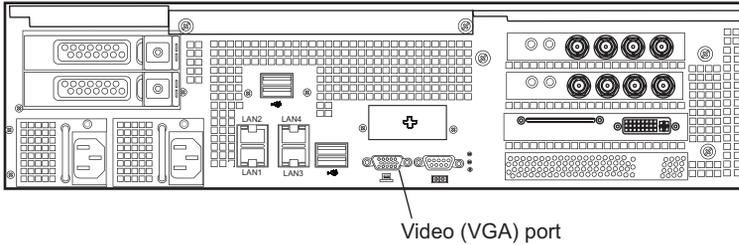
## USB Ports

There are four USB ports located on the rear of the Avid AirSpeed 5000 server.



## VGA Port

There is one VGA port located on the rear of the Avid AirSpeed 5000 server.



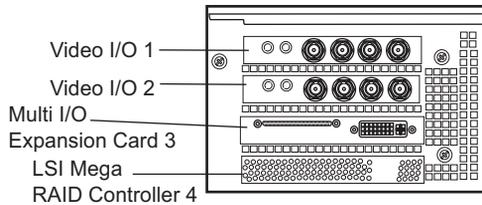
## PCI-E Card Slots

There are four PCI-E card slots accessible from the rear of the Avid AirSpeed 5000 server.

The following illustration shows the boards that are supported in the Avid AirSpeed 5000 server.



*AirSpeed 5000 2-channel model servers do not include Video I/O Card 2 (Video I/O 2).*



The following table lists the boards that are available in the AirSpeed 5000 server.

PCI Slot	Interface	Description
1	Video I/O Card 1	The top Video I/O card in Slot 1 is identified as Video I/O Card 1 and is used for connecting video. It contains two Video Inputs, two Video outputs and two Auxiliary outputs.
2	Video I/O Card 2	The bottom Video I/O card in Slot 2 is identified as Video I/O Card 2 and is used for connecting video. It contains two Video Inputs, two Video outputs and two Auxiliary outputs.



*This card is not included in 2-channel model servers.*

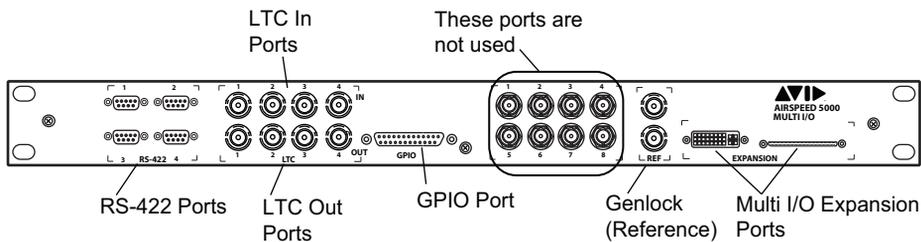
PCI Slot	Interface	Description
3 PCI-E x8	Multi I/O Expansion Card	The Multi I/O Expansion card is used for handling multiple LTC, reference, and other capabilities. Or, for even more functionality (including additional LTC outputs, multiple LTC inputs, and GPIO), use the Multi I/O Expansion cables to connect to the Multi I/O Expansion Panel.
4 PCI-E	Internal LSI® RAID controller board	The LSI MegaRAID board is installed in the fourth PCI-E x8 connector. There is no external connection. The LSI board connects to an internal SAS Expander board using a SAS cable.

## Multi I/O Expansion Panel - Rear View

The included Multi I/O Expansion Panel is required if you plan to use any of the following functionality:

- GPIO
- LTC Output
- More than 1 LTC Input

## Multi I/O Expansion Panel - Rear View



For information on connecting the Multi I/O Expansion Panel, see [“Multi I/O Expansion Panel Connection Information”](#) on page 57.

## 2 Installing the AirSpeed 5000 System

This chapter describes how to install an AirSpeed 5000 server on your site.

Topics in this chapter include:

- [Installing Codecs On Your Video I/O Board \(2-Channel Models Only\)](#)
- [Installing Avid AirSpeed 5000 Hardware in a Rack](#)
- [Installing the Avid AirSpeed 5000 Drives](#)
- [Cabling Up the AirSpeed 5000 Server](#)
- [Connecting a Keyboard, Monitor, and Mouse](#)
- [Connecting the Power Cords](#)
- [Turning On the Avid AirSpeed 5000 Server](#)
- [Performing System Diagnostics](#)

## Installing Codecs On Your Video I/O Board (2-Channel Models Only)

2-channel model servers are shipped without codec modules installed. Therefore, the codec modules must be installed onto the Video I/O board *before* the server is rack-mounted. Since, the codec modules are shipped separately from the server, make sure you locate the package containing the codec modules before proceeding.



*This task is not required for 4-channel model servers. They already come equipped with the appropriate codec modules installed on the Video I/O boards.*

This topic contains information on how to open the chassis cover and attach the supplied MPEG-2 HD or AVC-Intra codec modules to the Video I/O board of your 2-channel model server.

This task specifically involves removing the Video I/O boards, and attaching two (2) MPEG-2 HD or AVC-Intra codec modules to the Video I/O board, and then replacing the Video I/O board in the server.

The following topics are available:

- [AirSpeed 5000 Codec Module Kit Contents \(2-Channel Models\)](#)
- [Electrostatic Discharge Precautions](#)
- [Codec Module Installation Checklist \(2-Channel Models\)](#)
- [Performing System Diagnostics](#)

## AirSpeed 5000 Codec Module Kit Contents (2-Channel Models)

For all AirSpeed 5000 2-channel model servers, there are two codec modules that must be installed prior to rack mounting your server. Depending on 2-channel which model server you have ordered, these kits provide your Airspeed 5000 server with either MPEG-2 HD or AVC-Intra hardware capabilities. They are described in the table below.

### AirSpeed 5000 Codec Module Kit List (For 2-Channel Models)

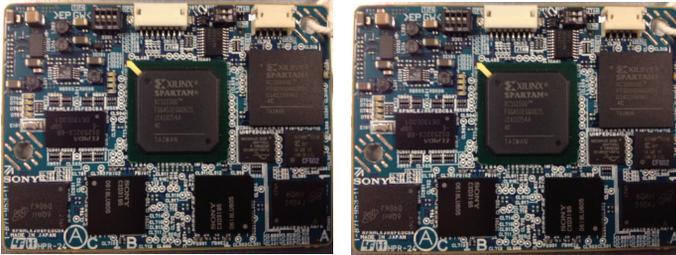
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#### Codec Module Kit Name

---

##### MPEG-2 HD Codec Module Kit

This kit includes two (2) MPEG-2 HD modules to be installed on the Video I/O board.



##### AVC-Intra Codec Module Kit

This kit includes two (2) AVC-Intra modules to be installed on the Video I/O board.



## Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can damage disk drives, cards, and other parts. Avid recommends that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground (any unpainted metal surface) on your server when handling parts.

### ESD and handling PCIe Cards

Always handle cards carefully. They can be extremely sensitive to ESD. Hold cards only by their edges. After removing a card from its protective wrapper or from the server, place the card component side up on a grounded, static free surface. Use a conductive foam pad if available but not the card wrapper. Do not slide the card over any surface.

## Codec Module Installation Checklist (2-Channel Models)

This checklist contains the necessary tasks required to install the codec modules on the Video I/O board in your 2-channel AirSpeed 5000 Server.

- 
- Remove the Server main cover as described in the topic [“Removing and Replacing the Server Main Cover \(2-Channel Models\)”](#) on page 33.
  - Remove the Video I/O board from the server, as described in the topic [“Removing the Video I/O Board \(2-Channel Models\)”](#) on page 34.
  - Attach the two (2) Codec modules to the Video I/O board, as described in the topic [“Attaching the Codec Modules to the Video I/O Board”](#) on page 38.
  - Replace the Video I/O board into the server, as described in the topic [“Replacing the Video I/O Board into the Chassis”](#) on page 39.
  - Replace the Server main cover as described in the topic [“Removing and Replacing the Server Main Cover \(2-Channel Models\)”](#) on page 33.
  - Perform hardware system diagnostics, as described in the topic [“Performing System Diagnostics”](#) on page 69.

## Removing and Replacing the Server Main Cover (2-Channel Models)

The AirSpeed 5000 server must be operated with the chassis cover in place to ensure proper cooling. However, you will need to remove the main cover to remove the Video I/O board, and add the appropriate codec modules to it.



*Before removing the main cover, make sure the server is powered down, and all peripheral devices and AC power cables are unplugged.*



*A nonskid surface or a stop behind the server may be needed to prevent the server from sliding on your work surface.*

### **To remove the server main cover:**

1. Observe the safety precautions described in [“Electrostatic Discharge Precautions” on page 32](#) and “Safety and Regulatory Information” in the AirSpeed 5000 Setup Guide.
2. Unscrew the thumbscrews at the back of the unit until they are loose.
3. Pull the thumbscrews backwards and slide the main cover until it hits the tabs.
4. Remove the main cover and set in a safe place.

### **To replace the server main cover:**

1. Place the main cover over the server system so that the side edges of the cover sit just outside the server system sidewalls.
2. Slide the main cover forward until it fits in place.
3. Tighten the rear thumbscrews.
4. The next step is to remove the Video I/O board. For more information, see [“Removing the Video I/O Board \(2-Channel Models\)” on page 34](#).

## Removing the Video I/O Board (2-Channel Models)

In order for you to insert the Codec modules onto Video I/O board, you must first remove the Video I/O board from the AirSpeed 5000 2-channel model server.

For future reference, note that VIO 1 is located in the top Video I/O board slot in the chassis:



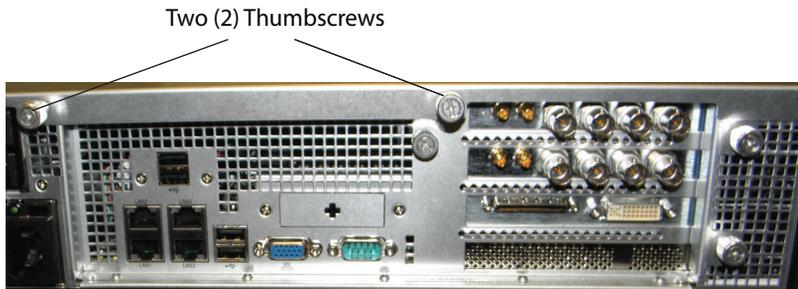
*Make sure the system is offline and powered down before removing the Video I/O board.*

Before you begin, make sure you have the correct Codec Module kit available. For more information, see [“AirSpeed 5000 Codec Module Kit Contents \(2-Channel Models\)”](#) on page 31.

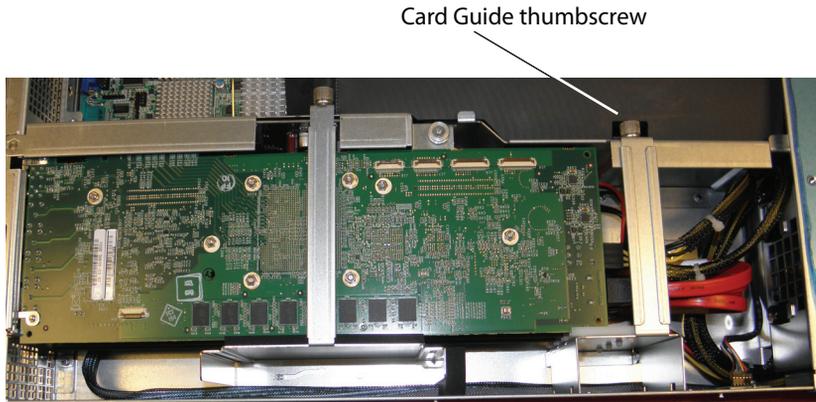
### To remove the VIO board from the chassis:

1. Observe the safety precautions described in [“Electrostatic Discharge Precautions”](#) on page 32 and [“Safety and Regulatory Information”](#) in the AirSpeed 5000 Setup Guide.
2. Power down the server and unplug all peripheral devices and the AC power cables.
3. Remove the server main cover. For instructions, see [“Removing and Replacing the Server Main Cover \(2-Channel Models\)”](#) on page 33.
4. Disconnect any cables attached to any add-in cards.
5. Loosen the thumbscrews on the back cover, and slide the cover back to remove it from the chassis.

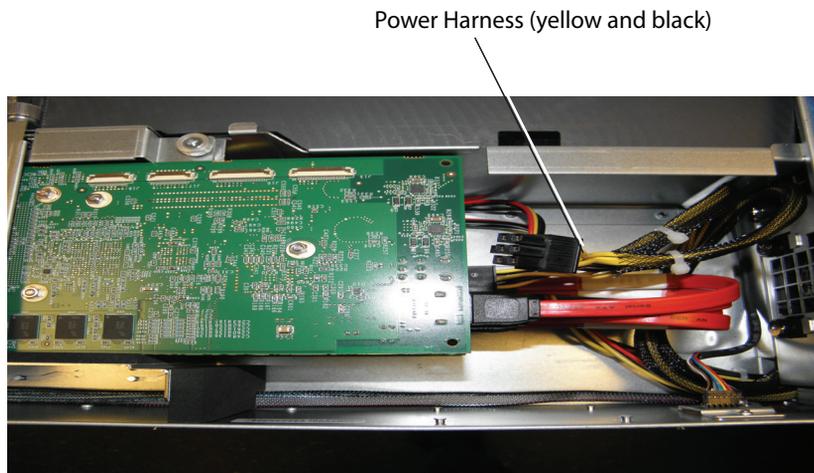
The following diagram shows the location of the two (2) thumbscrews on the rear of the server.



6. Loosen the thumbscrew on the card guide, and slide it over to remove it from the chassis.  
The following diagram shows the location of the Card guide thumbscrew.



7. To disconnect the Video I/O board 1 (VIO 1), do the following:
  - a. Remove the Power Harness (yellow and black cable) from the Video I/O board.



- b. Remove the two SATA (red) cables from the Video I/O board.

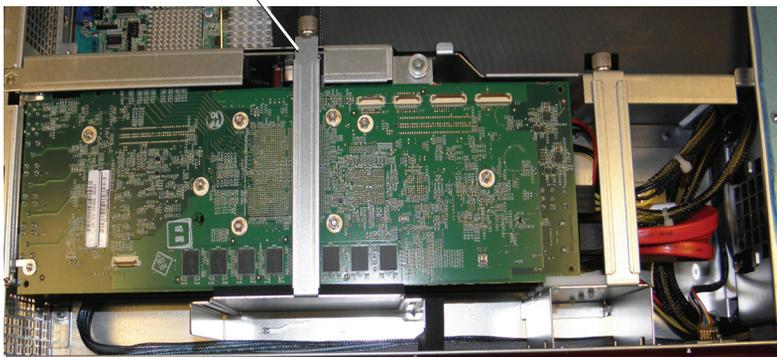


*Before removing the SATA cables, it's a good idea to observe how the SATA cables are connected (Top to Top, and Bottom to Bottom)*

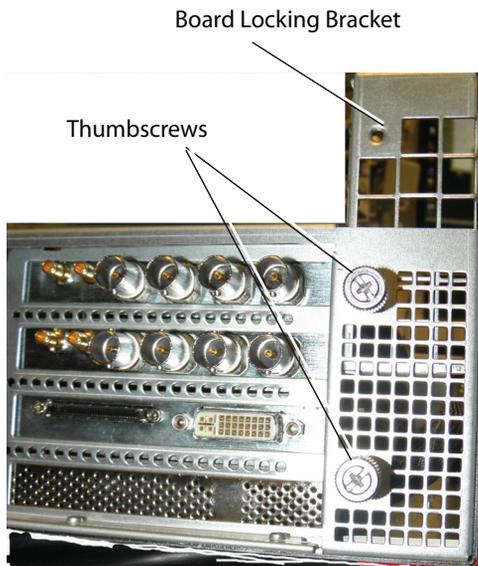


8. Release the Hold Down Bracket using the thumbscrews, and then slide it out of the chassis.

Hold Down Bracket and thumbscrew



9. Remove the Board Locking Bracket by loosening the thumbscrews, and sliding the bracket up, and out of the chassis.



10. Gently lift the Video I/O board (VIO 1) off of the riser card and out of the chassis.
11. The next step is to attach the Codec modules onto the Video I/O board.

## Attaching the Codec Modules to the Video I/O Board

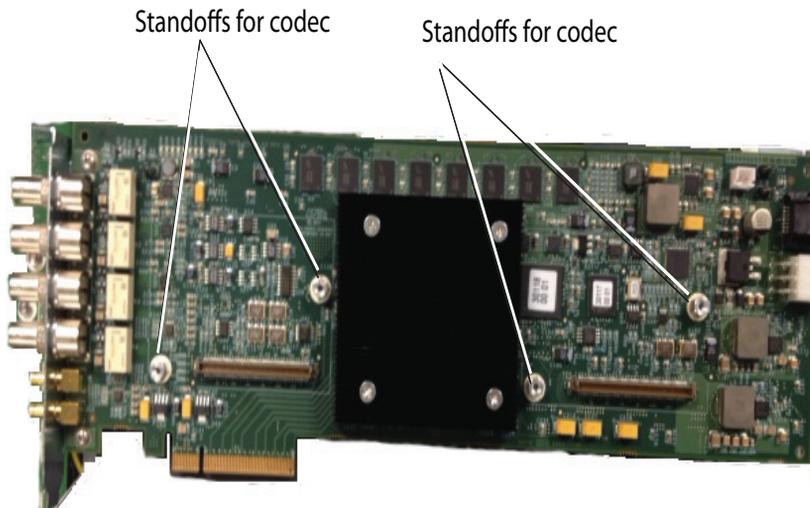
This topic contains information on how to attach two (2) codec modules to the Video I/O board.



*This procedure applies to both the MPEG-2 HD and the AVC-Intra codec module kits.*

### To attach the Codec modules to the Video I/O board:

1. Open the MPEG-2 HD, or AVC-Intra Codec Module kit that contains the codec modules that you are upgrading to, and place them on your workspace.
2. Take Video I/O board #1 (VIO 1), and place it component side up (with the standoffs showing).



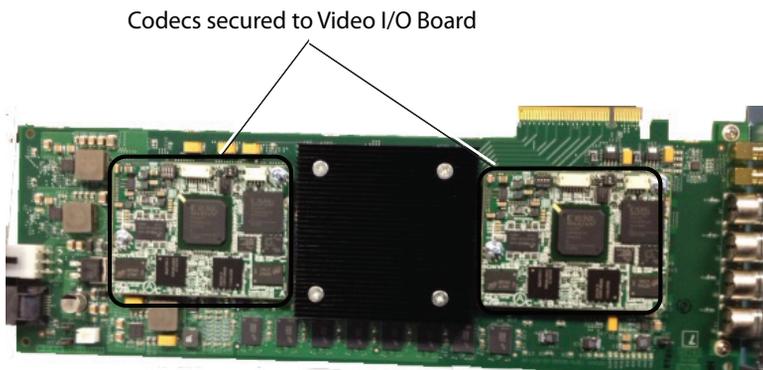
3. Using the supplied set screws and a #2 Phillips head screwdriver, do the following:
  - a. Align the holes in the codec to the standoffs on the Video I/O board
  - b. Firmly, attach the first codec to the connector on the Video I/O board.



*Codecs can only be placed one way.*

- c. Repeat Step 3 for the second codec.

When both codecs are screwed down to the Video I/O board, it will look like this:



4. The next step is to replace the Video I/O board (with the codec modules installed) back into the server. For more information, see [“Replacing the Video I/O Board into the Chassis” on page 39](#).

## Replacing the Video I/O Board into the Chassis

This topic contains information on how to replace the Video I/O boards in the server chassis.

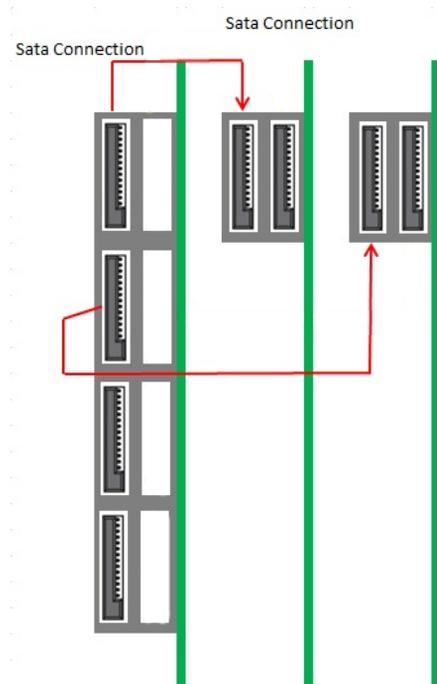
### To replace the VIO board into the chassis:

1. Observe the safety precautions described in [“Electrostatic Discharge Precautions” on page 32](#) and “Safety and Regulatory Information” in the *AirSpeed 5000 Setup Guide*.
2. Gently replace Video I/O board (VIO 1) into the top riser card slot.
3. Replace the Board Locking Bracket back down into it’s slot, and tighten the thumbscrews.

4. Reattach the SATA and Power cables for the Video I/O board (VIO 1) as follows:
  - a. Reattach the Power Harness (yellow and black cable) to the Video I/O board.
  - b. Reattach the two SATA (red) cables to the Video I/O board.



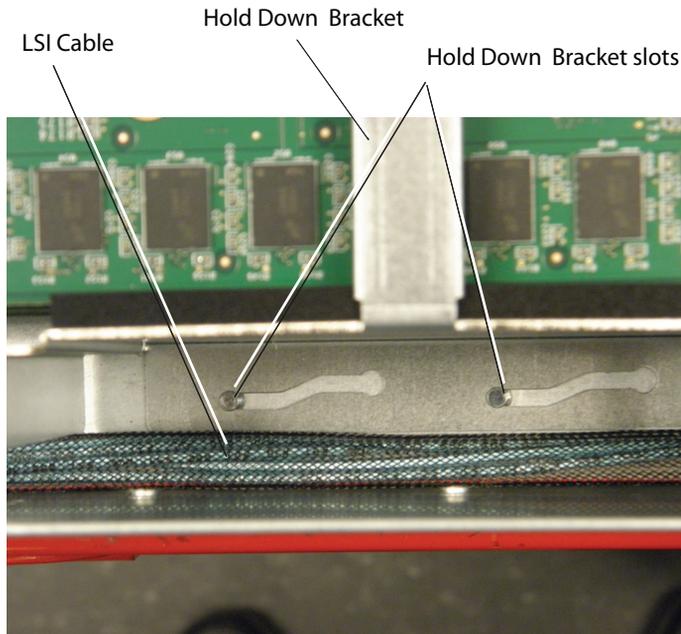
*Make sure the SATA cables are connected (Top to Top, and Bottom to Bottom).*



5. Replace the Hold Down Bracket by sliding it back into place. Once in place, tighten the thumbscrews.



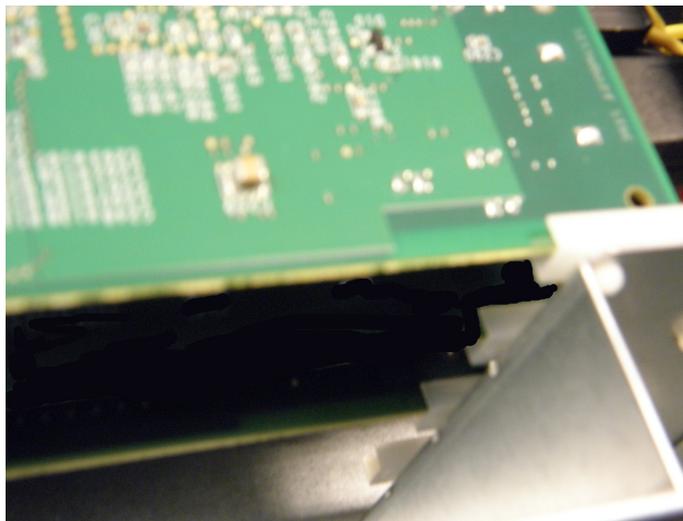
*Lift the LSI cable that goes along the side of the chassis, so that the Hold Down bracket sits at the bottom of the chassis in it's slot, then, tighten the thumbscrews.*



6. Reattach the Card guide, and tighten the thumbscrews.



*When reattaching the Card Guide, make sure the Video I/O board (top) and Hydra card (bottom), are secured in their respective slots.*



7. (Option) Reattach any cables that were removed from any add-in cards.
8. Replace the server main cover, and tighten the thumbscrews. For more information, see [“Removing and Replacing the Server Main Cover \(2-Channel Models\)”](#) on page 33.
9. (Option) If you want to make sure the codecs have been applied properly, as well as to make sure your system’s hardware is working properly, you can perform system diagnostics before you rack mount the system. Performing system diagnostics now requires that you connect all peripheral devices, and AC power cords into the server, and power up the server, then running System diagnostics. For more information on performing system diagnostics, see [“Performing System Diagnostics”](#) on page 69.

Otherwise, you can rack mount your system now, connect all peripherals, and power on the server after it has been rack mounted, and then perform system diagnostics later.

For more information, see [“Installing Avid AirSpeed 5000 Hardware in a Rack”](#) on page 43.

## Installing Avid AirSpeed 5000 Hardware in a Rack

The Avid AirSpeed 5000 is designed for 19-inch (483-mm) racks and require two EIA rack units (2U), or 3.5 inches (89 mm) of rack space. The rail kit installs into rails that are between 23-inches (584.2-mm) to 31-inches (787.4-mm) inches deep.

If you plan on using the Multi I/O Expansion Panel (7020-30353-00) for multiple LTC Ins, multiple LTC Outs, and GPIO capabilities, make sure you have another one rack unit (1U), or 1.75 inches (44.5mm) of rack space available.

The Avid AirSpeed 5000 includes rack mounting slide rails. If instructions are included with your rail kit, use them instead of the instructions included in this section. The standard rail configuration is for racks with square mounting holes. Optional brackets are included for racks with round holes. The rack-mounting kit requires inner slide rails be mounted to the Avid AirSpeed 5000 server and the outer slide rails are mounted to the rack. Once both the inner and outer rails are in place, slide the server with the inner rails attached into the outer rails. Secure the Avid AirSpeed 5000 server in the rack so it does not slide forward.



**The Avid AirSpeed 5000 is designed to be installed horizontally in a rack. Installing the Avid AirSpeed 5000 on an angle or in a sloped console causes the internal drives to wear faster than the intended life of the drive.**



**To ensure the stability of the rack enclosure, start from the bottom when you install the rack components in the rack enclosure.**

## Rack-mount Requirements

- **Elevated Operating Ambient** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment might be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.
- **Reduced Air Flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.  

Avid AirSpeed 5000 airflow is from the front of the server to the rear. Make allowances for cooling air to be available to the front panel surface and no restrictions at the rear.
- **Mechanical Loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.  

Make sure your rack enclosure is stable enough to prevent tipping over when one or more Avid AirSpeed 5000 servers are extended on the sliding rails.
- **Circuit Overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Grounding** — Reliable grounding of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).
- **Inside Enclosure Access** — If you want to extend the enclosure, and remove the top cover, you must allow 0.5 in (1.3 cm) clearance on top of the enclosure for cover removal.

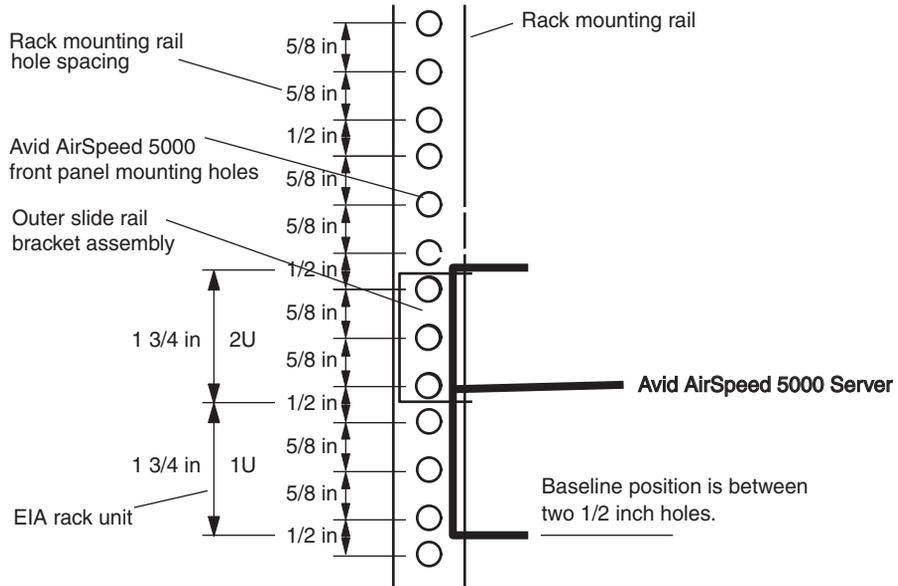
## Positioning the Avid AirSpeed 5000 Server in the Rack

The following information helps you decide where to install the Avid AirSpeed 5000 in the rack.

### To position the Avid AirSpeed 5000 in the rack enclosure:

- ▶ Select a position in the rack where the Avid AirSpeed 5000 is at the proper baseline position.

### Positioning the Avid AirSpeed 5000



## Separating the Slide Rails

You need to separate the slide rails and attach the inner “movable” section to the File Gateway server and the outer “fixed” section to the rack rails.

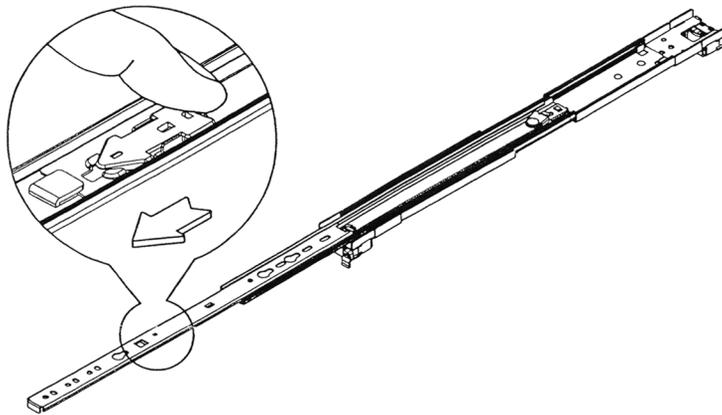
### To separate the slide rails:

1. Slide the slide rail completely open.
2. Press the spring clip on the inner slide rail as shown in the illustration.



*The blowup of the spring clip shown in the illustration is on the bottom side of the slide rail.*

### Separating the Slide Rails



3. Pull and separate the two halves.
4. Repeat these steps to separate the second slide rail.

## Attaching Inner Slide Rails to the Avid AirSpeed 5000

Attach the inner slide rails that were separated from the outer slide rails to the Avid AirSpeed 5000.

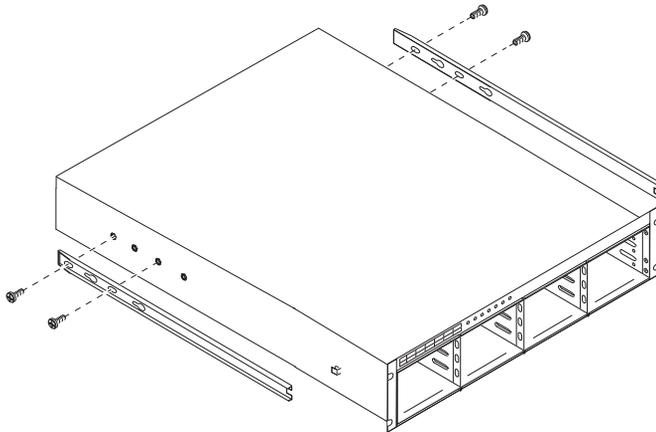
### To attach the inner slide rails:

1. Position the inner slide rail against the side of the server so that the screw holes are toward the rear of the server, and front of the slide rail fits over the tab at the front of the server.
2. Secure the inner slide rail to the server with two of the small screws.



*You might find more screws in the rail kit than is needed, and described in this procedure.*

### Attaching the Inner Slide Rails



3. Repeat this procedure to attach the other inner slide rail on the other side of the server.

## Attaching the Outer Rails to a Square-Hole Rack

After separating the slide rails as previously described (see [“Separating the Slide Rails” on page 46](#)), perform the following procedure. If your mounting rails have round holes, see [“Attaching the Outer Rails to a Round-Hole Rack” on page 49](#).

### To attach the outer slide rails to the rack with square holes:

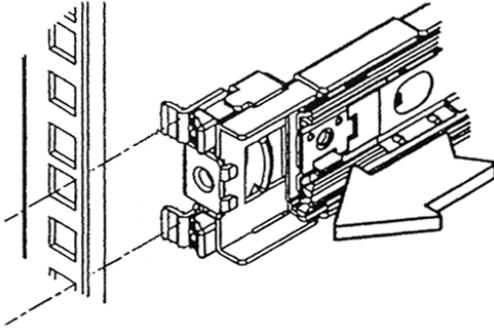
1. Align the outer slide rail bracket assembly with the front rack-mounting holes.



*You should have someone helping you hold the slide rails level while you are positioning them in the rack.*

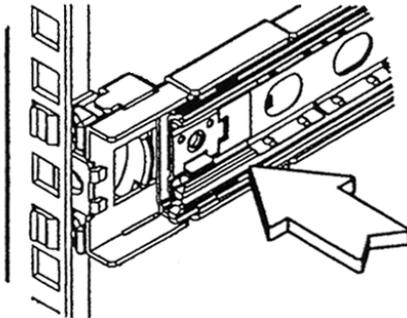
2. Slide the square tabs through the holes in the front, vertical rack-mounting rail.

**Positioning the Outer Slide Rail with the Front Rack-Mounting Rail**



3. Push the outer rail towards the outside of the rack, to secure the outer rail in place

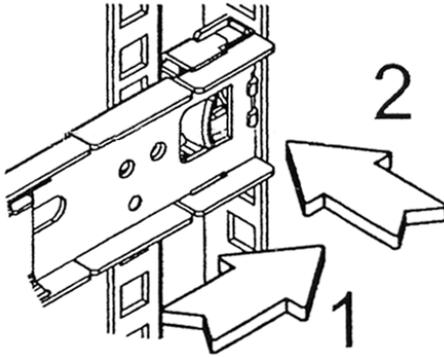
**Insert the Outer Slide Rail to the Front Rack-Mounting Rail**



4. Adjust the outer slide rail bracket assembly to the rear mounting rail.

5. Secure the rear outer slide rail bracket assembly to the rear mounting rail as you did for the front rack-mounting rail.

### Securing the Outer Slide Rail to the Rear Rack-Mounting Rail



6. Repeat this procedure to attach the second outer slide rail on the other side of the rack.

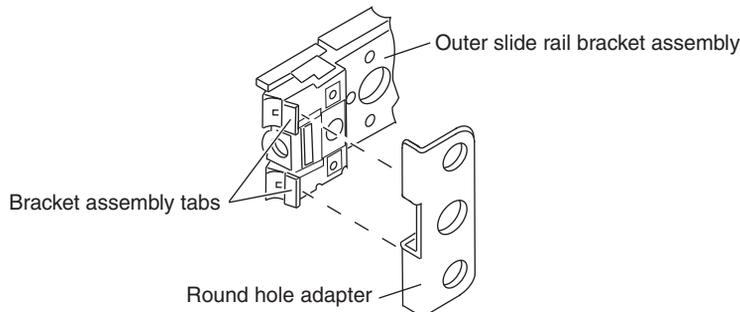
### Attaching the Outer Rails to a Round-Hole Rack

After separating the slide rails as previously described (see [“Separating the Slide Rails” on page 46](#)), perform the following procedure. If your mounting rails have round holes, you first need to clip on the round hole adapter.

#### To attach the outer slide rails to the rack with round holes:

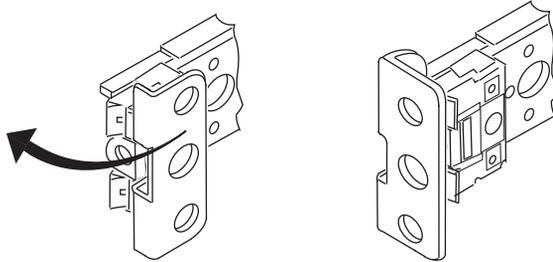
1. Locate the four round hole adapters (which ship in the accessory kit's plastic bag, not in the rack mount kit box) and position the adapter on the end of the outer slide rail bracket assembly as shown in the following illustration.

#### Attaching the Round Hole Adapter to the Bracket Assembly



2. With the bracket assembly tabs aligning with the cut-out in the round hole adapter, swing the adapter so that the holes face the front of the bracket assembly as shown in the following illustration.

### Positioning the Round Hole Adapter

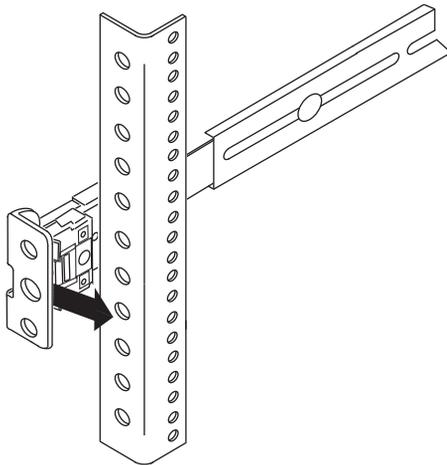


3. Slide the outer slide rail bracket assembly onto the side rack-mounting rail so that the round hole adapter is over the rack rail.



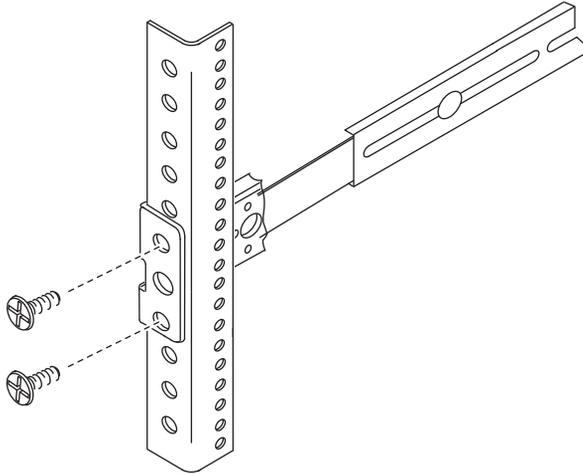
*You should have someone helping you hold the slide rails level while you are positioning them in the rack.*

### Insert the Outer Slide Rail to the Front Rack-Mounting Rail



4. Insert the small (10-32) Phillips-head screws through the round-hole adapter and mounting rail, into the bracket. If the rack holes are different size, you need to supply your own screws

### Securing the Outer Slide Rail to the Rack-Mounting Rail



5. Adjust the outer slide rail bracket assembly to the rear mounting rail.
6. Secure the rear outer slide rail bracket assembly to the rear mounting rail as you did for the front rack-mounting rail.
7. Repeat this procedure to attach the second outer slide rail on the other side of the rack.

### Securing the Avid AirSpeed 5000 in a Rack



**You should have someone helping you lift the Avid AirSpeed 5000 while you are positioning it into the slide rails.**

#### **To secure the Avid AirSpeed 5000 Server to the rack enclosure:**

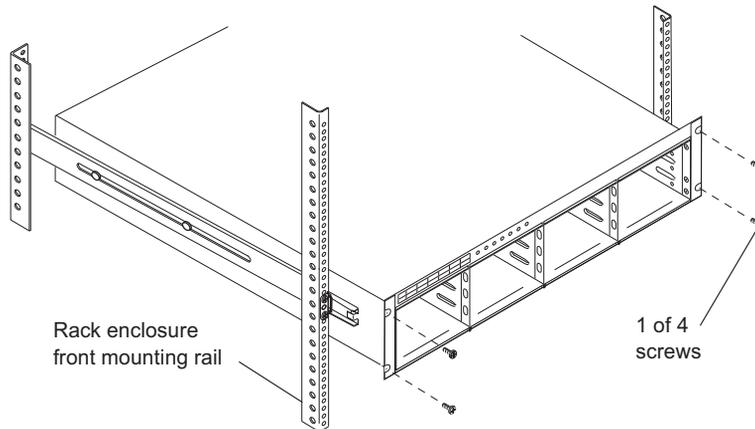
1. Lift and position the Avid AirSpeed 5000 server so that the inner slide rails (secured to the Avid AirSpeed 5000 server) are align with the outer slide rails secured to the rack.
2. Push the front of the Avid AirSpeed 5000 flush against the front mounting rail. The holes in the Avid AirSpeed 5000 server front panel align with the holes in the front mounting rail.

3. From the front of the rack enclosure, insert the large screws through the Avid AirSpeed 5000 and front mounting rail, and tighten.



*You can use your own rack hardware if your rack has square holes or unique fasteners.*

### Front Panel Screws



## (Option) Installing the Multi I/O Expansion Panel in a Rack

This topic contains information on how to install the Multi I/O Expansion Panel in a rack. Depending on your signal needs for your site, you must decide whether to use the Multi I/O Expansion Panel.

The included Multi I/O Expansion Panel (7070-30353-00) is required if you plan to use any of the following functionality:

- GPIO
- LTC Output
- More than 1 LTC Input



*Make sure you have at least 1RU of rack space available prior to installing.*

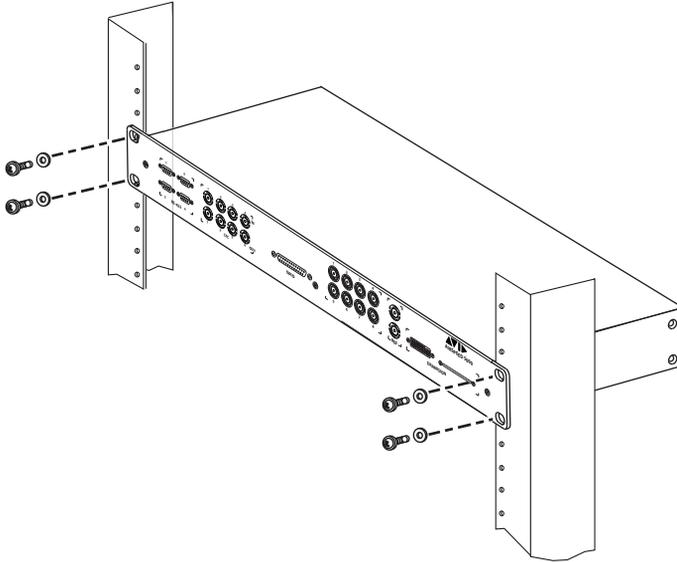
### To install the Multi I/O Expansion Panel to the rack enclosure:

1. Lift and position the Multi I/O Expansion Panel so that the rack-mount brackets on the Panel are aligned with the rear outer rack rails.
2. Position the front of the switch flush against the rear mounting rails so that the holes in the bracket align with the holes in the rear mounting rails.

3. From the rear of the rack enclosure, secure the Panel to the rack with the large screws included with the Panel.



*You can use your own rack hardware if your rack has square holes or unique fasteners.*



## Installing the Avid AirSpeed 5000 Drives

This topic contains information on inserting drives in the AirSpeed 5000 server.

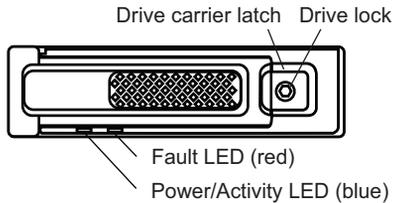


*The drives that were shipped with this server are pre-configured for use with this server only. Therefore, when installing the drives, make sure to use these drives only.*

### **To install a drive in the Avid AirSpeed 5000:**

1. Locate the data drives that came with your Avid AirSpeed 5000.
2. Select one drive.
3. Push the drive carrier latch in to release the handle and pull the handle completely open to insert the drive carrier.

4. Make sure the drive LEDs are on the bottom *before* you begin to slide the drive into the server.



*When you are installing drives in the Avid AirSpeed 5000, begin the installation at the bottom of a column of drives. Make sure the first drive you install is level and flat as you insert it into the server.*



**Do not force a drive into a slot. If you are having problems installing a drive, check to make sure it is level and flat as you insert it into the server, that the drive carrier latch is open and at a 45 degree angle to the drive carrier, and that the LEDs are on the bottom of the drive carrier.**

5. Slide the drive into the open drive slot in the Avid AirSpeed 5000 server until it stops. Approximately 1/2 inch of the drive carrier should be outside the server.
6. Push the handle into the drive carrier. This seats the drive in the Avid AirSpeed 5000. You'll hear a click when the drive is fully seated and the handle latches in place.
7. Repeat steps 2 to 6 for the remaining drives.

# Cabling Up the AirSpeed 5000 Server

Once the AirSpeed 5000 server is securely installed in the rack, and the drives are installed, you are now ready to connect the appropriate cables to the rear panel of the AirSpeed 5000 server to the external devices for your particular site. This section contains the cabling diagrams and instructions for your AirSpeed 5000 server.



**Do not connect the AirSpeed 5000 server to your Avid ISIS environment until you have assigned it a new unique IP address.**

The following sections describe the cabling and connection information for the AirSpeed 5000 server:

- [AirSpeed 5000 Server Connection Information](#)
- [Multi I/O Expansion Panel Connection Information](#)
- [Connecting SDI Video Inputs and Outputs](#)
- [Connecting Video Reference](#)
- [Connecting LTC](#)
- [Converting BNC Connectors to XLR](#)
- [Connecting Ethernet](#)
- [Connecting Serial](#)
- [Connecting a GPIO Device](#)
- [Connecting a Keyboard, Monitor, and Mouse](#)
- [Connecting the Power Cords](#)
- [Turning On the Avid AirSpeed 5000 Server](#)

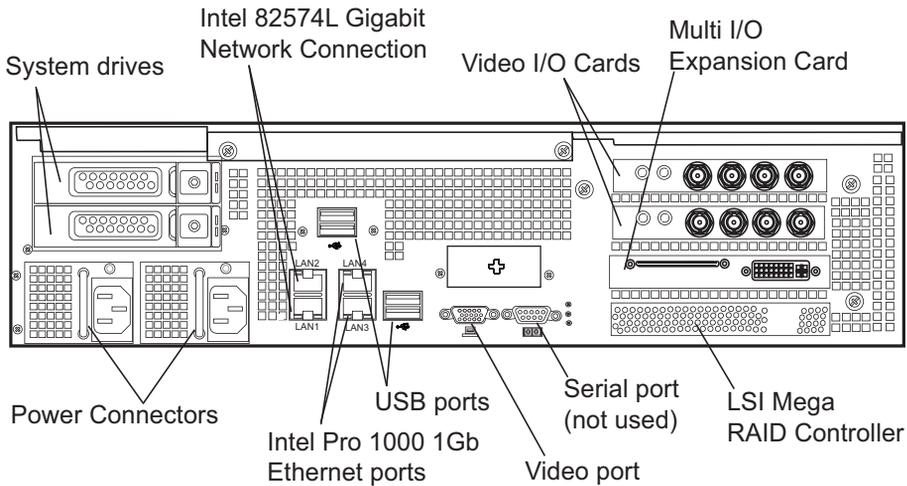
## AirSpeed 5000 Server Connection Information

The rear panel Avid AirSpeed 5000 server provides access to the power supplies, system drives, video (VGA) port, 1 gigabit (Gb) Ethernet ports, and six USB ports for the keyboard, mouse, and so on. The Serial port is not used.



*The following illustration shows the rear panel of the AirSpeed 5000 4-channel model server. Two channel model servers do not contain the bottom Video I/O card.*

### Avid AirSpeed 5000 Server - Rear Panel

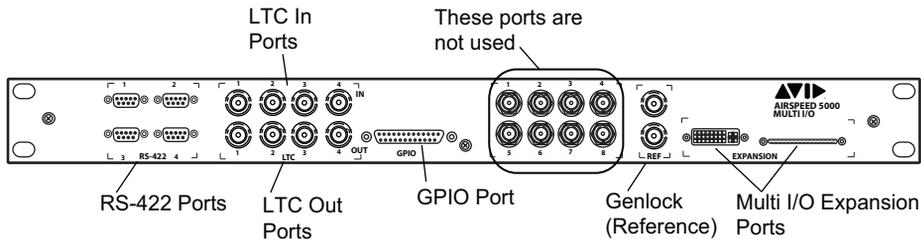


## Multi I/O Expansion Panel Connection Information

The included Multi I/O Expansion Panel is required if you plan to use any of the following functionality:

- GPIO
- LTC Output
- More than 1 LTC Input

### Multi I/O Expansion Panel - Rear View



For more information, see [“Connecting to the Multi I/O Expansion Ports on the Server”](#) on [page 57](#).

## Connecting to the Multi I/O Expansion Ports on the Server

Make sure there is adequate space to run and connect the Multi I/O Expansion cables to the rear of the unit. Since, there is no power connection on the Multi I/O Expansion Panel, simply connect it to the AirSpeed 5000 server chassis using the two Multi I/O Expansion cables that were supplied with your server.

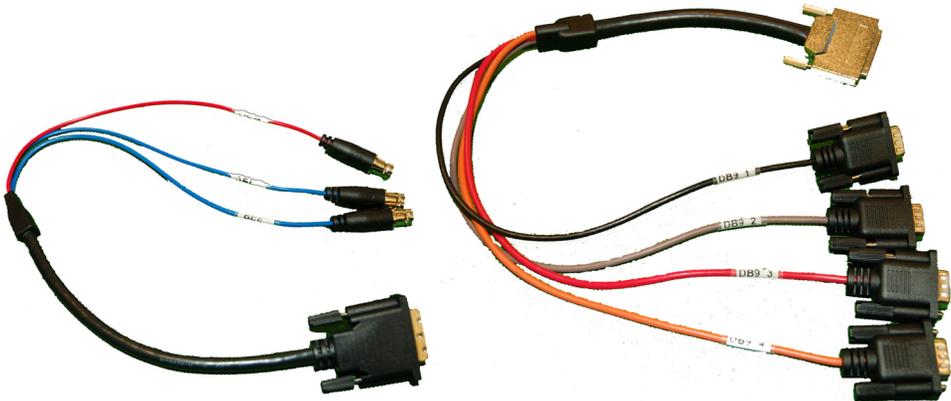
### Do one of the following:

- ▶ If your site requires GPIO, and/or multiple LTC INs and OUTs, use the Multi I/O Expansion SCSI cable (7070-30405-00) and the Multi I/O Expansion DVI cable (7070-30406-00), as shown in the following illustration to connect the Multi I/O Expansion panel to the AirSpeed 5000 server:



*Once you have connected to the Multi I/O Expansion Panel, you connect your GPIO, LTC and Serial sources directly to it.*

- ▶ If your site does not require GPIO, or additional LTC capabilities, you can use the Reference and LTC breakout cable (7070-30344-00), and the Serial Breakout cable (7070-30394-00), as shown in the following illustration, to connect to the Multi I/O Expansion Ports on the rear of the AirSpeed 5000 server:



## Connecting SDI Video Inputs and Outputs

The SDI Video connections are marked on the rear of the AirSpeed 5000 server. The following procedures describe which connector to use to connect SDI Video Input, SDI Video Outputs, and Auxiliary Monitor Outputs.

For more specific information, see the following topics:

- “Connecting SDI Video Inputs” on page 59
- “Connecting SDI Video Outputs” on page 60p
- “Connecting Auxiliary Monitor Outputs” on page 61

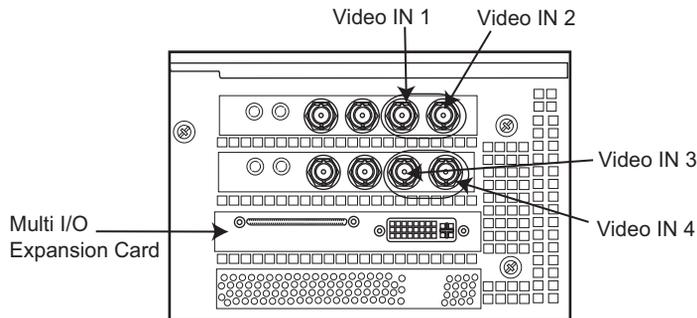
### Connecting SDI Video Inputs

The four SDI Video Input connections are marked on the rear of the AirSpeed 5000 server.



*AirSpeed 5000 2-channel model servers only contain one Video I/O card. Therefore, the Video IN 3 and Video IN 4 connections are not available.*

The following illustration shows the location of the SDI IN video connectors on the rear of the AirSpeed 5000 server.



#### To connect SDI video input cables:

1. Ensure that you have the proper SDI video (75 ohm-rated) interface coaxial cables available.
2. Connect the SDI input signal to an incoming SDI input (one of the four labelled Video IN 1-4 in the diagram) on the AirSpeed 5000 server.



*AirSpeed 5000 2-channel model servers only contain one Video I/O card. Therefore, the Video IN 3 and Video IN 4 connections are not available.*

3. Connect the other end of all SDI input cables to your devices that are sending the input signal to the AirSpeed 5000 server.

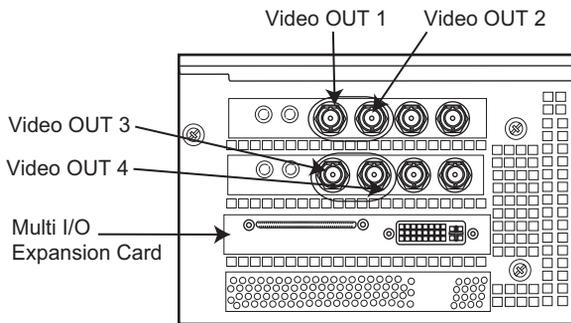
## Connecting SDI Video Outputs

Each Video I/O card contains two Video Inputs, two Video Outputs, and two Auxiliary outputs. The four SDI Video Output connections (two on each Video I/O Card) are marked on the rear of the AirSpeed 5000 server.



*AirSpeed 5000 2-channel model servers only contain one Video I/O card. Therefore, the Video OUT 3 and Video OUT 4 connections are not available.*

The following illustration shows the location of the SDI OUT video connectors on the rear of the AirSpeed 5000 chassis.



### To connect SDI video output cables on the chassis:

1. Ensure that you have the proper SDI video (75 ohm-rated) interface coaxial cables available.
2. Connect the SDI output signal to an outgoing SDI output (one of the four labelled Video OUT1-4 in the diagram) for AirSpeed 5000 server.



*AirSpeed 5000 2-channel model servers only contain one Video I/O card. Therefore, the Video OUT 3 and Video OUT 4 connections are not available.*

3. Connect the other end of all SDI output cables to your devices that are receiving the output signal from the AirSpeed 5000 server.

## Connecting Auxiliary Monitor Outputs

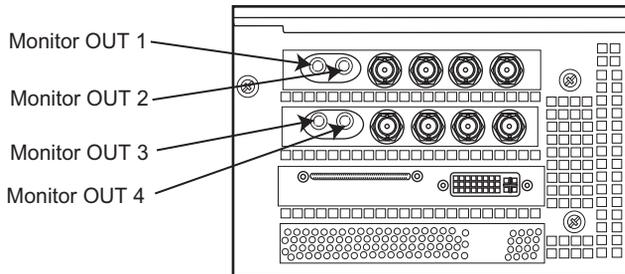
The four Auxiliary Monitor Output connections are marked on the rear of the AirSpeed 5000 server. They are used to connect an auxiliary device, such as a monitor.

 *AirSpeed 5000 2-channel model servers only contain one Video I/O card. Therefore, the Monitor OUT 3 and Monitor OUT 4 connections are not available.*

Four (4) 1.0/2.3 to BNC adapter cables (7070-30387-00) are provided for connecting Monitor outputs.

 *You must use these cables.*

The following illustration shows the location of the Auxiliary Monitor Output connectors on the rear of the AirSpeed 5000 chassis.



### To connect Auxiliary (1.0/2.3) to BNC cables:

1. Connect one end of the Auxiliary (1.0/2.3) to BNC adapter to one of the Monitor Outputs (labelled Monitor OUT 1-4 in the diagram) on the rear of the AirSpeed 5000 server.

 *AirSpeed 5000 2-channel model servers only contain one Video I/O card. Therefore, the Monitor OUT 3 and Monitor OUT 4 connections are not available.*



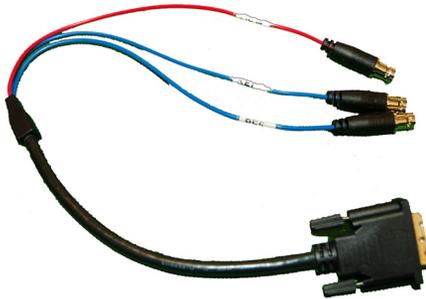
2. Connect the other end of the Auxiliary (1.0/2.3) to BNC adapter cables to an auxiliary output device, such as an output monitor for the channel that you want to receive the output signal from the AirSpeed 5000 server.

## Connecting Video Reference

This topic contains information on how to connect Video Reference to the rear of the AirSpeed 5000 server. Depending on your site's needs, there are two methods to connect video reference to your server.

### To connect video reference to the server:

1. Connect the Reference and LTC Breakout Cable (7070-30344-00), as shown in the following illustration, to the Multi I/O Expansion card on the rear of the AirSpeed 5000 server.



2. Connect one of the REF connectors to a composite video reference source (house reference, blackburst, or tri-level) to one of the reference input connectors.
3. (Option) If the AirSpeed 5000 server is the last device in your reference loop, terminate the remaining Ref Loopthrough connector with a 75 ohm-rated terminator. If the AirSpeed 5000 server is in the middle of your reference loop, connect the remaining REF IN connector to the next device's reference input.

## Connecting LTC

This topic contains information on how to connect LTC to the AirSpeed 5000 server. Depending on your site's needs, there are two methods to connect LTC to your server.

No matter what choice you have decided on (cable or Multi I/O Expansion Panel), the LTC signal will always be the same.

### To connect LTC to the server:

- ▶ If you only have one LTC signal, do the following:
  - a. Connect directly to the server using the Reference and LTC Breakout cable (7070-30344-00).
  - b. (Option) If using LTC IN, connect the LTC IN connector to a valid LTC IN source.
- ▶ If you require multiple LTC Inputs, do the following:
  - a. Connect to the Multi I/O Expansion panel.
  - b. Connect up to four (e.g., one for each channel) LTC IN sources (e.g., analog audio source, TOD system clock, or as a video source for the time-based recordings) to the LTC IN ports on the Multi I/O Expansion Panel.



*One of these LTC IN ports could be used for a TOD source.*

- c. Connect up to four (e.g., one for each channel) LTC OUT sources to the LTC IN ports on the Multi I/O Expansion Panel.

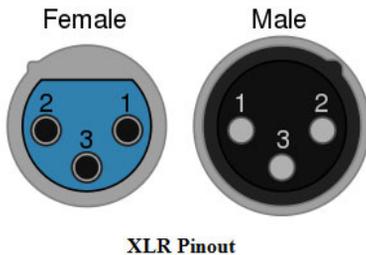
## Converting BNC Connectors to XLR

On the AirSpeed 5000 server, the LTC OUT connections require BNC. However, if you want to convert from a BNC connection to an XLR connection, you must purchase BNC to XLR adapters. Any subsequent wiring should be done as follows.

### To convert BNC to XLR:

1. Select a BNC to XLR adapter that conforms to IEC 60268-12 (formerly IEC 268-12) section 6 under the application of a “Single channel (unbalanced)” connection data.
2. Once you have obtained the correct adapter, it should be wired as follows:
  - a. Connect XLR pin 2 to the center conductor of the BNC.
  - b. Connect XLR pins 1 and 3 to the shield of the BNC.

For more information on the XLR pinouts, see the following diagram:



## Connecting Ethernet

The AirSpeed 5000 server comes equipped with four 1 Gigabit Ethernet ports. Although all four are functional, we currently support the use of two ports (GigE Ports labelled LAN3 and LAN4) in a redundant configuration for Shared storage (ISIS).

For more information on connecting the AirSpeed 5000 server as an ISIS 5000 or ISIS 7000 client in a dual port network, refer to the topic “*Dual Port Network Connections*” in the *Avid ISIS Client Guide*.

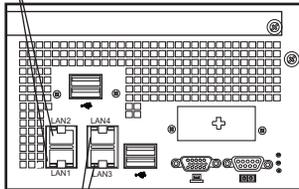
**To connect the Ethernet:**

1. Your Ethernet switch should be rack mounted. Leave adequate room at the front for cables and at the back for air circulation.
2. Locate Category 5E, 6, or 6A Ethernet cable(s).
3. For connecting to Shared storage (ISIS), only use the two right-most Ethernet cable to the ports labelled Port 3 (LAN3) or Port 4 (LAN4) on the back of the Avid AirSpeed 5000 server. The other ports can be used for other Ethernet applications.



*The two right-most ports (3 and 4) are the Intel Pro 1000 1Gb network ports and labeled LAN3, and LAN4.*

Intel 82574L Gigabit  
Network Connection



Intel Pro 1000 1Gb  
Ethernet ports  
(Used to connect to Shared Storage (ISIS))



*The two left-most ports 1 and 2, labelled LAN1 and LAN2 can be used for other purposes.*

4. Attach the other end of the Ethernet cable to any 1 Gb port on your ISIS storage network.

## Connecting Serial

The following topic describes how to connect a serial controller device (such as an automation system or edit controller) to the AirSpeed 5000 server or the Multi I/O Expansion Panel.



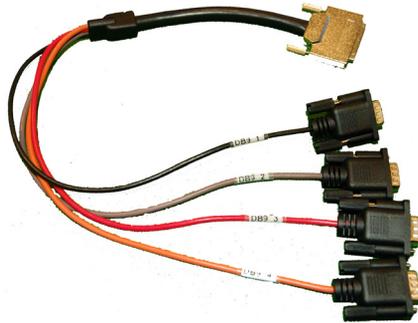
*For details on each RS-422 connector with signals, see “RS-422 Serial Remote DB9 Connector Specifications” on page 117.*

The remote ports can be used for:

- Remote control via VDCP protocol

### Do one of the following:

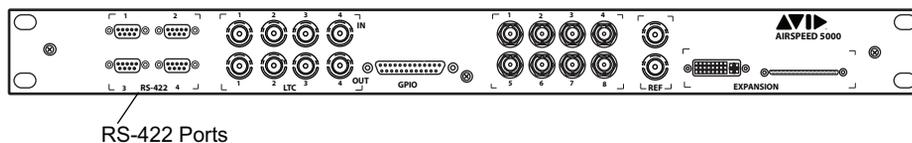
- ▶ If you are not using the Multi I/O Expansion Panel, you can connect directly to the AirSpeed 5000 server as follows:
  - a. Using the Serial Breakout (DB-9) cable (7070-30394-00) as shown in the following illustration, connect the SCSI end of the cable to the SCSI port in the Multi I/O Expansion Card on the rear of the AirSpeed 5000 server.



- b. Connect the other ends of the Serial Breakout (DB-9) cable to your RS-422 devices.
- ▶ If you are using the Multi I/O Expansion Panel, assuming it's already connected to the AirSpeed 5000 server, simply connect your RS-422 devices directly to the RS-422 ports on the Multi I/O Expansion Panel as follows:
    - a. Using a serial cable, connect it to one of the RS-422 ports, as shown in the following illustration:



*If your Automation device uses an RJ45, you need to supply an RJ45 to DB9 converter to connect to the Multi I/O Expansion Panel.*



- b. Connect the other end of the serial cables to your RS-422 devices.

## Connecting a GPIO Device

The following topic describes how to connect a GPIO device to the AirSpeed 5000 server via the Multi I/O Expansion Panel.

For more information on GPIO specifications, see [“Connector Pinouts and Connections” on page 117](#).

### To connect a GPIO device:

1. Connect your GPIO device directly to the GPIO port on the Multi I/O Expansion Panel:
2. Connect the other end of the cable to your GPIO device.

## Connecting a Keyboard, Monitor, and Mouse

You need to provide a standard USB compatible keyboard, monitor and mouse to access the Avid AirSpeed 5000. The keyboard and mouse plug directly into either of the USB ports on the rear of the chassis. Or, if you have a splitter, you can connect both to one USB connector and leave the other USB connectors open for other purposes (such as connecting a removable USB hard drive).

When installed in a rack with several servers, an optional KVM switch can also be used. The keyboard, monitor, and mouse connections use the same ports described in the following procedure. Follow the instructions supplied with your KVM switch. You need to supply KVM cables that are compatible with your KVM switch.



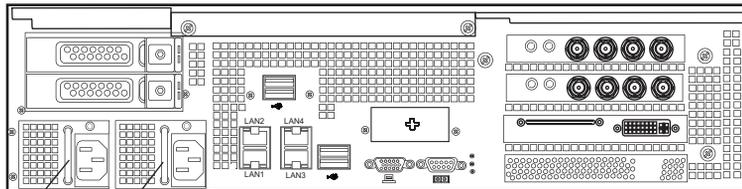
*There are four USB ports on the rear of the Avid AirSpeed 5000 server. When you purchase your KVM switch, make sure it includes a USB adapter cable so that both your keyboard and mouse can plug into the splitter cable and use a single USB port on the server.*

**To connect a keyboard, monitor, and mouse to the Avid AirSpeed 5000 server:**

1. Install your KVM switch in a suitable slot next to the Avid AirSpeed 5000 server in the rack.  
You can also place the monitor on a shelf, and the keyboard and mouse on a sliding tray in the rack. These items are optional and can be purchased locally or from Avid.
2. Attach the VGA connector on the monitor cable to the VGA port on the back of the Avid AirSpeed 5000 server. Secure the connector with the thumbscrews on the connector. For exact locations, see [“Avid AirSpeed 5000 Server - Rear Panel”](#) on page 24.
3. (Option) If you have a PS/2 style keyboard and/or mouse, you must provide a PS/2 to USB adapter cable.
4. Insert the other end of the USB adapter cable into one of the USB connectors on the back of the Avid AirSpeed 5000 server.

## Connecting the Power Cords

The last step you must perform when cabling up your AirSpeed 5000 is to connect the power cords. Two U.S. IEC power cords are shipped with the unit. If your local power distribution is not compatible with the supplied cords, you must provide your own IEC power cables that are compatible with your country's power system. The power connector accepts 100 to 240 Vac, 50/60 Hz.



Power Supply 2    Power Supply 1

**To connect power:**

1. Attach the power cords to both power receptacles on the rear of the AirSpeed 5000.
2. Connect the other end of both power cords to a properly grounded stable power source.

The system will power on after you connect the first power supply. The Monitor application will also automatically launch.

Once powered on, you must set up your system. For more information, see [“Turning On the Avid AirSpeed 5000 Server”](#) on page 69.



**For maximum power protection, Avid recommends a surge protected un-interruptible power supply (UPS).**

## Turning On the Avid AirSpeed 5000 Server

When you turn on the power to your Avid AirSpeed 5000 server, you must do it in the following order so that Avid AirSpeed 5000 will see all of its connected components.

### To turn on the power for each component:

1. Make sure to turn on the power to the KVM switch (if using one).
2. Make sure you have all your network cables connected before you load the Avid AirSpeed 5000 software.
3. Push the power button at the top left on the front of the your AirSpeed 5000 server, see [“Avid AirSpeed 5000 Server - Front Panels”](#) on page 19.
4. Wait for the Windows operating system to load *before* you attempt to use the Avid AirSpeed 5000 software.
5. Log onto the AirSpeed 5000 server.



Log on as **amsuser** and type **is-admin** as the password.

6. Your next step is to perform system diagnostics to make sure your system hardware is healthy and working properly.



For information on performing system diagnostics, see [“Performing System Diagnostics”](#) on page 69.

## Performing System Diagnostics

The AirSpeed 5000 Hardware Test is a diagnostic program that is designed to test the Avid-specific hardware components in the AirSpeed 5000. Specifically, the diagnostic program can be used to verify that the Avid hardware is working properly and it can confirm compatibility with external audio and video devices.



**Quit all applications before running the diagnostic program.**

To access the diagnostic tool, navigate to **C:\Program Files (x86)\Avid\AirSpeed\Utilities\DiagnosticUtilities**, and select **AirSpeed5000Test.exe**.

When you start the diagnostic program, it searches the system for the attached Avid hardware and the AirSpeed 5000 product. Once the diagnostic program starts, it identifies the product and displays the information at the top of the Diagnostic window.

Once the diagnostic window is open, the diagnostic program is ready to run. For information on starting the Diagnostic program, see [“Starting the Hardware Test”](#) on page 73.

This chapter includes the following topics:

- [Diagnostic Window Explained](#)
- [Reviewing Hardware Information](#)
- [Starting the Hardware Test](#)
- [Playing a Video Frame](#)
- [Capturing from an External Video Source](#)
- [Testing Audio Outputs](#)
- [Capturing from the Play Frame Video \(Loopback Mode\)](#)
- [Testing Disk Performance](#)
- [Error Log](#)
- [Diagnostic Test Failed](#)

## Diagnostic Window Explained

The diagnostic window is divided into four sections:

- The Information section displays revision and identification information about the Avid hardware, including Base Board Information, and VIO Board information.
- The Hardware Test allows you to select the loopback cables that are connected to your system. When one of these cables is selected for testing, the required connection information is displayed in the Required Connections area. If the test fails, the log information and error reporting displays in a separate Information Window. Red text indicates a failed component, green text indicates a passed component.
- The Video section allows you to choose your video format, Play Frame, and Capture source to test the video output or input for Play and Capture.
- The Audio section allows you to select the Audio and Frequency to test the audio outputs.
- The Disk Performance section allows you to perform additional disk performance tests as instructed by Avid Customer Support Representatives.

## Reviewing Hardware Information

The Information section of the Diagnostic window displays hardware information.

**To check the hardware information:**

1. Navigate to **C:\Program Files (x86)\Avid\Avid AirSpeed\Utilities\DiagnosticUtilities**, and select **AirSpeed5000Test.exe**.

The Avid AirSpeed 5000 Hardware Test dialog box opens. The version shown in the title bar following screen example is [00.32]. You might have a later version, and therefore, your values might be different.



*As AirSpeed 5000 2-channel model servers only contain a single Video I/O card (Card 1), they would not display information for Card 2.*

**AirSpeed@ 5000 Hardware Test [00.32]**

**Information**

1  P  F  
 2    
 3

**Hardware Tests**

**Video**

**Audio**

**Multi I/O Expansion Card**

Serial Number: BBDKJ13900647  
 Part Number: 7030-30343-03 [02]  
 FPGA-N Revision: 00.19  
 CPLD-N Revision: 00.09

**Video I/O Card**

	Card 1	Card 2
Serial Number	BBDJK13900746	BBDJK13900737
Part Number	7030-30055-03 [03]	7030-30055-03 [03]
FPGA-C Revision	00.22	00.22
CPLD-N Revision	00.09	00.09
Codec Slot 1	MPEG-2 [72AF2]	MPEG-2 [72AF2]
Codec Slot 2	MPEG-2 [72AF2]	MPEG-2 [72AF2]

2. Click the Information icon.

A text editor opens and displays the information as follows:

Multi I/O Expansion Card

- Serial Number
- Part Number
- FPGA\_N Revision
- CPLD\_N Revision

Video I/O Card (for Slot 1 and Slot 2)

- Serial Number
- Part Number
- FPGA\_C Revision
- CPLD\_N Revision
- CPLD\_P Revision
- Codec Slot 1
- Codec Slot 2

This information is saved in text format as a .log file. You can open the saved file with any text editing application and print it. See [Error Log](#) for more information about the .log file.

## Starting the Hardware Test

The core test verifies the baseboard and VIO board information. If you want, you can run additional tests by connecting loopback cables to their respective input signals.

### To begin testing:

1. Click the **Hardware Tests** icon.

The Hardware Tests section opens.



2. (Optional) To run additional tests, connect all the required external cables.
3. (Optional) Select the cables you connected and the additional tests you want to run from the “Select loopback cables installed” list.

After you select the external cable installed, the required connections section displays information about where to connect the cable. Verify that you have connected the cable to the correct connections.

4. Click **Start**.

The test runs. Information about the test and a status bar appear.

After the test sequence is finished, a Passed or Failed display appears in red or green. Green indicates the test sequence has passed. Red indicates the test has failed.

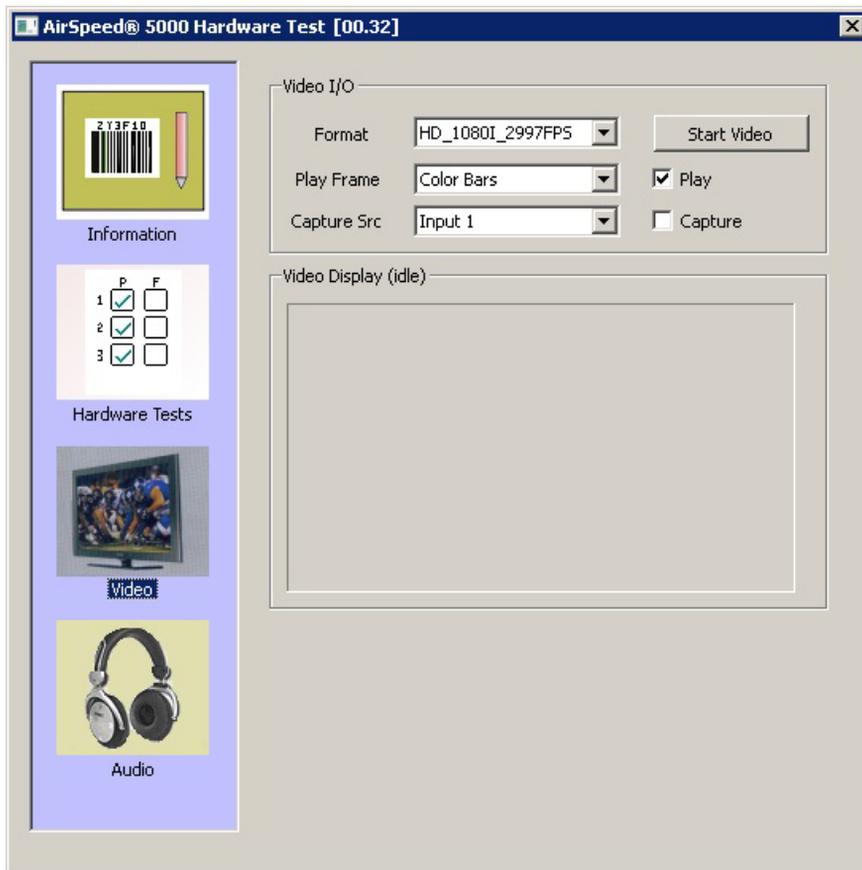
## Playing a Video Frame

Playing a video frame allows you to test the video signal and configures the hardware to play a video image from the 8 outputs. The video image appears in the Video display.

### To play a video image:

1. Click the **Video** icon.

The Video section opens.



2. Click **Play**, and deselect Capture if it is selected.
3. In the Format field, select the video format that you want to test.

4. Select the Play Frame. Options are:

- ▶ Color Bars
- ▶ Sweep Pattern
- ▶ Test Image

5. Click **Start Video**.

The video appears in the Video Display window, and appears in all other video outputs.

6. To stop play at any time, click **Stop Video**.

## Capturing from an External Video Source

You can test capture and display video from a selected source.

### To capture video:

1. Click the **Video** icon.

The Video section opens, and the video image appears in the Video display.

2. Click **Capture**, and deselect **Play** if it is selected.

3. In the **Format** field, select the video format that you want to test.

4. Select a capture source from the **Capture Src** list.

5. Click **Start Video**.

The video appears in the Video Display window.

6. To stop play at any time, click **Stop Video**.

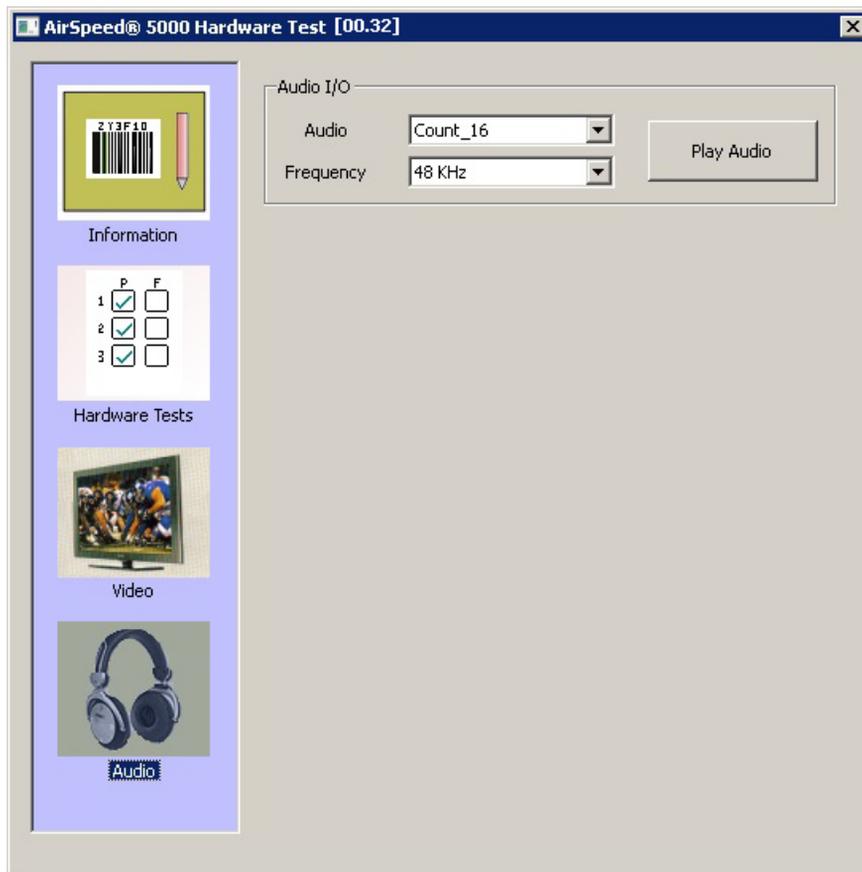
## Testing Audio Outputs

Audio testing allows you to configure the hardware to play audio tones from all of the audio output ports.

### To play audio:

1. Click the **Audio** icon.

The Audio section opens.



2. Select the Audio tone:
  - ▶ Count\_16
  - ▶ Lo\_1kHz
  - ▶ Hi\_1kHz
3. Select the Frequency (48kHz).

4. Click **Play Audio**.

The audio tone plays. You will hear the spoken number of the audio channel.

5. To stop audio at any time, click **Stop Audio**.

The video appears in the Video Display window, and appears in all other video outputs.

## Capturing from the Play Frame Video (Loopback Mode)

If you connect the video source input to the matching video play output with a loopback cable, you can capture the frame and display it in the Video Display window.

### To capture video:

1. Click the **Video** icon.
2. Click **Play**, and then click **Capture**.
3. Connect the loopback cable.
4. Select a video format:
  - ▶ HD\_1080I\_2997FPS
  - ▶ HD\_1080I\_25FPS
  - ▶ HD\_720P\_5994FPS
  - ▶ HD\_720P\_50FPS
  - ▶ SD\_NTSC\_486
  - ▶ SD\_PAL\_576
5. Select a capture source from the Capture Src list.
6. Click **Start Video**.

The video appears in the Video Display window.

The frame that is captured from the selected source connected to the output appears in the Video display window.

7. To stop play at anytime, Click **Stop Video**.

## Testing Disk Performance

Disk performance testing is designed to help Avid Customer Support Representatives investigate potential disk performance errors and issues. Depending on the nature of your failure, you might be asked to run these tests to provide information about specific problems.

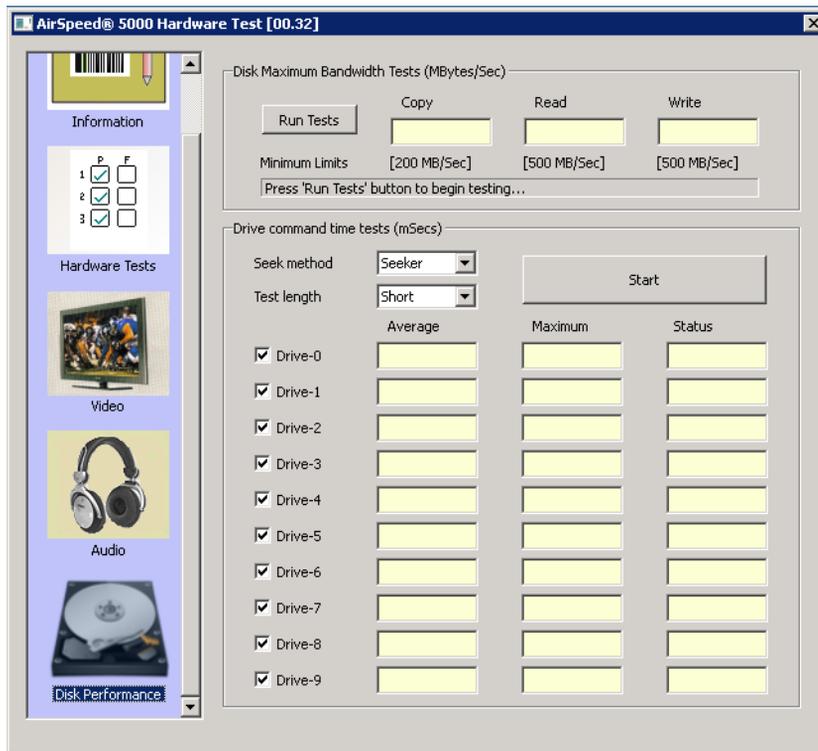


*Basic tests are already included in the Hardware Tests tab.*

### To test disk performance:

1. Click the **Disk Performance** icon.

The Disk Performance section opens.



2. Type information in the fields as specified by Avid Customer Support Representatives only.

## Error Log

If an error is detected during a test, information about the error is recorded to the log file. The board information along with the log file is saved in a .txt file inside the folder DIAG\_LOG\_FILES. The name of the log file is AED\_LOG\_YBBKxxxxxx.TXT (where YBBKxxxxxx is the board serial number). The log records the results each time the diagnostics are performed. To start a clean log file, rename, delete or move the current .txt file.

The log file displays the following:

- The name of the test
- If it passed or failed
- If it failed and why it failed
- The time and date that it failed

### To view the error log:

- ▶ Browse to the .txt file and double-click the file icon. A text editor will open and display the information. Print this file from the application if you want a hard copy.

## Diagnostic Test Failed

If a test fails, check the following and run the diagnostics again before contacting your Avid representative.

### Do the following to resolve the problem:

1. Check that all other applications are closed.
2. Reseat all external cables. Make sure you have connected the appropriate cable for the test you are running.
3. Quit the diagnostic application and restart it.
4. Run the diagnostics again.
5. If you still are having problems, power cycle the CPU.  
This power cycles the Avid hardware.
6. Run the diagnostics again.
7. If the failure persists, save the log file and contact your Avid representative.
8. Your next step is to install and configure your system software.



*For information on how to install and configure your system software, see “Installing the Software” on page 62.*

# 3 Configuring the AirSpeed 5000 for Your Network

This chapter describes network and Windows operating system parameters that need setting along with instructions on how to configure your AirSpeed 5000 server for your network.

Once you have cabled up your AirSpeed 5000 server, and the system is powered on, you must configure your operating system and set up your shared storage (for Interplay Production and Team modes). Once that is done, assign an IP address, and activate your Operating System.

Your Avid AirSpeed 5000 ships with the Windows 7 Embedded 64-bit operating system installed. If you need to re-image the operating system (OS) drives with the Windows operating system see “[Re-imaging Your System](#)” on page 94.



*Log on as **amsuser** and **is-admin** as the password.*



*Some USB flash devices might not appear in a Safely Remove Hardware dialog box even though they are plugged in. In addition, it might take several seconds for a USB device to be available to the system.*

This chapter contains the topic [AirSpeed 5000 Network Configuration Checklist](#).

# AirSpeed 5000 Network Configuration Checklist

The following table provides a checklist of tasks that must be performed when configuring the AirSpeed 5000 server for your network.



*The Monitor application will be minimized at the Taskbar. Before beginning any system maintenance, be sure to close the Monitor application. When closing the Monitor application, you will see a dialog box asking you to confirm that you want the AirSpeed 5000 application(s) closed. By selecting 'Yes', the AirSpeed 5000 application(s) will be closed and will not restart automatically.*

- 
- Set the date, time, and time zone, as described in the topic [“Setting the Date, Time, and Time Zone” on page 82.](#)
  - Specify the computer name, as described in the topic [“Specifying a Computer Name” on page 82.](#)
  - Verify your network connection (IP address), as described in the topic [“Assigning an IP Address” on page 83.](#)
  - Activate your Windows operating system, as described in the topic [“Activating Your Windows 7 Operating System” on page 83.](#)
  - (Optional) If you want to disable Ethernet ports, do so before you activate any licenses on the AirSpeed 5000 server. For more information, see the topic [“\(Optional\) Disabling Ethernet Ports” on page 85.](#)
  - (Optional) Create a Windows User account on the AirSpeed 5000 server, as described in the topic [“\(Optional\) Creating a Windows User Account on the AirSpeed 5000” on page 85.](#)
  - (Optional) Add a user as Administrator to the SQL database, as described in the topic [“\(Optional\) Adding a User as Administrator to the SQL Database” on page 87.](#)

## Setting the Date, Time, and Time Zone

You need to correctly set the date, time, time zone, and daylight saving time option on each Avid AirSpeed 5000 server.

**To set the date, time, time zone, and daylight saving time option on the Avid AirSpeed 5000:**

1. Log onto the AirSpeed 5000 server.



*Log on as **amsuser** and type **is-admin** as the password.*

2. Click the time in the taskbar.

The Date/Time Properties dialog box opens.

3. Click **Change date and time settings**.

4. In the Date and Time tab, click the **Change date and time** button.

5. Set the date and time.

6. Click **OK** to close the Date and Time Settings dialog box.

7. Click the **Change time zone** button.

8. Set the time zone for the location of the Avid AirSpeed 5000.

9. Make sure the “Automatically adjust clock for Daylight Saving Time” option is selected if your location observes daylight saving time.

10. Click **OK** to close the Time Zone Settings dialog box.

11. Click **OK** to close the Date and Time dialog box.

## Specifying a Computer Name

Your Avid AirSpeed 5000 server has been imaged at Avid with the current operating system configuration and drivers that have been qualified with the Avid AirSpeed 5000 system.

**To specify a computer name:**

1. Right-click the computer icon on the desktop, and select Properties.

The Control Panel/System dialog box opens.

2. Click **Change settings**.

3. In the Computer Name tab, click the **Change** button.

4. Type the new name of the Avid AirSpeed 5000 in the Computer name text box.

5. (Option) Depending on how the AirSpeed 5000 will be configured for your site, you need to determine if you need to select the Domain or Workgroup in the “Workgroup” section at the bottom of the dialog box and click **Change**. Contact your network administrator for assistance.
6. Click **OK**.  
After a short delay, you are prompted to restart your computer.
7. Click **OK**.
8. Close all open windows and restart the Avid AirSpeed 5000 system.

## Assigning an IP Address

Once you have the AirSpeed 5000 server connected to your network, you should verify your network connection. This involves assigning a static or dynamic IP address based on the requirements for your site. This enables you to communicate with your shared storage infrastructure (ISIS 5000 or ISIS 7000). You should be able to get this information from your site’s Administrator.

You must use LAN 3 and/or Lan 4 for ISIS communication.

For information on setting up with ISIS 5000 or ISIS 7000, see the *Avid Unity ISIS Setup Guide*.



*When mounting volumes on ISIS, make sure that you use the UNC pathway only. Do not use the lettered drive as this will affect the performance of your system.*

## Activating Your Windows 7 Operating System

Once you have assigned an IP address to your AirSpeed 5000 server, you should activate your Microsoft Windows 7 Operating System.



*When re-imaging your system, you will need to re-activate your Windows 7 Operating System.*



*There might be instances where your Operating System has already been activated.*

There are two methods available to active your Windows 7 Operating System:

- **Activate Online method.** If you have Internet access, you can activate online.
- **Activate Using the Telephone method.** If you do not have Internet access, you must activate using the “Activate using the telephone” method.



*Certain services are required to be running in order to activate Windows 7 when not using the “Activate online” method. To properly activate your Windows 7 Operating System software using the “Activate using the telephone” method, we have provided a script to enable and*

*disable the required services, which are not enabled in the AirSpeed 5000 Windows 7 Operating System Version 6 image. Be sure to run the scripts in the procedure below when activating Windows 7 using the “Activate using the telephone” method.*

**To activate your Windows 7 Operating System:**

1. Determine if you have direct access to the Internet from the AirSpeed 5000 server.
  - ▶ If you have direct access to the Internet, you can activate using the “Activate online” method. Go to Step 2.
  - ▶ If you do not have direct access to the Internet, you must activate using the “Activate using the Telephone” method as follows:
    - Navigate to **C:\Program Files\Avid\AirSpeed\Utilities**, and run the **StartActivationServices.bat** script. This will enable the correct services.
    - When complete, you can stop and disable the services using the “StopActivationServices.bat” if required.



*These services are not required for operation of the product outside of system activation. Future versions of the AirSpeed 5000 Operating System (after Version 6) will have these services enabled by default.*

2. To see the Activation Status, do one of the following:
  - ▶ Right-click on **My Computer**, and select **Properties**.
  - ▶ Open the Control Panel, select System and Security menu, then select the System Control Panel view.

At the bottom of the Properties panel, you will see the “Windows activation” status.

3. To activate your Windows 7 Operating System, select **Activate Now**. The Activation Wizard opens.

You will need the number on the *Windows Product Key Certificate of Authenticity* located on the top-right-front corner of the AirSpeed 5000 server. You should have written this number down before the server was placed in the rack.

4. Follow the prompts in the Activation Wizard to activate your Windows 7 Operating System.

## (Optional) Disabling Ethernet Ports

The AirSpeed 5000 server has 4 Ethernet ports. They should all be enabled by default. If you need to disable any Ethernet ports for any reason (security, etc.), you should disable them before installing the AirSpeed 5000 software.

If the AirSpeed 5000 server is communicating with ISIS, always make sure the two Pro 1000 Ethernet ports (LAN 3 and LAN 4) are enabled.



*Disable any undesired Ethernet ports in Windows before you activate any licenses on the server. Failure to do so, will cause licensing issues. Plugging or unplugging Ethernet ports or connecting them to different networks should have no effect.*

### To disable Ethernet ports on your AirSpeed 5000 server:

1. Right-click on **Network**, and select **Properties**.  
The Network and Sharing Center dialog box opens.
2. Click **Change adapter settings** in the left pane.  
The Network Connections dialog box opens.
3. Right-click the Ethernet port you want to disable, and select **Disable** from the menu.  
The status will change from “Network cable unplugged” to “Disabled”.
4. Close the Network Connections dialog box.

## (Optional) Creating a Windows User Account on the AirSpeed 5000

Your AirSpeed 5000 system comes with two default users. However, when configuring your shared storage, it might be good practice to create a Windows user account (with Admin rights) with an AirSpeed 5000 user name and matching password (recommended Avid1234) that is consistent with an Interplay and ISIS user name and password.

In addition, if you want to run the AirSpeed 5000 server with a user other than the default **amsuser**, the user must have Administrator privileges in the SQL database. For more information on how to create a user with these privileges, see [“\(Optional\) Adding a User as Administrator to the SQL Database” on page 87](#).



*The password does not have to be the same for all three (AirSpeed 5000, ISIS, and Interplay). It should be the same for AirSpeed 5000 and ISIS, but the Interplay user name and password can be different depending on security for your site.*



*If you have the AirSpeed 5000 application installed, but not fully configured, the Monitor application will keep popping up. You can disable the Monitor application by closing the AirSpeed 5000 Application Monitor dialog box, and then clicking OK in the Monitor dialog box to exit and shut down.*

**To create a Windows user account on the AirSpeed 5000:**

1. Right-click on the **Computer** icon on the desktop, and select **Manage** from the menu.

The Computer Management dialog box opens

2. Select **Local Users and Groups** in the left pane.
3. Double-click the **Users** folder in the right pane to open it.
4. Right-click in the right pane, and select **New User** from the menu.

The New User dialog box opens.

5. Type the user name in the User name field.
6. Type a password for this user account in the Password field.
7. Retype the password in the Confirm password field.
8. Uncheck the “User must change password at next logon” option.
9. Select the “Password never expires” option.

10. Click the **Create** button.

The new user is created and appears in the right pane of the Computer Management dialog box.

11. Right-click on the new user you just created, and select **Properties**.

The Properties dialog box for this user opens.

12. Click the **Member Of** tab, and then click the **Add** button.
13. In the “Enter the object names to select” field, type **Administrators**.
14. Click the **Check Names** button.

The full group will be added to this user.

15. Click **OK**.

This user is now also a member of the Administrators Group.

16. (Option) If you want to run the AirSpeed 5000 server with a user other than the default **amsuser**, the user must have Administrator privileges in the SQL database. For more information on how to create a user with these privileges, see [“\(Optional\) Adding a User as Administrator to the SQL Database” on page 87](#)

## (Optional) Adding a User as Administrator to the SQL Database

If you want to run the AirSpeed 5000 as a user other than the default **amsuser**, you will need to add your user as an Administrator to the SQL database.

This topic contains information on how to add a user as an administrator to the SQL database.



*Before you begin this procedure, a new user with Administrator privileges should have already been created in Windows. For more information, see “(Optional) Creating a Windows User Account on the AirSpeed 5000” on page 85.*

### To add a user as Administrator to the SQL database:

1. Log in as a user who already has the proper privileges in SQL Server (typically **amsuser**).
2. Select **Start > All Programs > Microsoft SQL Server 2008 R2 > SQL Server Management Studio**.

The Connect to Server dialog box opens.

3. On the Connect to Server dialog box, do the following:
  - a. In the Server Type field, select **Database Engine**.
  - b. In the Server Name field, select or type **(local)SQLEXPRESS**.
  - c. In the Authentication field, select **Windows Authentication**.
  - d. Click **Connect**.

The Microsoft SQL Server Management Studio windows opens.

4. Click the Plus (+) next to the Security folder to open it.
5. Right-click on **Logins**, and select **New Login**.
 

The Login - New dialog box opens.
6. On the General page (it should already be in focus), make sure that the **Windows authentication** is selected (checked).
7. In the Login name field, type the name of the new Windows user you created.



*If this user is a domain user, you will need a fully qualified name (DOMAIN\USER) You can click the **Search** button to help.*

8. Click **User Mapping**.
9. Select the checkbox next to **aspnetdb**.

A list of roles will appear on the bottom window.

10. Depending on how you want to set up this user, do one of the following:
  - ▶ If you want this user to be able to use the system, and also grant these privileges to a future user, select **db\_owner**.
  - ▶ If you want this user to be able to be able to use the system, but not grant these privileges to a future user, select **aspnet Membership FullAccess**.
11. In the top window, select the checkbox next to Settings.

A new list of roles will appear on the bottom.
12. Select **db\_owner**.
13. Click **OK**.
14. Exit SQL Server Management Studio.

## 4 Installing Your Shared Storage and Device Service

This chapter contains some optional tasks you must perform based on how you are using the AirSpeed 5000 server for your site.

Topics in this chapter include:

- [Determining Your AirSpeed 5000 Environment](#)
- [Shared Storage and Device Service Checklist](#)
- [\(Option\) Installing the AirSpeed Multi Stream Device Service](#)

### Determining Your AirSpeed 5000 Environment

The Avid AirSpeed 5000 server can be configured in one of three ways:

- In a **Standalone** Video Server environment, the AirSpeed 5000 uses only its own internal storage for storing clips. Clips can be transferred directly between the Avid Editor (Media Composer or NewsCutter) and the AirSpeed 5000.
- In a **Team** environment, AirSpeed 5000 uses shared storage (no Interplay). Clips are transferred directly between the AirSpeed 5000 and the shared storage.
- In an **Interplay Production** environment, the AirSpeed 5000 operates as a member of an integrated Interplay workgroup and ISIS Shared storage environment. Clips are transferred directly between the AirSpeed 5000 and the shared storage.

While you must configure the Avid Service Framework for your environment, Procedures on how to configure your system for any of these environments, as well as how to perform other administrator tasks is contained in the *AirSpeed 5000 Management Console*, and more detail is provided in the accompanying Online Help.

# Shared Storage and Device Service Checklist

The following table provides a checklist of tasks that must be performed when configuring the AirSpeed 5000 server's shared storage, and Device Service, if you're site uses Avid iNEWS Command to control AirSpeed 5000 channels.

- 
- (For Interplay Production, and Team modes only) Configure your shared storage, as described in the topic [“Configuring Your Shared Storage \(Interplay Production and Team Modes Only\)”](#) on page 90.
  - (Option) If using iNEWS Command, Interplay Capture, or Capture Manager to control AirSpeed 5000 channels, you must install and configure the AirSpeed Multi Stream Device Service, as described in the topic [“\(Option\) Installing the AirSpeed Multi Stream Device Service”](#) on page 91.

## Configuring Your Shared Storage (Interplay Production and Team Modes Only)

If you will be using AirSpeed 5000 with Shared storage (with or without Interplay), you must configure your shared storage for ISIS 5000 or ISIS 7000.



*If you are using a Standalone Transfer Manager, you do not have to perform this procedure.*

### To configure your shared storage:

1. Install the Avid ISIS client software on the AirSpeed 5000 server.
2. It is recommended that you mount the volume that you intend to capture to using UNC based mounting, via the ISIS client.



*Some DNxHD resolutions with a higher count of audio channels and proxy enabled require two connections to ISIS 5000 or ISIS 7000. In addition, the ISIS client must be set at “High Resolution” to sustain the performance needed to handle four channels of simultaneous capture.*

For more information on how to configure your shared storage, see the *Avid Unity ISIS Setup Guide*.

## (Option) Installing the AirSpeed Multi Stream Device Service

If your site uses Avid iNEWS Command, Interplay Capture, or Capture Manager to control AirSpeed 5000 channels for capture or playout, you need to install the AirSpeed Multi Stream Device Service on the AirSpeed 5000 server.

The AirSpeed Multi Stream Device Service (located on the Command CD) needs to be installed on the AirSpeed 5000 server that is being controlled by either Command, Interplay Capture, or Capture Manager.

### To install AirSpeed Multi Stream Device Service:

1. Locate your Avid iNEWS Command CD, or navigate to somewhere on your network where it is located.
2. Navigate to the Avid\_Framework\_Workstation folder in the installation location for your site.
3. Double-click the **AvidAirSpeedMultiStreamDeviceService.exe** to launch the installer.

A splash screen appears, followed by a Welcome dialog box.

4. Click **Next**.

The License Agreement dialog box opens.

5. Read the License Agreement, accept the terms, and click **Next**.
6. Click **Install** to install the AirSpeed Multi Stream Device Service.
7. Determine if you need to install (or re-install) a new version AirSpeed 5000 server software on your system. For new systems, the AirSpeed 5000 server software is pre-installed on your server.

- ▶ If you have re-imaged your AirSpeed 5000 server, or need to update your AirSpeed 5000 server software version to a newer version, you need to install the latest AirSpeed 5000 application software version. For more information, see [“Installing the Software” on page 62](#).
- ▶ If your AirSpeed 5000 server already contains the latest software version (this is the case for new systems), you now must configure Avid Service Framework for your environment. For more information, see the topic “Configuration Requirements” in the *AirSpeed 5000 Administrator’s Guide*.

Once, that is done, you can use the Management Console to configure the AirSpeed 5000 for Record and Playback. For more information, see the *AirSpeed 5000 Administrator’s Guide*.

# 5 Maintaining and Troubleshooting Your AirSpeed 5000

This chapter contains information on how to perform preventative maintenance on your AirSpeed 5000 system, as well as how to troubleshoot your server when problems or failures occur.

For more information see the following sections:

- [Preventative Maintenance](#)
- [Accessing the Knowledge Base](#)

## Preventative Maintenance

This section contains information on some preventative maintenance tasks to help keep your system healthy.

The following topics are included:

- [Setting Up Remote Access to the AirSpeed 5000 Server](#)
- [Re-imaging Your System](#)



*The Monitor application will be minimized at the Taskbar. Before beginning any system maintenance, be sure to close the Monitor application. When closing the Monitor application, you will see a dialog box asking you to confirm that you want the AirSpeed 5000 application(s) closed. By selecting 'Yes', the AirSpeed 5000 application(s) will be closed and will not restart automatically. For more information, see “Monitor Application” on page 104.*

## Setting Up Remote Access to the AirSpeed 5000 Server

AirSpeed 5000 supports Microsoft Remote Desktop Protocol to enable remote access to the system. There are many RDP clients available, including the Microsoft Remote Desktop Connection software that ships with Windows XP or later. When configuring your remote access client, there are a few details to consider to ensure reliable operation of the system.

AirSpeed 5000 does not support multiple-session RDP or Fast User Switching. Using these methods might create problems with desktop display, ISIS, or other Avid application behaviors, and general system reliability.

Some best practices for configuring and using Remote Desktop include the following:

- Configure your RDP client session to match the desktop resolution configured on the AirSpeed 5000. The default desktop is configured for a video display of 1280x1024 with 32-bit color.
- Disable remote audio and local printer resources in your RDP client.
- Always login to the server with the user configured to operate the AirSpeed 5000. By default, this user is **amsuser**.
- Logging into the system via Remote Desktop can occasionally affect record or playout, including repeating frames while the desktop session is created. Therefore, it is recommended to not remotely access the system when it is active or online. Tools such as Remote Console and the Management Console are provided for controlling the application externally.
- Limit the use of remote access.

VNC is not currently supported on AirSpeed 5000 and is disabled on the server. Some VNC server products have been found to negatively impact performance of the system, including serious failure of records, playout, and general operation of the AirSpeed 5000 application.

### **To set up remote access to the AirSpeed 5000 server:**

1. Select the third party remote access tool of your choice.
2. Set up remote access to the AirSpeed 5000 server. For more information, see the documentation for your remote access tool (e.g., Remote Desktop).

## Re-imaging Your System

This topic provides information on how to use the USB Flash Drive (UFD) provided to install a factory operating system (OS) image in the event of a catastrophic failure, or as directed by Avid Customer Support. After performing this procedure, the system will have a factory OS. You will need to install the AirSpeed 5000 application, and reconfigure the software settings.

### Checklist for Re-imaging Your System

The following table provides a checklist of tasks that must be performed when re-imaging your AirSpeed 5000 system. Some of the tasks are contained in this chapter, while others are contained in other chapters of this guide, or the *AirSpeed 5000 Administrator's Guide*, and *Management Console Online Help*.



*Follow this checklist and the associated procedures closely to ensure a successful re-image.*

- 
- Save your configuration settings, as described in the topic “Configurations Page” of the *AirSpeed 5000 Administrator's Guide* or the *Management Console Online Help*.
  - Deactivate all active licenses on the server, using the Activation Page of the AirSpeed 5000 Management Console, as described in the topic “Activation Page” of the *AirSpeed 5000 Administrator's Guide* or the *Management Console Online Help*.

If you have problems deactivating any active licenses, contact Customer Support.



*If any of the drives are swapped or re-imaged, the information containing the licenses is removed. Therefore, you must deactivate all active licenses before re-imaging the server.*

- Load the Windows 7 Pro Embedded Restore image, as described in the topic “Loading the Windows 7 Pro Embedded Restore Image” on page 95 of this guide.
- Set up your AirSpeed 5000 system, as described in “Configuring the AirSpeed 5000 for Your Network” on page 80.

Setting up your system involves the following:

- Adjusting the date, time and time zone
  - Changing the computer name
  - Verifying your network connection
  - Assigning an IP address
  - (Optional) Creating a Windows User account
  - (Optional) Add a user as Administrator to the SQL database
- (Option) Set up remote access to the AirSpeed 5000 server, as described in “Setting Up Remote Access to the AirSpeed 5000 Server” on page 93 of this guide.

- 
- ❑ (Required for Interplay Production and Team Modes) Configure your shared storage, as described in “[Configuring Your Shared Storage \(Interplay Production and Team Modes Only\)](#)” on page 90 of this guide.
  - ❑ (Option if using iNEWS Command, Interplay Capture, or Capture Manager to control) Install and configure the AirSpeed Multi Stream Device Service, as described in “[\(Option\) Installing the AirSpeed Multi Stream Device Service](#)” on page 91 of this guide.
  - ❑ (Option) If you want to disable any undesired Ethernet ports in Windows, you must do so before you reactivate any licenses on the server, as described in the topic “[\(Optional\) Disabling Ethernet Ports](#)” on page 85 of this guide.
- If you have problems activating any licenses, contact Customer Support.
- ❑ Install the AirSpeed 5000 Server software as described in the topic “[Installing AirSpeed 5000 Server Software](#)” on page 101.

**IMPORTANT:** When you are done installing the AirSpeed 5000 application on the Airspeed 5000 server, a dialog box opens, asking if you want to reboot your system. Do the following:

- Make sure all other applications are closed, and then click **Yes**.

If outdated, or not in sync, the BIC and HUB will automatically be updated when the AirSpeed 5000 application is launched.

- ❑ Configure your AirSpeed 5000 server for record and playback.
- For information on configuring your system, see the *AirSpeed 5000 Administrator's Guide*, or the *Management Console Online Help*.

## Loading the Windows 7 Pro Embedded Restore Image

This topic contains information on how to load the Windows 7 Pro Embedded 64-bit restore image on your AirSpeed 5000 system.



**During this procedure, you must disconnect (but do not fully remove) the media drives. This is to make sure that the correct drives (e.g., the system drives) are reimaged, and not the media drives. This also ensures that the media drive contents are protected.**

### To load the Windows 7 Pro Embedded Restore image:

1. Turn off your system.
2. Unlatch and disconnect, (it is not necessary to fully remove) the ten (10) media drives from the chassis.
3. Insert the USB Flash Drive (UFD) into one of the USB ports on the back of the AirSpeed 5000 system.

4. Restart the AirSpeed 5000 server.

You will be asked to “Press any key to continue.” This is because the drives are no longer seated. Press any key to continue. The system will begin to start up.

5. Press the **Delete** key during startup to enter the system BIOS.

The BIOS SETUP UTILITY opens.

6. Navigate to the Boot Tab, and select **Hard Disk Drives**. Then, do the following:

- a. Make sure the 1st Drive is set to UFD, and press **Enter**.
- b. Make sure the 2nd Drive is set to *RAID: Intel Volume0*.
- c. Press **ESC** to return to the Boot tab.

7. Select the Boot Device Priority menu. Then, do the following:

- ▶ Make sure the 1st Boot Device displays the UFD that you changed to on the Hard Disk Drives menu.

8. Press **F10**.

You will be asked if you want to Save configuration changes and exit setup.

9. With **Ok** selected, press **Enter** to save your configuration settings, and reboot the system.

The AvidPE Restore Menu opens. The Avid PE Restore Menu is often behind another window. So, click it to make it the active window.

10. In the Enter a choice? field, type **2** to recover both the C: and D: partitions (the entire system disk), and press **Enter**.

11. Type **Y** to confirm any changes.

The Symantec Ghost opens, and will display the progress of the image restoration. When it is finished, you will get a message in the Recovery Complete dialog box saying “Drive Image Completed Successfully.”

12. Press **S** to shutdown your system.



*If the AirSpeed 5000 does not shut off when pressing the Power button, unplug the power supply to the AirSpeed 5000. Make sure it powers down, and then plug it back in.*

13. Unplug the UFD device from the USB port.



*If any device, including the UFD, is left plugged in, the drive-lettering script could fail.*

14. Re-insert the ten media drives into the AirSpeed 5000 chassis.

15. Press the Power button again to restore power to the AirSpeed 5000.

The system will begin to startup.



*If the System Settings Change dialog box opens, it might be because of the USB device that was plugged in. Click No to close the dialog box.*

16. Press the **Delete** key during startup to enter the system BIOS again.

The BIOS SETUP UTILITY opens.

17. Navigate to the Boot Tab, and select **Hard Disk Drives**. Then, do the following:

- a. Change the 1st Drive back to *RAID: Intel Volume0*, and press **Enter**.
- b. Make sure the 2nd Drive is set to Media Drive.

Example: *(BUS 82 DEV00) PCI RAID Ad.*

- c. Press **ESC** to return to the Boot tab.

18. Select the Boot Device Priority menu, and make sure the 1st Boot Device displays the RAID drive that you changed to on the Hard Disk Drives menu.

19. Press **F10**.

You will be asked if you want to Save configuration changes and exit setup.

20. With **Ok** selected, press **Enter** to save your configuration settings, and reboot the system.

21. When the system restarts, log into Windows.

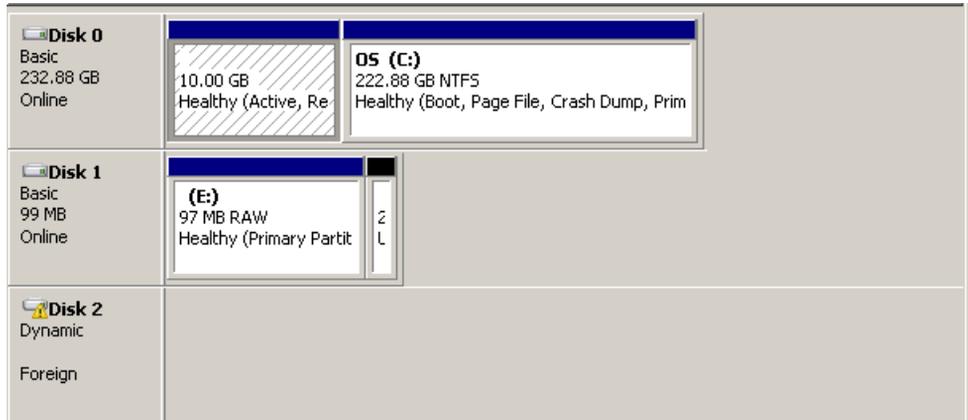
22. Right-click on My Computer, and select **Manage**.

23. In the left pane, select **Disk Management**.

Note the following:

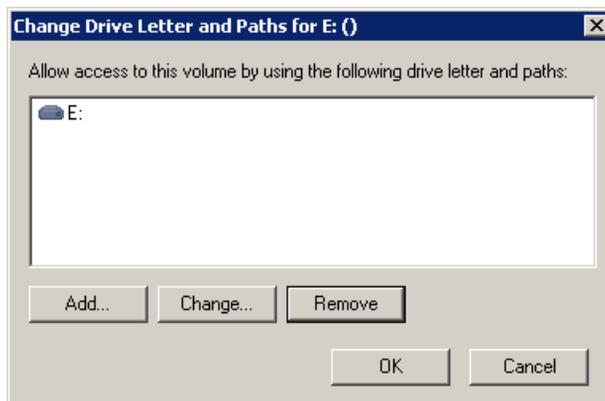
- Disk 1 appears in the right pane as the E: drive.
- Disk 2 (which includes drives 1-10 for four (4) channel model servers, and 1-5 for two (2) channel model servers) appears in the right pane as a Foreign disk.

The Disk section should look like the following:



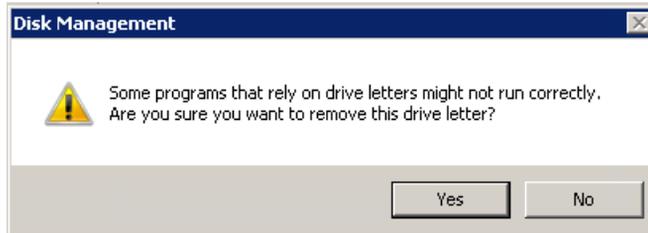
24. Right-click on the **E: drive** next to Disk 1, and select **Change Drive Letter and Paths...**

The Change Drive Letter and Paths for E: () dialog box opens.

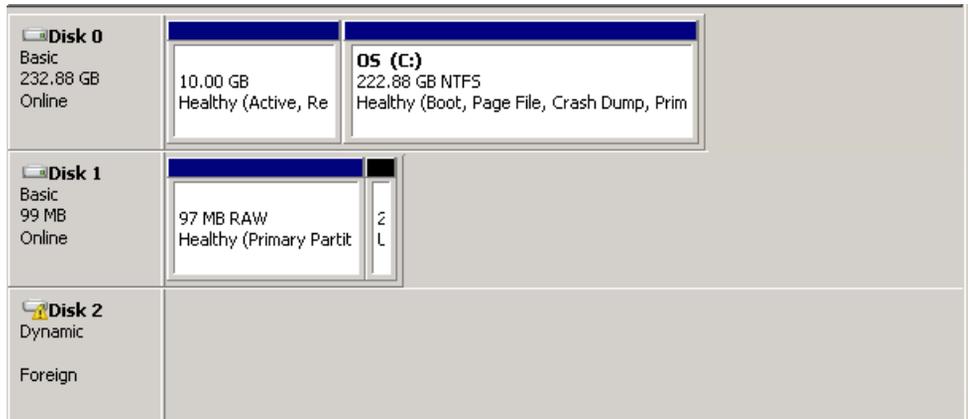


25. Click **Remove**.

A Disk Management message box opens.

26. Click **Yes**.

Notice that Disk 1 is no longer labelled (E:) drive, and Disk 2 still appears as a Foreign drive.

27. Right-click on **Disk 2**, Foreign disk, and select **Import Foreign Disks...**

A message appears asking if you are sure you want to import foreign disks.

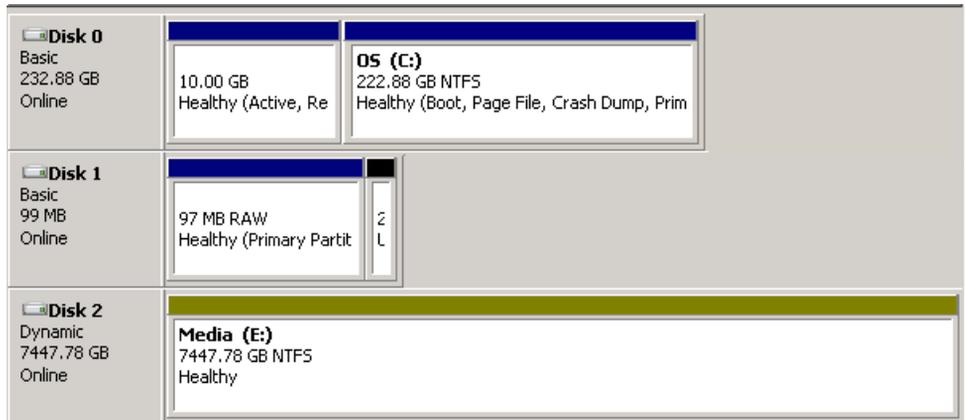
28. Click **Yes** on any Confirmation dialog boxes that appear. The drives will display the following information:



*The E: volume is labelled “Media” by default, but might appear with another name if it has been changed.*



*If you intend to use the Remote Console and Proxy Viewer to view Proxy clips, the E drive should be shared with at least “Read” privileges.*



Your media drive (Disk 2) will be available with media and databases intact.

29. The next step is to set up your system. This is described in the topic [“Configuring the AirSpeed 5000 for Your Network” on page 80.](#)

When you are done with that, you can re-install the latest version of the AirSpeed 5000 server software for your site, as described in [“Installing AirSpeed 5000 Server Software” on page 101.](#)

## Installing AirSpeed 5000 Server Software

For new systems, the AirSpeed 5000 server software is pre-installed on your server. However, in the case where you have re-imaged your AirSpeed 5000 server, or are updating your AirSpeed 5000 server software version, you need to install the latest Avid Service Framework, and AirSpeed 5000 application software using the **AirSpeed5000Setup.exe**.

This topic contains information on how to install the AirSpeed 5000 server software on the AirSpeed 5000 server.



**If this is a new AirSpeed 5000 system, it has been pre-loaded with the AirSpeed 5000 software. You need to install the AirSpeed 5000 server application software only if you are upgrading your software version, or have re-imaged your system.**



*When installing or upgrading your AirSpeed 5000 software, you must run the installer when logged into the system from the same network or subnet in which the system is configured. Some remote access or desktop solutions may access the system with different permissions, potentially causing installation and configuration of IIS and SQL components to fail. This is likely to be an issue when attempting to update a system via an Internet-based remote solution that does not use a direct VPN connection.*



*Log on as **amsuser** and **is-admin** as the password.*



*Some USB flash devices might not appear in a Safely Remove Hardware dialog box even though they are plugged in. In addition, it might take several seconds for a USB device to be available to the system.*



**During the installation process, do not modify the default user logon and password. This might result in a failure to install properly and might cause your system to crash. When installing, either modify the default user logon before beginning the application install process, or modify the user logon after installation and configuration of the application is complete.**

This installation procedure also installs the following components on the AirSpeed 5000 server:

- Avid Diagnostics
- Avid Health Monitor
- Avid Service Configuration
- Avid Workgroup Properties
- AirSpeed 5000 Client Stand Alone application

**To install the AirSpeed 5000 server software:**

1. Navigate to the **AirSpeed 5000** folder in the AirSpeed 5000 Installation location for your site.
2. Double-click **AvidAirSpeed5000Setup.exe**.

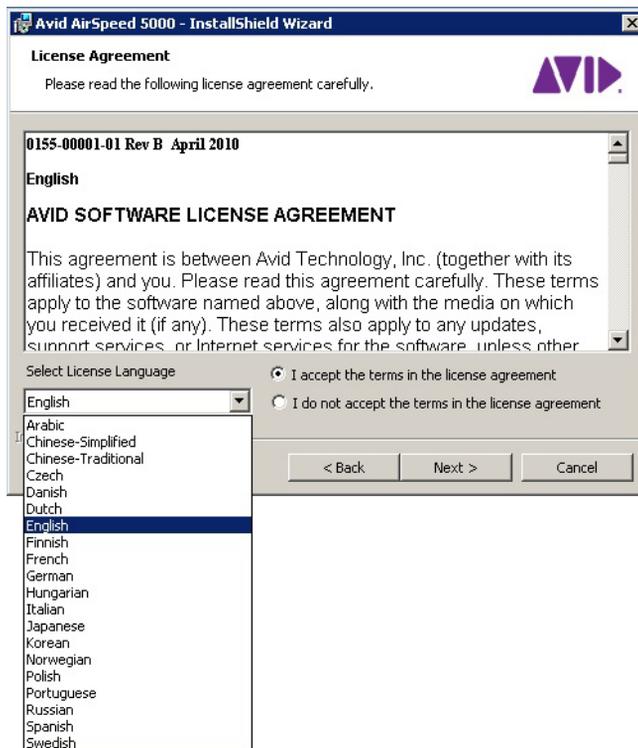
You will be asked if you want to run this program.

3. Click **Run**.

The InstallShield Wizard opens to guide you through the rest of the installation process.

4. Click **Next**.

The License Agreement dialog box opens.



5. Select your language from the Select License Language list.

The default language is English.



*If you want to view a copy of the EULA License in all languages, the License file is located on your system. Navigate to C:\Program Files\Avid\Avid AirSpeed 5000\Licenses\Avid, and select the PDF or RTF License file.*

6. Accept the terms of the license agreement, and click **Next**.

The Ready to Install the Program dialog box opens.

7. Click **Install**.

The software begins to install.



*If a dialog box opens asking if you want to install this device software, click **Install**.*

8. Click **Finish**.

A message box opens telling you to restart your system.

9. Click **Yes** to restart your system.

When your system restarts, the AirSpeed 5000 application will update the hardware components. It will also create a new database.



*If there was a previous database on your system called “autogen”, it will be recreated when the application restarts. If there was not a previous database on your system, or if the previous database had been renamed, a new database will be generated when the application restarts.*

When the installation is complete, it will automatically reboot the system, unless it has to update the NIX FPGA. Then, it will shut down the system, and you will have to restart it manually.

10. If your site is:

- ▶ Using Avid iNEWS Command, Avid CaptureManager or Interplay Capture to control AirSpeed 5000 channels for capture or playout, you must install the AirSpeed Multi Stream Device Service. For more information, see the documentation that came with your iNEWS Command, CaptureManager, or Interplay Capture system. After that is done, you will be ready to configure your system.
- ▶ Not using Avid iNEWS Command, Avid CaptureManager, or Interplay Capture to control AirSpeed 5000 channels for playout, go to the next step.

For more information on configuring your AirSpeed 5000 application, see the *AirSpeed 5000 Administrator's Guide* or the *AirSpeed 5000 Management Console Help*.

11. Depending on which environment your site will be configured the Avid Service Framework:

- ▶ If your site is configured using the **Standalone** environment, you must configure your Avid Service Framework to properly join the Standalone environment using the Avid Workgroup Properties dialog box.  
For more information on using the Avid Workgroup Properties dialog box, see the topic “Avid Workgroup Properties” in the *Avid Service Framework User’s Guide*.
- ▶ If your site is configured using the **Team** environment, you must configure your Avid Service Framework to properly join the Team environment using the Avid Workgroup Properties dialog box.
- ▶ If your site will be configured using the **Interplay Production** environment, you must configure your Avid Service Framework to properly join the Interplay Production environment using the Avid Workgroup Properties dialog box. For more information, see the topic “Avid Workgroup Properties” in the *Avid Service Framework User’s Guide*.

## Configuring the AirSpeed 5000 for Record and Playback

When you are done installing or updating your software, you can configure the AirSpeed 5000 application software for your site’s environment. This includes setting up Record and Destination templates, and configuring AirSpeed 5000 channels for ingest and playout, among other tasks.

For information on configuration your AirSpeed 5000 server for record and playback, see the *AirSpeed 5000 Administrator’s Guide* or the *AirSpeed 5000 Management Console Online Help*.

## Monitor Application

When you log into your system, the AirSpeed 5000 Monitor application launches, and allows for the enabling or disabling of AirSpeed 5000 and Transfer Engine components. When a component is disabled it will not be started or restarted automatically.



*The Monitor application runs as a separate application, and should not be closed, unless performing system maintenance or installing or upgrading software.*

During installation and upgrade of AirSpeed 5000, all components in the Monitor application are set to ‘Disabled’, ensuring proper updating and rebooting. After installation, the Monitor application will launch and appear with all components set to ‘Disabled’ status. To enable them, do the following in the Monitor application:

- Select the components you want to enable (AirSpeed 5000 and Transfer Engine), and click **Enable Application**.
- Minimize the Monitor application to the Taskbar.



*This action keeps the enabled applications running in the event of a crash or other critical error; and also restarts components after a settings change, when appropriate.*

*If an application requests a restart directly, it is recommended that you close the application by clicking the 'x' close window button or select 'exit' from the 'file' menu. The Monitor application will restart the application after it has closed. This ensures that your settings are applied properly. It is not recommended to use the Monitor application to stop and start all components as this may lead to unexpected results.*

## Accessing the Knowledge Base

The Avid Customer Support Knowledge Base (Knowledge Base) provides additional information that is frequently updated.



*Some locations on the Knowledge Base require you to log in as a registered user, but you can access most of the information in the Knowledge Base without registering and logging in.*

### **To access the Knowledge Base:**

1. Go to [www.avid.com](http://www.avid.com).
2. Click Service & Support
3. Click Knowledge Base.
4. (Option) Click Login.



*If you are not already a registered user of the Knowledge Base, click Register and follow the on-screen registration instructions to register now. Registered users can access more information.*

5. Search for the information you need.

# A Specifications and Notices

This section provides information on the dimensions and weight, the environmental, the electrical, acoustic, audio, video and the power cord specifications for the Avid AirSpeed 5000 Server (both 4-channel and 2-channel models), and qualified Multi I/O Expansion Panel. It also recommends the use of an Uninterruptible Power Supply and supported network cabling.

This section also provides a detailed listing of all technical system specifications and connector pinouts for the AirSpeed 5000 server.

The following topics are discussed:

- [Dimensions and Weight](#)
- [Environmental Specifications](#)
- [Power Specifications](#)
- [Acoustic Specifications](#)
- [Video Channels](#)
- [Video Compression \(4-Channel Models\)](#)
- [Audio Specifications](#)
- [Control and Synchronization Specifications](#)
- [Aspect Ratio Conversion \(ARC\) - Up/Down/Cross Conversion](#)
- [Redundancy](#)
- [File Ingest/Exchange](#)
- [Storage](#)
- [Connection Specifications](#)
- [Connector Pinouts and Connections](#)
- [Uninterruptible Power Supply \(UPS\)](#)

# Dimensions and Weight

The following table lists the dimensions and weight.

## Component Dimensions and Weight

Component	Height	Width	Depth	Rack Units	Weight
Avid AirSpeed 5000 Server (4-channel model)	3.5 in. (89 mm)	19.0 in. (483 mm)	29.5 in. (686 mm)	2	62 lb (28.2 kg) with 10 drives installed
Avid AirSpeed 5000 Server (2-channel model)	3.5 in. (89 mm)	19.0 in. (483 mm)	29.5 in. (686 mm)	2	xx lb (28.2 kg) with 5 drives installed
Multi I/O Expansion Panel	1.75 in. (44.5 mm)	19.0 in. (483 mm)	4.0 in. (101.6 mm)	1	4.40 lb (2.0 kg)

# Environmental Specifications

The following table lists the environmental specifications.

## Environmental Specifications

Component	Operating Temperature	Operating Humidity	Non Operating Temperature	BTU/Hr Typical/Maximum
Avid AirSpeed 5000	32°F to 104°F (0°C to 40°C)	5% to 95% (at 38°C) non-condensing	–4°F to 140°F (–20°C to 60°C)	1235 BTU/Hr Typical 2593 BTU/Hr Maximum

## Power Specifications

The following table lists the Power specifications.

### Power Specifications

Component	Voltage	Frequency	Watts (Avg. U.S.)	Watts (Max. U.S.)
Avid AirSpeed 5000 Server (4-channel model)	90 to 240 Vac Dual/Redundant, hot-swap AC power supplies	50 to 60 Hz	362 W Typical	720 W Maximum  <i>System Watts; running load software and 100 % CPU usage.</i>
Avid AirSpeed 5000 Server (2-channel model)	90 to 240 Vac Dual/Redundant, hot-swap AC power supplies	50 to 60 Hz	362 W Typical	720 W Maximum  <i>System Watts; running load software and 100 % CPU usage.</i>

## Acoustic Specifications

The following table lists the acoustic specifications.

### Acoustic Specifications

Component	SPL (A-weighted)
Avid AirSpeed 5000	63.5 db at 1 meter (typical) 78 db at 1 meter (worst case 40°C)

# Video Channels

This section describes the video channels.

All 4-channel model servers support four (4) bi-directional channels (1 input, 1 main output, 1 auxiliary output per channel)

All 2-channel model servers support two (2) bi-directional channels (1 input, 1 main output, 1 auxiliary output per channel)

the following also applies:

- PAL, NTSC, 1080i 50/60, 720p 50/60 (SMPTE 259M, SMPTE 292M, SMPTE 295M, SMPTE 296M)
- Base model supports upconvert to HD output as a standard feature.
- Base model requires **DNxHD for Base System Option** to support HD input.

## Video Compression (4-Channel Models)

This section describes the video compression for all 4-channel model servers (Base, MPEG-2 HD, and AVC-Intra).

### Video Compression (4-Channel Model Servers)

Parameter	Specification
Base model	Supports four (4) channels of SD record or play of the following compressions: <ul style="list-style-type: none"> <li>• DV25 (4:1:1 and 4:2:0)</li> <li>• DV50 (4:2:2)</li> <li>• IMX 30 and 50</li> </ul>
MPEG-2 HD model	<ul style="list-style-type: none"> <li>• Supports four (4) channels of HD record or play of the following compressions:               <ul style="list-style-type: none"> <li>- HDV 25Mbps</li> <li>- MPEG-2 HD 17.5, 35 (thin and full raster), and 50Mbps</li> </ul> </li> <li>• Supports four (4) channels of DNxHD 85 or 100 play (standard)</li> <li>• Supports four (4) channels of DNxHD 120 or 145 play (standard)</li> <li>• Supports two (2) channels of DNxHD 185 or 220 play (standard)</li> </ul>
AVC-Intra model	<ul style="list-style-type: none"> <li>• Supports four (4) channels of HD record or play of AVC-Intra 50 and 100</li> <li>• Supports four (4) channels of DNxHD 85 or 100 play (standard)</li> <li>• Supports four (4) channels of DNxHD 120 or 145 play (standard)</li> <li>• Supports two (2) channels of DNxHD 185 or 220 play (standard)</li> <li>• Supports four (4) channels of MPEG-2 HD play (standard) (HDV 25Mbps, MPEG-2 HD 17.5, 35, and 50 Mbps)</li> </ul>

## Video Compression (4-Channel Model Servers)

---

Parameter	Specification
Options	<p>The following options are available for 4-channel model servers:</p> <ul style="list-style-type: none"> <li>• <b>DNxHD for Base System Option</b> enables the Base system to record or play: <ul style="list-style-type: none"> <li>- Four (4) channels DNxHD 120 or 145</li> <li>- Two (2) channels DNxHD 185 or 220</li> <li>- Four (4) channels DNxHD 85 or 100</li> </ul> </li> <li>• <b>DNxHD for MPEG-2 HD/AVC-Intra System Option</b> enables MPEG-2 HD or AVC-Intra system to record: <ul style="list-style-type: none"> <li>- Four (4) channels DNxHD 120 or 145</li> <li>- Two (2) channels DNxHD 185 or 220</li> <li>- Four (4) channels DNxHD 85 or 100</li> </ul> <p> <i>MPEG-2 HD and AVC-Intra systems can play DNxHD as a standard feature.</i></p> </li> <li>• <b>H.264 Low Res Proxy Option</b> enables real time simultaneous h.264 800Kbps proxy creation for every channel of hi resolution record (four (4) channels of SD or HD) <p> <i>All supported formats can be seamlessly played back-to-back.</i></p> </li> </ul>

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## Video Compression (2-Channel Models)

This section describes the video compression for all 2-channel model servers (MPEG-2 HD, and AVC-Intra).

### Video Compression (2-Channel Model Servers)

Parameter	Specification
MPEG-2 HD model	<ul style="list-style-type: none"> <li>• Supports two (2) channels of SD record or play of the following compressions:               <ul style="list-style-type: none"> <li>- DV25 (4:1:1 and 4:2:0)</li> <li>- DV50 (4:2:2)</li> <li>- IMX 30 and 50</li> </ul> </li> <li>• Supports two (2) channels of HD record or play of the following compressions:               <ul style="list-style-type: none"> <li>- HDV 25Mbps</li> <li>- MPEG-2 HD 17.5, 35 (thin and full raster), and 50Mbps</li> </ul> </li> <li>• Supports two (2) channels of DNxHD 85 or 100 play (standard)</li> <li>• Supports two (2) channels of DNxHD 120 or 145 play (standard)</li> <li>• Supports one (1) channel of DNxHD 185 or 220 play (standard)</li> <li>• Supports two (2) channels of AVC-Intra play only</li> </ul>
AVC-Intra model	<ul style="list-style-type: none"> <li>• Supports two (2) channels of SD record or play of the following compressions:               <ul style="list-style-type: none"> <li>- DV25 (4:1:1 and 4:2:0)</li> <li>- DV50 (4:2:2)</li> <li>- IMX 30 and 50</li> </ul> </li> <li>• Supports two (2) channels of HD record or play of AVC-Intra 50 and 100</li> <li>• Supports two (2) channels of DNxHD 85 or 100 play (standard)</li> <li>• Supports two (2) channels of DNxHD 120 or 145 play (standard)</li> <li>• Supports one (1) channel of DNxHD 185 or 220 play (standard)</li> <li>• Supports two (2) channels of MPEG-2 HD play (standard) (HDV 25Mbps, MPEG-2 HD 17.5, 35, and 50 Mbps)</li> </ul>

## Video Compression (2-Channel Model Servers)

Parameter	Specification
Options	<p>The following options are available for 2-channel model servers:</p> <ul style="list-style-type: none"> <li>• <b>DNxHD for MPEG-2 HD/AVC-Intra 2-Channel System Option</b> enables MPEG-2 HD or AVC-Intra system to record: <ul style="list-style-type: none"> <li>- Two (2) channels DNxHD 120 or 145</li> <li>- One (1) channel DNxHD 185 or 220</li> <li>- Two (2) channels DNxHD 85 or 100</li> </ul> </li> </ul> <p> <i>MPEG-2 HD and AVC-Intra systems can play DNxHD as a standard feature.</i></p> <ul style="list-style-type: none"> <li>• <b>H.264 Low Res Proxy 2-Channel Option</b> enables real time simultaneous h.264 800Kbps proxy creation for every channel of hi resolution record (two (2) channels of SD or HD).</li> </ul> <p> <i>All supported formats can be seamlessly played back-to-back.</i></p>

## Audio Specifications

This section describes the audio specifications.

### Audio Specifications

Parameter	Specification
Channels	<p>For SD (record or play), we support up to four (4) pairs of embedded audio per video channel.</p> <p>For HD (record or play), we support eight (8) pairs of embedded audio per video channel.</p>
Sampling	48 KHz, 16 or 24 bit precision
Compressed Audio Preservation	Passthrough of AC-3 and Dolby E audio.
Low RES Proxy Audio	<p>Up to eight (8) pairs of proxy audio creation per record channel.</p> <p>MPEG 1 Layer 2 audio compression.</p>

# Control and Synchronization Specifications

This section describes the control and synchronization specifications.

## Control and Synchronization Specifications

Parameter	Specification
External Control	<ul style="list-style-type: none"> <li>• VDCP</li> <li>• Native Network API (AMS API).</li> </ul>
Manual Control	<ul style="list-style-type: none"> <li>• Record, play, trimming and configuration are performed using the AirSpeed 5000 Remote Console user interface.</li> <li>• IsoSync synchronized cue, record, and stop of up to twelve (12) channels across multiple servers through the user interface</li> <li>• GPI/O (Record, Play, Stop, Recue)</li> </ul>
Timecode	<ul style="list-style-type: none"> <li>• LTC SMPTE 12M one (1) input and one (1) output per video channel.</li> <li>• VITC SMPTE 266 with Input and Output Line Selections</li> <li>• Ancillary timecode.</li> </ul>
Reference	Analog black burst (NTSC or PAL), or tri-level reference, with loopthrough input/output.
Closed Caption and Ancillary Data	<ul style="list-style-type: none"> <li>• All Closed Caption lines are preserved (DV, IMX).</li> <li>• All HD ancillary data is preserved per SMPTE 436.</li> </ul>

## Aspect Ratio Conversion (ARC) - Up/Down/Cross Conversion

This section describes the aspect ratio conversion (ARC) specifications for the following:

- SD <> 1080i
- SD <> 720p
- 720p <> 1080i
- SD 4:3 <> SD 16:9



*Supports crop, Anamorphic, Pillarbox, and Letterbox outputs with dynamic conversion based on AFD.*

## Redundancy

With regards to redundancy, we support the following:

- Redundant network connections
- Hot-swap redundant power supplies
- Hot-swap redundant media drives
- Hot-swap mirrored boot (OS) drives
- N+1 system fans

## File Ingest/Exchange

We support FTP transfer of MXF OP1A files in or out.

## Storage

For storage, the AirSpeed 5000 is equipped with the following:

- 4-channel model servers comes with ten (10) 1 TB drives RAID 50 (8 TB usable).
- 2-channel model servers comes with five (5) 1 TB drives RAID 5 (4 TB usable).

# Connection Specifications

This section describes the connection specifications.

## Connection Specifications

Parameter	Specification
Serial	Four (4) DB-9 RS-422 connectors
LTC IN	Four (4) BNC connectors
LTC OUT	Four (4) BNC connectors
SDI/HD-SDI IN	4-channel model servers provide four (4) BNC connectors 2-channel model servers provide two (2) BNC connectors
SDI/HD-SDI Main OUT	4-channel model servers provide four (4) BNC connectors 2-channel model servers provide two (4) BNC connectors
SDI/HD-SDI Auxiliary OUT	4-channel model servers provide four (4) 1.0/2.3 connectors (1.0/2.3 to BNC adapters included) 2-channel model servers provide two (2) 1.0/2.3 connectors (1.0/2.3 to BNC adapters included)
Reference IN/Loop	Two (2) BNC connectors (1 In and 1 Loop Out)
GPIO	Eight (8) GPI, eight (8) GPO programmable pins through DB25 expansion port
Keyboard/Mouse Ports	Four (4) USB 2.0 connectors, for USB compatible keyboard and mouse.
VGA	15 pin connector. Supplies 1280 x 1024 32-bit color.
Ethernet Ports (4)	RJ-45 connector, 10BASE-T, 100BASE-T, or 1000BASE-T, auto sensing (only 1000BASE-T is qualified to use on AirSpeed 5000 for Avid Unity network inter-connections).

# Connector Pinouts and Connections

The following connectors are listed in this section:

- “RS-422 Serial Remote DB9 Connector Specifications” on page 117
- “Ethernet Connector Specifications” on page 120
- “Multi I/O Expansion Port Cable Connection Specifications” on page 121
- “LTC Timecode Connector Specifications” on page 124
- “USB 2 Connector Specifications” on page 125



**In order to ensure emission compliance, all cables attached to connectors on the AirSpeed 5000 chassis must be fully shielded and properly grounded to the connector shell where possible.**

## RS-422 Serial Remote DB9 Connector Specifications

AirSpeed 5000 conforms to the VDCP specification for RS-422 communication. In accordance with the VDCP specification, the following applies:

- Transfer rate: 38.4 kb/s
- 1 start bit (space)
- 8 data bits
- 1 parity bit (odd)
- 1 stop bit (mark)

No configuration of the serial ports is required on the AirSpeed 5000 server for proper VDCP communication. The AirSpeed 5000 software configures and controls the available serial ports, and there is no ability to configure the ports at the OS level.

The following diagram shows the serial remote DB9 connection on the AirSpeed 5000:

### Serial Remote DB9 Pin Connections



### Serial Remote DB9 Connectors

Pin #	Pin Connections on AirSpeed 5000
1	Ground
2	RS-422 Transmit data (TX-)
3	RS-232 Receive data (RX+)
4	Ground
5	No Connect
6	Ground
7	RS-422 Transmit data (TX+)
8	RS-232 Receive data (RX-)
9	Ground

### Supported Optional VDCP Commands

The following commands are implemented in Avid products for the VDCP protocol. Avid supports all required VDCP commands, plus the following optional commands. In addition, Avid supports fixed 8 and variable length IDs up to 31 characters.

The AirSpeed 5000 responds with an ACK upon successful completion of the commands listed in the following table. In the event of a transmission error, the AirSpeed 5000 responds with a NACK followed by a status byte.

### Supported Optional VDCP Commands

Command	Description
0x.0C - LOCAL DISABLE	Not currently implemented. Server returns an ACK.
0x.0D - LOCAL ENABLE	Not currently implemented. Server returns an ACK
0x.15 - DELETE PROTECT	This command prevents an ID from being deleted by an ID DELETE command. An UNPROTECT command must be used to enable DELETE ID once the ID is protected. The PROTECT ID command has no effect on the ID being played or copied.

**Supported Optional VDCP Commands (Continued)**

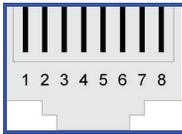
<b>Command</b>	<b>Description</b>
0x.16 - DELETE UNPROTECT	This command is the opposite of Protect ID and allows the ID to be deleted but does not delete the ID by itself. This command has no effect on the ID being played or copied.
1x.04 - STILL/PAUSE	The STILL command causes the currently playing ID to pause. The last frame played prior to receiving the STILL command will continue being displayed. The output port must be in the PLAY, or in the CUED state.
1x.05 - STEP	The STEP command causes the currently playing and paused ID in STILL state or in a play state to advance to the next frame and STILL. The output port must be in a PLAY, CUED, or STILL state or an error will be logged. This is equivalent to JOG with +1 data.
1x.06 - CONTINUE	The CONTINUE command causes the ID currently in the STILL state to continue playing. The output port must be in a PLAY, CUED, or STILL state or an error will be logged.
1x.07 - JOG	The JOG command causes the controlled device to move the specified number of frames forward or backward with respect to its current position.
1x.08 - VARIABLE PLAY	When the VARIABLE PLAY command is received the controlled device will start running in accordance with the speed and direction data defined in SEND DATA-1, SEND DATA-2, and SEND DATA-3.
2x.1D - RENAME	This command renames an ID in the video disk from the Original ID to the New ID. The Original ID will no longer exist once the command is executed.
2x.1F - NEW COPY	This command creates a new ID in the video disk from an existing ID. In terms of the AirSpeed 5000, a subclip is created. If the original clip is deleted, the subclip will also be deleted.
2x.25 - PLAY CUE WITH DATA	This command is similar to the CUE command but allows play out of just a part of the ID.
2x.2C - RECORD INIT WITH DATA	The RECORD INIT WITH DATA command is similar to the RECORD INIT command and allows the setting the timecode of the first frame.  It does not support Clip Overwrite. The ID must not exist prior to issuing the RecordInitWithData command.
3x.14 - ID SIZE REQUEST	This command returns the duration of the specified ID to the controller. The format returns the frames in RETURN DATA 1, seconds in RETURN DATA 2, minutes in RETURN DATA 3 and hours in RETURN DATA 4, in BCD. SEND DATA 1-8 contains the ID name.

### Supported Optional VDCP Commands (Continued)

Command	Description
3x.06 - POSITION REQUEST	The POSITION REQUEST query returns the current position ‘timecode’ or time remaining within the ID which is currently playing on the selected port.
3x.07 - ACTIVE ID REQUEST	This command returns information to the controller about whether a queried port is active (an active port is one that is either recording, playing, cued or cueing), and what the active ID is. This query does not affect the output of the system.
3x.08 - DEVICE TYPE REQUEST	The DEVICE TYPE REQUEST command is used to request the specifications of the Controlled Device. The response to this command is a 16-byte (maximum) data message advising of the specifications of the CONTROLLED DEVICE. The first N bytes will be the manufacturer ID followed by a colon ‘:’

## Ethernet Connector Specifications

The following table lists the 4 Ethernet connectors (RJ-45) specifications on the chassis.



### Ethernet Connector Specifications, Female

Pin #	Wire Color	Signal	Function
1	White-Orange	TD A+	Positive differential transmit
2	Orange	TD A-	Negative differential transmit
3	White-Green	RD B+	Positive differential receive
4	Blue	TD C+	Positive differential transmit
5	White-Blue	TD C-	Negative differential transmit
6	Green	RD B-	Negative differential receive
7	White-Brown	RD D+	Positive differential receive
8	Brown	RD D-	Negative differential receive

## Multi I/O Expansion Port Cable Connection Specifications

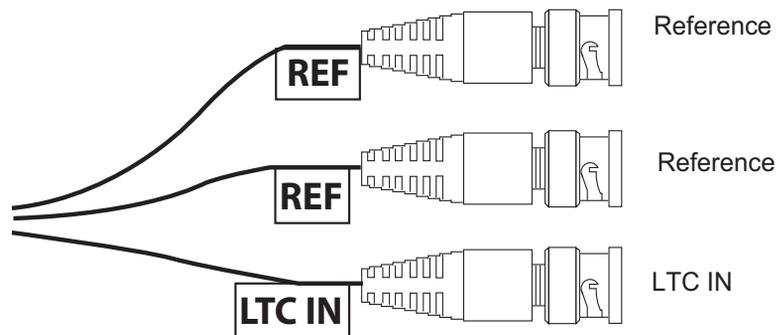
This section contains information on the pin assignments for the female connectors on the Multi I/O Expansion Panel.

### BNC Connectors for LTC IN and Reference

The 3 BNC Connectors on the other end of the Reference and LTC Breakout cable are used for connecting LTC IN (BNC labelled LTC IN) and Reference (the BNCs labelled REF).

- The BNC connector labelled **LTC IN** can be used to provide the **LTC IN** when connected to the DVI port on the AirSpeed 5000 server.
- The two BNC connectors labelled **REF** can be used to provide the **Reference**. The Reference BNCs can be used to provide an un-terminated loop-through. You can connect one to your Reference and another to a terminal or downstream device.

The following diagram illustrates these connectors and their use.



### GPIO Connector Specifications

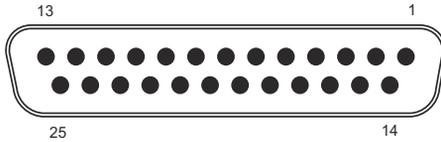
The GPIO Connector is provided by a DB25 Connector on the rear of the of the Multi I/O Expansion Panel.

The GPIO pinouts are “relay closure” driven signals.

The GPIO inputs have internal pullups, and the inputs should be driven with an external relay closure to ground to send the input low. Alternately, the inputs can be driven with a high/low electrical driver (CMOS or TTL), as long as the driver can sink 20mA when driving to a low state.

The GPIO outputs are driven by the AirSpeed 5000 with a relay closure to ground, with the ability to sink at least 20mA. You must provide an external pullup resistor for the outputs.

The GPIO connector has the following pinouts:



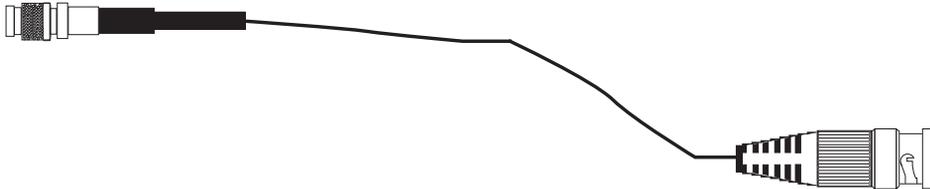
### DB25 Connector Pin Assignments, Female

Pin #	Signal	Pin #	Signal	Pin #	Signal
1	GP Input 0	10	Ground	19	GP Output 5
2	GP Input 1	11	Ground	20	GP Output 6
3	GP Input 2	12	Ground	21	GP Output 7
4	GP Input 3	13	Ground	22	Ground
5	GP Input 4	14	GP Output 0	23	Ground
6	GP Input 5	15	GP Output 1	24	Ground
7	GP Input 6	16	GP Output 2	25	Ground
8	GP Input 7	17	GP Output 3		
9	No connect	18	GP Output 4		

## Auxiliary (1.0/2.3) to BNC Adapter Cable Connection Specifications

This section contains information on the connection specifications for the Auxiliary (1.0/2.3) to BNC Adapter cable.

Mini-BNC - Attaches to Video I/O Card



BNC Adapter - Attaches to a BNC connection on another device



*The four (4) Auxiliary (1.0/2.3) to BNC Adapter cables are Avid supplied.*

### Connecting Monitor Out

The Mini-BNC connector on the Auxiliary (1.0/2.3) to BNC Adapter cable is used to connect the monitor output from the Aux Output on the rear of the AirSpeed 5000 server.

The BNC adapter connector on the Auxiliary (1.0/2.3) to BNC Adapter cable is used to connect to a BNC connection on another device.

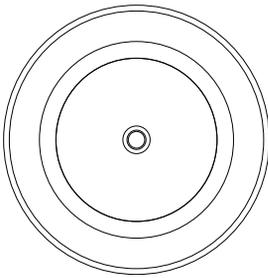
## LTC Timecode Connector Specifications

The LTC In is an AC coupled input which requires a minimum 100mV between the LTC and ground. Peak-Peak input levels can be anywhere between 300 mV and 5.3V.

LTC Loopthrough displays Playback, Channel 2.

In the following LTC diagram:

- Pin 1 is located at the center.
- Ground is located on the outer shell.



The following table lists LTC specifications.

### LTC Timecode Input/Loopthrough Connector Specifications

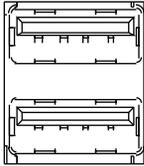
Pin #	Signal	Function
1	LTC	Single ended input
	Ground	



*Shielded cable must be used on each connection to maintain RFI compliance. Connect the shield of the cable to the shield of the connector.*

## USB 2 Connector Specifications

This is a standard USB 2 connector. We support standard USB 2.0 devices, such as flash drives, keyboards and mice.



## Uninterruptible Power Supply (UPS)

Avid highly recommends you create a separate derived power system for your Avid Airspeed 5000. This provides protection against sudden power surges or losses that could cause you to lose files or experience data corruption. The power outlets need to be from the same distribution panel. This helps prevent ground loops that can be caused by plugging equipment into power sources with different ground potentials. Make sure there is adequate, dedicated power for the UPSs.



**You should have all the electrical work at your site done by a licensed electrician. All the electrical changes must meet country, state, and local electrical codes.**

Avid AirSpeed 5000 supports UPS devices that are connected using network connections, USB connections, and serial connections. Install the software from the UPS manufacturer for advanced shutdown behavior, calibrate the UPS device. These software packages also allow for a connected Windows servers to send alerts to other Windows servers to perform actions.

Your Avid AirSpeed 5000 is connected to a network, network policy settings might also prevent you from completing this procedure. Make sure there is adequate power and the correct receptacle type for each hardware component, the rack power strips, and the UPS devices. Do not use extension cords to plug in any of the hardware components.

# **B** Safety and Regulatory Information

This document contains safety and regulatory information for Avid hardware.

- [Warnings and Cautions](#)
- [FCC Notice](#)
- [Canadian Notice \(Avis Canadien\)](#)
- [LED Safety Notices](#)
- [European Union Declaration of Conformity](#)
- [Disposal of Waste Equipment by Users in the European Union](#)
- [Australia and New Zealand EMC Regulations](#)
- [Japan EMC Regulations](#)
- [Korean EMC Regulations](#)
- [Taiwan EMC Regulations](#)

## Warnings and Cautions



**This equipment is intended only for installation in a RESTRICTED ACCESS LOCATION.**



**Never install equipment if it appears damaged.**



**Disconnect the power cord before servicing unit.**



**Only perform the services explicitly described in this document. For services or procedures not outlined in this document, speak with authorized Avid service personnel.**



**Follow all warnings and cautions in the procedures.**



**Operate the device within its marked electrical ratings and product usage instructions.**



**If you need to replace a battery in an Avid hardware unit, be sure to use the correct battery type. There might be a risk of explosion if a battery is replaced by an incorrect type. Dispose of used batteries according to the manufacturer's instructions.**



**For products with a power switch the main power switch should remain accessible after installation.**

**(Hebrew Warnings and Cautions)**

## **הנחיות זהירות**

אין להתקין ציוד הנראה פגום.



יש לנתק את כבל החשמל לפני הטיפול ביחידה.



יש לבצע אך ורק את הטיפולים המתוארים במפורש במסמך זה. עבור טיפולים או הליכים שאינם מתוארים במסמך זה, יש לפנות לאיש שירות מוסמך ומורשה של Avid.



בביצוע ההליכים, יש להישמע לכל הנחיות הזהירות.



יש להפעיל את המכשיר במסגרת הדירוגים החשמליים והנחיות השימוש במוצה.



אם יש צורך להחליף את הסוללה ביחידת חומרה של Avid, יש להקפיד להשתמש בסוג הסוללה הנכון. קיים סיכון להתפוצצות אם הסוללה מוחלפת בסוללה מסוג שגוי. יש להשליך סוללות משומשות בהתאם להנחיות היצרן.



## **FCC Notice**

Part 15 of the Federal Communication Commission Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference free radio frequency spectrum. Many electronic devices produce RF energy incidental to their intended purpose.

### **Class A Equipment**

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 instructions, 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 personal expense.

## Modifications

The FCC requires the user to be notified that any changes or modifications made to Avid hardware that are not expressly approved by Avid Technology may void the user's authority to operate the equipment.

## Cables

Connections to Avid hardware must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

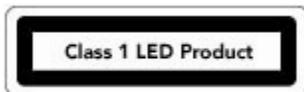
## Canadian Notice (Avis Canadien)

### Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## LED Safety Notices



Avid hardware might contain LED or Laser devices for communication use. These devices are compliant with the requirements for Class 1 LED and Laser Products and are safe in the intended use. In normal operation the output of these laser devices does not exceed the exposure limit of the eye and cannot cause harm.

Standard to which conformity is declared: (Class 1 Eye safe per requirements of IEC 60825-1 / CDRH)

(Hebrew LED Safety Notices)

## הוראות בטיחות של נורות LED



חומרת Avid עשויה לכלול נורות LED או התקני ליזר לצורך תקשורת. התקנים אלה תואמים לדרישות עבור נורות LED ומוצרי ליזר מסוג Class 1, והינם בטוחים לשימוש כראוי. בהפעלה רגילה, הפלט של התקן ליזר זה אינו חורג ממגבלת החשיפה של העין, ואינו יכול לגרום לנזק.

תקן ההתאמה המוצהר: (בטיחות עין מסוג Class 1 לפי דרישות  
(CDRH / 1-60825 IEC

## European Union Declaration of Conformity



Declaration of conformity  
Konformitätserklärung  
Déclaration de conformité  
Declaración de Confomidad  
Verklaring de overeenstemming  
Dichiarazione di conformità

We/Wir/Nous/WIJ/Noi:

Avid Technology  
75 Network Drive  
Burlington, MA, 01803 USA

European Contact: Nearest Avid Sales and Service Office or  
Avid Technology International B.V.  
Sandyford Industrial Estate  
Unit 38, Carmanhall Road  
Dublin 18, Ireland

declare under our sole responsibility that the product,  
erklären, in alleniniger Verantwortung, daß dieses Produkt,  
déclarons sous notre seule responsabilité que le produit,  
declaramos, bajo nuestra sola responsabilidad, que el producto,  
verklaren onder onze verantwoordelijkheid, dat het product,  
dichiariamo sotto nostra unica responsabilità, che il prodotto,

**Product Name(s):** AirSpeed 5000

**Model Number(s):** 7020-30291-XX

**Product Option(s):** This declaration covers all options for the above product(s).

to which this declaration relates is in conformity with the following standard(s) or other normative documents.

auf das sich diese Erklärung bezieht, mit der/den folgenden Norm(en) oder Richtlinie(n) übereinstimmt.

auquel se réfère cette déclaration est conforme à la (aux) norme(s) ou au(x) document(s) normatif(s).

al que se refiere esta declaración es conforme a la(s) norma(s) u otro(s) documento(s) normativo(s).

waarnaar deze verklaring verwijst, aan de volende norm(en) of richtlijn(en) beantwoordt.  
a cui si riferisce questa dichiarazione è conforme alla/e seguente/i norma/o documento/i normativo/i.

The requirements of the European Council:

Safety: Directive 2006/95/EEC

UL 60950-1, 2nd edition

CAN/CSA-C22.2 No. 60950-1-07; 2007

IEC 60950-1, 2nd edition

EN 60950-1:2006

EMC: Directive 2004/108/EC

EN55022:2006 /A1:2007

EN55024:1998 /A1:2001 /A2:2003

EN61000-3-2:2006

EN61000-3-3:2008

Gerrett Durling, VP of Engineering, Shared Services

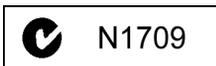
Issued In Burlington MA, USA 2010

## Disposal of Waste Equipment by Users in the European Union



This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.

## Australia and New Zealand EMC Regulations



Ken Hopkins  
Avid Technology (Aust) Pty Ltd  
c/o – Elliot House  
Suite 810, Level 8  
140 Arther St  
North Sydney  
NSW – 2060

## Japan EMC Regulations

### Class A Equipment

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take corrective actions. VCCI-A

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

# Korean EMC Regulations

## Class A Equipment

Please note that this equipment has obtained EMC registration for commercial use. In the event that it has been mistakenly sold or purchased, please exchange it for equipment certified for home use.

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

# Taiwan EMC Regulations

## Taiwan EMC Regulations BSMI Class A EMC Warning

### 警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

### Warning Statement

#### 1. UV ray radiation

- Following statement or equivalent:

**警告：開啟前請先關閉UV燈**

- Following marking or other equivalent marking:



## 2. Operator touchable area protection

Operation manual should have following statement and statement should be shown on device, or put on similar sentence:

警告

危險可動部位

請遠離手指及身體其他部位

## 3. Heat-related hazards

Injury may result from high temperatures under normal operating conditions, causing:

- Burns due to contact with hot accessible parts
- Degradation of insulation and of safety-critical components
- Ignition of flammable liquids

Examples of measures to reduce risks include:

- Taking steps to avoid high temperature of accessible parts
- Avoiding temperatures above the ignition point of liquids
- Provision of marking to warn USERS where access to hot parts is unavoidable

High temperature warning marking — you may use the following high temperature warning marking:



## 4. Mechanical hazards

Injury may result from:

- Sharp edges and corners
- Moving parts which have the potential to cause injury
- Equipment instability
- Flying particles from imploding cathode ray tubes and exploding high pressure lamps

Examples of measures to reduce risks include:

- Rounding of sharp edges and corners
- Guarding
- Provision of SAFETY INTERLOCKS
- Providing sufficient stability to free-standing equipment
- Selecting cathode ray tubes and high pressure lamps that are resistant to implosion and explosion respectively
- Provision of markings to warn USERS where access is unavoidable

#### **5. Radiation**

Injury to USERS and to SERVICE PERSONS may result from some forms of radiation emitted by equipment.

Examples are sonic (acoustic), radio frequency, infra-red, ultraviolet and ionizing radiation, and high intensity visible and coherent light (lasers).

Examples of measures to reduce risks include:

- Limiting the energy level of potential radiation sources
- Screening radiation sources
- Provision of SAFETY INTERLOCKS
- Provision of markings to warn USERS where exposure to the radiation hazard is unavoidable

#### **6. Chemical hazards**

Injury may result from contact with some chemicals or from inhalation of their vapors and fumes.

Examples of measures to reduce risks include:

- Avoiding the use of constructional and consumable materials likely to cause injury by contact or inhalation during intended and normal conditions of use
- Avoiding conditions likely to cause leakage or vaporization
- Provision of markings to warn USERS about the hazards

#### **7. Safety warning statement for equipment that is under hazardous voltages**

#### **8. Equipment with touch current exceeding 3.5 mA**

One of the following labels, or a label with similar wording, shall be affixed adjacent to the equipment AC MAINS SUPPLY connection:

警告

高漏電流

在連接電源前須確實接地

9. An EUT that provides TELECOMMUNICATIONS NETWORK connection ports for connection of multiple items of other telecommunications equipment shall not create a hazard for USERS and TELECOMMUNICATIONS NETWORK SERVICE PERSONS due to summation of TOUCH CURRENT

警告

高漏電流

在連接電信網路

前須確實接地

警告

高接觸電流

在連接電信網路

前須確實接地

10. Replaceable batteries

If an equipment is provided with a replaceable battery, and if replacement by an incorrect type could result in an explosion (for example, with some lithium batteries), the following applies:

- If the battery is placed in an OPERATOR ACCESS AREA, there shall be a marking close to the battery or a statement in both the operating and the servicing instructions
- If the battery is placed elsewhere in the equipment, there shall be a marking close to the battery or a statement in the servicing instructions

The marking or statement shall include the following or similar text:

## 警 告

本電池如果更換不正確會有爆炸的危險

請依製造商說明書處理用過之電池

### 11. Warning to service persons

Suitable markings shall be provided on the equipment or a statement shall be provided in the servicing instructions to alert a SERVICE PERSON to a possible hazard, where both of the following conditions exist:

- Where a fuse is used in the neutral of single-phase equipment either permanently connected or provided with a non-reversible plug
- Where, after operation of the fuse, parts of the equipment that remain energized might represent a hazard during servicing

The following or similar wording is regarded as suitable:

## 注 意

雙極性 / 中性線已接熔線



**Avid**  
75 Network Drive  
Burlington, MA 01803-2756 USA

**Technical Support (USA)**  
Visit the Online Support Center at  
[www.avid.com/support](http://www.avid.com/support)

**Product Information**  
For company and product information,  
visit us on the web at [www.avid.com](http://www.avid.com)