DD DOLBY®

Dolby® Digital Cinema Presentation System Installation and Maintenance Manual

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Regulatory Notices

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICING PERSONNEL ONLY.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

WARNING

TO PREVENT INJURY, THIS EQUIPMENT MUST BE SECURELY RACK-MOUNTED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.

Definitions of Graphical Symbols

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions.

Important Safety Instructions

1. Read These Instructions.

2. Keep These Instructions.

3. Heed All Warnings.

4. Follow All Instructions.

5. Do not use this apparatus near water.

6. Clean only with a dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades, with one wider than the other. A grounding-type plug has two blades and a third prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Unplug this equipment during lightning storms or when unused for long periods of time.

13. On some equipment, the appliance coupler (power cord) is used as the mains disconnect device and should be readily accessible and free from obstacles.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, or the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. CAUTION: This equipment contains a lithium battery NOT for service or replacment by the user. Danger of explosion if the battery is incorrectly replaced. Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water.

EMC

The Dolby® Show Store complies with the EMC requirement of EN55022 and EN55024 when operated in accordance with this manual.

The Dolby Show Player complies with the EMC requirement of EN55103-1 and EN55103-2 when operated in an E2 environment in accordance with this manual.

PRODUCT END-OF-LIFE INFORMATION

This product was designed and built by Dolby Laboratories to provide many years of service, and is backed by our commitment to provide high-quality support. When it eventually reaches the end of its serviceable life, it should be disposed of in accordance with local or national legislation.

For current information please visit our website: http://www.dolby.com/environment.

Dolby Show Store Safety Notice

IMPORTANT SAFETY NOTICE

This unit complies with safety standard EN60950-1 as appropriate. The unit shall not be exposed to dripping or splashing and no objects filled with liquids, such as coffee cups, shall be placed on the equipment. To ensure safe operation and to guard against potential shock hazard or risk of fire, the following **must** be observed:

o   Ensure that your mains supply is in the correct range for the input power requirement of the unit.
o   Ensure **fuses** fitted are the **correct rating and type** as marked on the unit.
o   The unit **must be earthed** by connecting to a correctly wired and **earthed** power outlet.
o   The **power cord** supplied with this unit must be wired as follows:
   Live—Brown   Neutral—Blue   Earth—Green/Yellow

(GB)

IMPORTANT – NOTE DE SECURITE

Ce materiel est conforme à la norme EN60950-1. Ne pas exposer cet appareil aux éclaboussures ou aux gouttes de liquide. Ne pas poser d'objets remplis de liquide, tels que des tasses de café, sur l'appareil. Pour vous assurer d'un fonctionnement sans danger et de prévenir tout choc électrique ou tout risque d'incendie, veillez à observer les recommandations suivantes.

o   Le selecteur de tension doit être placé sur la valeur correspondante à votre alimentation réseau.
o   Les fusibles doivent correspondre à la valeur indiquée sur le materiel.
o   Le materiel doit être correctement relié à la terre.
o   Le cordon secteur livré avec le materiel doit être câblé de la manière suivante:
   Phase—Brun   Neutre—Bleu   Terre—Vert/Jaune

(F)

WICHTIGER SICHERHEITSHINWEIS

Dieses Gerät entspricht der Sicherheitsnorm EN60950-1. Das Gerät darf nicht mit Flüssigkeiten (Spritzwasser usw.) in Berührung kommen; stellen Sie keine Gefäße, z.B. Kaffeetassen, auf das Gerät. Für das sichere Funktionieren des Gerätes und zur Unfallverhütung (elektrischer Schlag, Feuer) sind die folgenden Regeln unbedingt einzuhalten:

o   Der Spannungswähler muß auf Ihre Netzspannung eingestellt sein.
o   Die Sicherungen müssen in Typ und Stromwert mit den Angaben auf dem Gerät übereinstimmen.
o   Die Erdung des Gerätes muß über eine geerdete Steckdose gewährleistet sein.
o   Das mitgelieferte Netzkabel muß wie folgt verdrahtet werden:
   Phase—braun   Nulleiter—blau   Erde—grün/gelb

(D)

NORME DI SICUREZZA – IMPORTANTE

Questa apparecchiatura è stata costruita in accordo alle norme di sicurezza EN60950-1. Il prodotto non deve essere sottoposto a schizzi, spruzzi e gocciolamenti, e nessun tipo di oggetto riempito con liquidi, come ad esempio tazze di caffè, deve essere appoggiato sul dispositivo. Per una perfetta sicurezza ed al fine di evitare eventuali rischi di scossa êlettrica o d'incendio vanno osservate le seguenti misure di sicurezza:

o   Assicurarsi che il selettore di cambio tensione sia posizionato sul valore corretto.
o   Assicurarsi che la portata ed il tipo di fusibili siano quelli prescritti dalla casa costruttrice.
o   L'apparecchiatura deve avere un collegamento di messa a terra ben eseguito; anche la connessione rete deve avere un collegamento a terra.
o   Il cavo di alimentazione a corredo dell'apparecchiatura deve essere collegato come segue:
   Filo tensione—Marrone   Neutro—Blu   Massa—Verde/Giallo

(I)

AVISO IMPORTANTE DE SEGURIDAD

Esta unidad cumple con la norma de seguridad EN60950-1. La unidad no debe ser expuesta a goteos o salpicaduras y no deben colocarse sobre el equipo recipientes con liquidos, como tazas de cafe. Para asegurarse un funcionamiento seguro y prevenir cualquier posible peligro de descarga o riesgo de incendio, se han de observar las siguientes precauciones:

o   Asegúrese que el selector de tensión esté ajustado a la tensión correcta para su alimentación.
o   Asegúrese que los fusibles colocados son del tipo y valor correctos, tal como se marca en la unidad.
o   La unidad debe ser puesta a tierra, conectándola a un conector de red correctamente cableado y puesto a tierra.
o   El cable de red suministrado con esta unidad, debe ser cableado como sigue:
   Vivo—Marrón   Neutro—Azul   Tierra—Verde/Amarillo

(E)

VIKTIGA SÄKERHETSÅTGÄRDER!

Denna enhet uppfyller säkerhetsstandard EN60950-1. Enheten får ej utsättas för yttre åverkan samt föremål innehållande vätska, såsom kaffemuggar, får ej placeras på utrustningen. För att garantera säkerheten och gardera mot eventuell elchock eller brandrisk, måste följande observeras:

o   Kontrollera att spänningsväljaren är inställd på korrekt nätspänning.
o   Konrollera att säkringarna är av rätt typ och för rätt strömstyrka så som anvisningarna på enheten föreskriver.
o   Enheten måste vara jordad genom anslutning till ett korrekt kopplat och jordat el-uttag.
o   El-sladden som medföljer denna enhet måste kopplas enligt följande:
   Fas—Brun   Neutral—Blå   Jord—Grön/Gul

(S)

BELANGRIJK VEILIGHEIDS-VOORSCHRIFT:

Deze unit voldoet aan de EN60950-1 veiligheids-standaards. Dit apparaat mag niet worden blootgesteld aan vocht. Vanwege het risico dat er druppels in het apparaat vallen, dient u er geen vloeistoffen in bekers op te plaatsen. Voor een veilig gebruik en om het gevaar van electrische schokken en het risico van brand te vermijden, dienen de volgende regels in acht te worden genomen:

o   Controleer of de spanningscarroussel op het juiste Voltage staat.
o   Gebruik alleen zekeringen van de aangegeven typen en waarden.
o   Aansluiting van de unit alleen aan een geaarde wandcontactdoos.
o   De netkabel die met de unit wordt geleverd, moet als volgt worden aangesloten:
   Fase—Bruin   Nul—Blauw   Aarde—Groen/Geel

(NL)

Dolby Show Player Safety Notice

IMPORTANT SAFETY NOTICE

This unit complies with safety standard EN60065 as appropriate. The units shall not be exposed to dripping or splashing and no objects filled with liquids, such as coffee cups, shall be placed on the equipment. To ensure safe operation and to guard against potential shock hazard or risk of fire, the following **must** be observed:

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o   Ensure **fuses** fitted are the **correct rating and type** as marked on the unit.

o   The unit **must be earthed** by connecting to a correctly wired and **earthed** power outlet.

o   The **power cord** supplied with this unit must be wired as follows:

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o   Le materiel doit être correctement relié à la terre.

o   Le cordon secteur livré avec le materiel doit être câblé de la manière suivante:

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o   Die Erdung des Gerätes muß über eine geerdete Steckdose gewährleistet sein.

o   Das mitgelieferte Netzkabel muß wie folgt verdrahtet werden:

    Phase—braun   Nulleiter—blau   Erde—grün/gelb

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o   Il cavo di alimentazione a corredo dell'apparecchiatura deve essere collegato come segue:

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o   Asegúrese que los fusibles colocados son del tipo y valor correctos, tal como se marca en la unidad.

o   La unidad debe ser puesta a tierra, conectándola a un conector de red correctamente cableado y puesto a tierra.

o   El cable de red suministrado con esta unidad, debe ser cableado como sigue:

    Vivo—Marrón   Neutro—Azul   Tierra—Verde/Amarillo

(E)

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o   Konrollera att säkringarna är av rätt typ och för rätt strömstyrka så som anvisningarna på enheten föreskriver.

o   Enheten måste vara jordad genom anslutning till ett korrekt kopplat och jordat el-uttag.

o   El-sladden som medföljer denna enhet måste kopplas enligt följande:

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o   Gebruik alleen zekeringen van de aangegeven typen en waarden.

o   Aansluiting van de unit alleen aan een geaarde wandcontactdoos.

o   De netkabel die met de unit wordt geleverd, moet als volgt worden aangesloten:

    Fase—Bruin   Nul—Blauw   Aarde—Groen/Geel

(NL)

Contents

List of Figures

List of Tables

Introduction

Welcome to Dolby® Digital Cinema!

The Dolby Digital Cinema presentation system is a direct result of Dolby Laboratories' continued leadership in the development of innovative cinema technologies. Dolby Digital Cinema provides a flexible system designed to deliver the best possible cinema experience. In creating this new system, Dolby utilized its vast experience with production and exhibition, processing systems, and cinema equipment design. Designed from the ground up, Dolby Digital Cinema serves the exhibition and production communities equally well, ensuring that the cinema continues to provide the optimum environment for experiencing the director's vision. Building on the company's unique experience as a pioneer in entertainment technologies and as a leading supplier of cinema audio equipment, Dolby Digital Cinema provides reliability, flexibility of operation, adaptability for the future, and system security. Containing both image and sound components, it incorporates the open standards specified by Digital Cinema Initiatives (DCI).

A Dolby Digital Cinema network consists of the following components:

- Dolby Show Store, high reliability storage
- Dolby Show Player, secure high-quality digital content decoder
- Dolby NA10 Network Automation Interface
- Dolby DMA8Plus Digital Media Adapter and a cinema sound processor or a Dolby CP650 Digital Cinema Processor
- Dolby Show Manager theatre management software
- 1000BASE-T Ethernet switches
- User-provided USB keyboard, USB mouse, and computer monitor (minimum 1,024 × 768 resolution at 60 Hz)
- User-provided digital cinema projector (can also include a film projector)

1.1   Dolby Digital Cinema Network Overview

Figure 1-1 shows a typical Dolby Digital Cinema network. In this example, a Dolby Show Store in auditorium 1 sends encrypted and encoded content to a Dolby Show Player in the same auditorium. The Dolby Show Manager software monitors and controls the entire theatre complex (which can include both digital and film projectors, as shown in Figure 1-1).

When Dolby Digital Cinema systems are installed in other auditoriums, the Show Store in each auditorium can send content to its local Show Player and run the Show Manager Client (along with properly equipped remote PCs). However, only one Show Store (in this example, the Show Store in auditorium 1) can function as the Show Manager Server for the entire theatre complex. At the time of the installation, one of the Show Stores is designated as the Show Manager Server by a Dolby authorized technician. The Dolby Digital Cinema presentation system can function with or without the Dolby Show Manager software.

You can start and stop shows and perform many other functions using the Show Player's User Control screen. For detailed information on the Show Player user interface, please refer to the *Dolby Digital Cinema Presentation System User's Manual*. For complete details on the Show Manager software, please refer to the Show Manager online Help system. The following chapters in this manual show you how to install and maintain a Dolby Digital Cinema system.
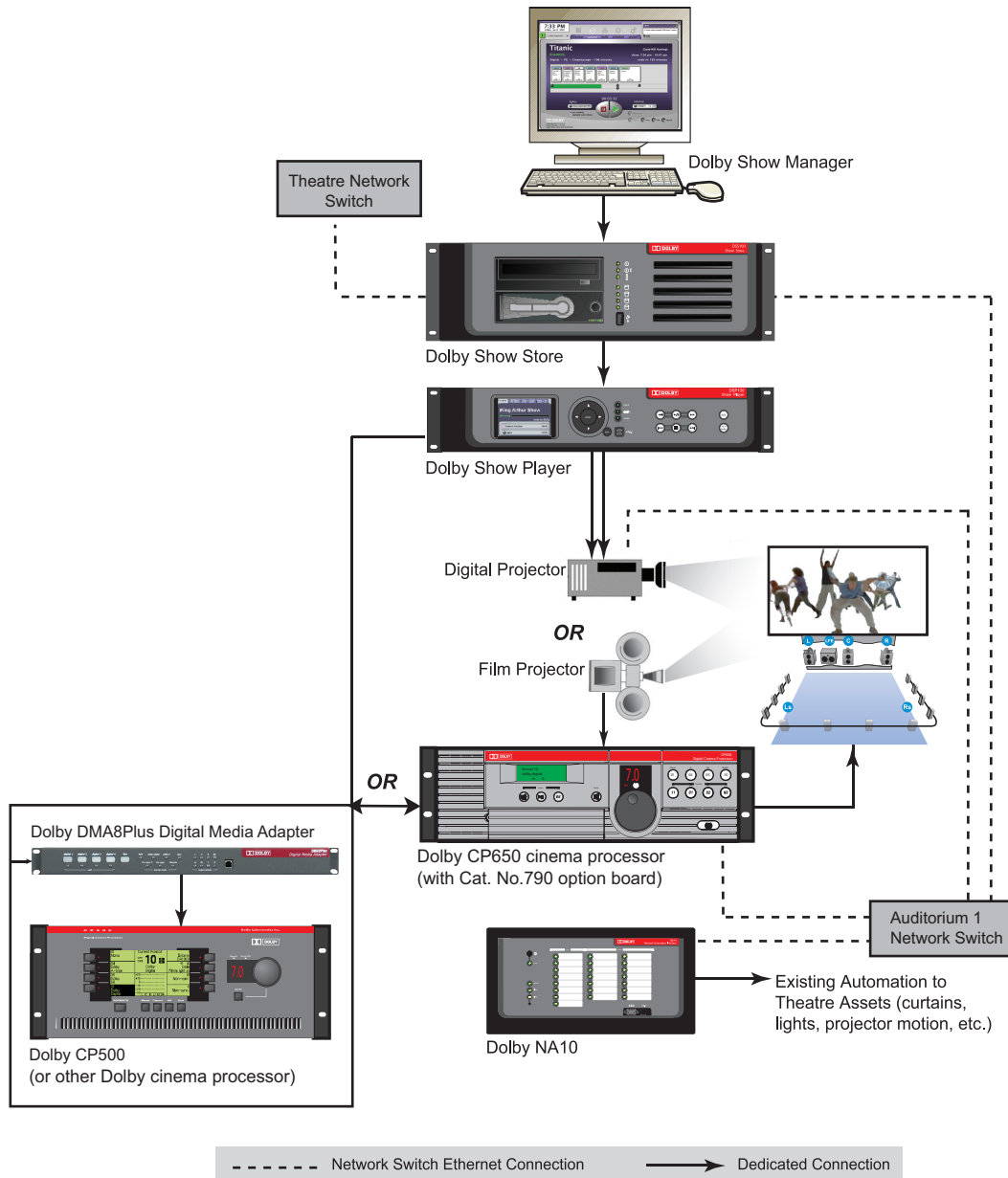
Figure 1-1   Dolby Digital Cinema Network

Show Store and Show Player

2.1   Show Store and Show Player Overview

The Dolby® Show Store and Dolby Show Player are the core components of the Dolby Digital Cinema presentation system. The Show Store reads audio and video content files and serves them to its associated Show Player. After receiving the bitstream, the Show Player decrypts and decodes the audio and video content and reencrypts the video (using link encryption). The Show Player then sends the link-encrypted video to the local auditorium's digital projector for decryption and playback on the associated screen. The Show Player sends the audio portion of the bitstream to a Dolby DMA8Plus Digital Media Adapter and existing cinema processor or directly to a Dolby CP650 for playback through the local auditorium's existing amplifiers and loudspeakers.

The Show Store plays a key role in managing a theatre's Ethernet-based equipment, providing DHCP services, assigning an IP address to each device, performing SLP services, and opening a gateway to each auditorium. To play a show on a specific screen, the Show Store connects to an auditorium network through that network's 1000BASE-T Ethernet switch. This switch interfaces with the auditorium network's Dolby NA10, a cinema sound processor connected to a Dolby DMA8Plus Digital Media Adapter or a Dolby CP650 cinema processor, and the auditorium's digital cinema projector. This connection allows the Show Store to manage the auditorium's Ethernet-based equipment and also its theatre assets (through the NA10).

The Show Store also provides an extended theatre network linking all the auditoriums together through a 1000BASE-T Ethernet theatre backbone switch. In a multiscreen complex, all the other Show Stores (installed in each of the other auditoriums) connect to this switch. Connecting to the theatre network enables the routing of shows and content to specific Show Stores in each auditorium. The shows contain all the information required to run a complete presentation, a list of all the content, the time it is to be played, and also event cues that trigger a specific auditorium's theatre assets.

The Dolby Show Manager software provides monitoring and control across the entire theatre network. The Show Manager database is a central store that contains all the information regarding content, cues, shows, and schedules. The database runs on a Dolby Show Store. The Show Manager client provides a user interface to control a Dolby Digital Cinema system. The Show Manager client can run on any Show Store on the network as well as on remote PCs. This allows authorized users to monitor the status of each auditorium, control playback, build shows, and set up schedules from a remote location (for example, the manager's office).

This manual shows you how to install and maintain both units in single-screen and multiscreen environments. For end-user operating and maintenance instructions, please refer to the *Dolby Digital Cinema Presentation System User's Manual*.

2.1.2   Show Player Front and Rear Panels

The Show Player front and rear panels are shown in Figure 2-3 and Figure 2-4.
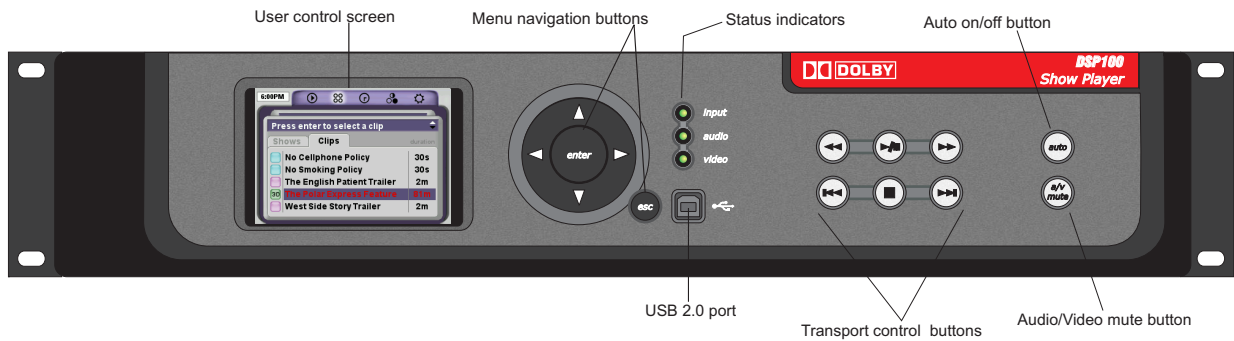
Figure 2-3   Dolby Show Player Front Panel
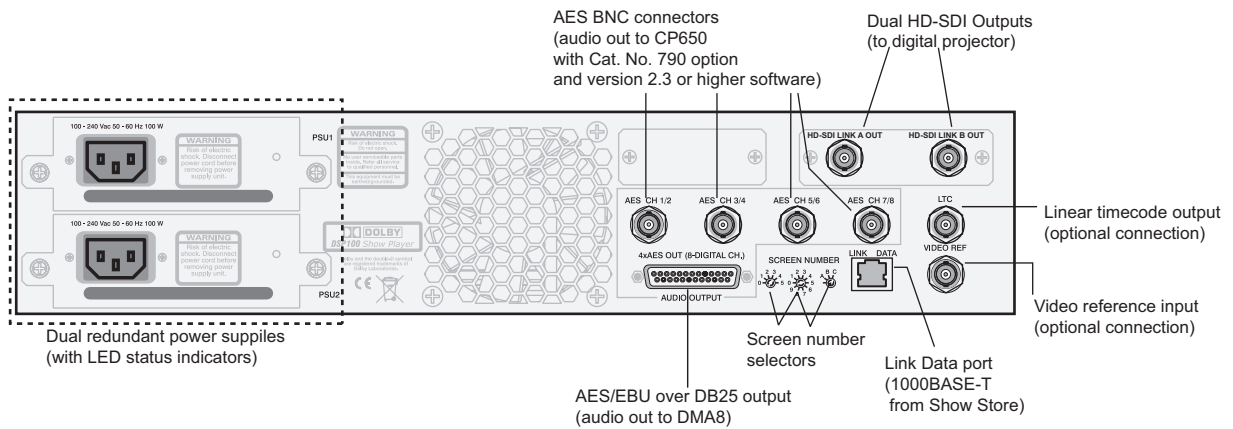
Figure 2-4   Dolby Show Player Rear Panel

Caution: Do not open the Show Player chassis. There are no serviceable parts inside. Opening the unit (breaking the tamper-proof seal) invalidates the security seal and may render the unit inoperable.

Installing a Dolby Digital Cinema System

This chapter provides instructions for installing a Dolby® Digital Cinema system. You begin by registering the Show Player(s), preparing for the installation, and installing the hardware in each auditorium. If a theatre has only one screen, these instructions are all you need to install the hardware.

In a multiple auditorium environment, if you're installing Dolby Digital Cinema systems in two or more auditoriums, follow the registration and hardware instructions in each auditorium, then go to Connecting Multiple Auditoriums to a Theatre Network on page 18 for additional instructions.

After you install the hardware, go to Configuring Single Auditoriums and Multiple Auditoriums on page 21 to complete the installation.

3.1 Register Show Player(s)

Before setting up the system for the first time, you need to register each Show Player by completing the *Dolby Digital Cinema Installation Submission Form (*see Figure 3-1). This electronic form is provided on the *Dolby Digital Cinema Documentation* CD and requires Adobe® Acrobat® Reader® 7. Always enter all the required information (electronically) in the provided fields, then email the information to the appropriate Dolby location following the instructions on the form. Once Dolby sends an email confirmation, the respective Show Player is valid for a specific theatre. This enables authorized users to obtain licenses for that unit, load those licenses on the system, and play back the corresponding content. For instructions on obtaining and loading licenses, see the *Dolby Digital Cinema Presentation System User's Manual*.

Caution: You cannot use a Dolby Digital Cinema system until you register the Show Player(s). Registration activates each Show Player for playback.

Dolby® Digital Cinema Installation

DOLBY

Submission Form

Digital cinema content is often encrypted to protect against piracy. Therefore, the Dolby® Digital Cinema system requires a license or security key to enable playback. These licenses are unique to every digital cinema system and are created for each piece of content. To ensure that you receive the correct licenses for your screens, it is essential that you submit the following information to Dolby Laboratories as soon as possible. To submit the information electronically to Dolby Laboratories, this form requires an Internet connection and email functionality. The submission utilizes either an email client or a webmail account to send the information as an XML file attachment.

Submission online using an email client (such as Microsoft® Outlook®): Fill out the form, click on the appropriate button for your region (below), then follow the onscreen instructions, as the document utilizes your system to send the email.

Submission offline using an email client: The operation is the same as above, but the email is saved in the outbox of your email client. This should automatically be sent during your next connection to your email server using your email client. In most client software, you can also perform this action by clicking the Send/Receive button.

Submission using a webmail account (such as Hotmail®): Fill out the form, then follow the onscreen instructions. You will be prompted to save the data as an XML file. When you connect to your webmail account, create a new email and attach the XML file. For North America, South America, Korea, and Japan, send the email to *CinemaSupport@dolby.com.* For the rest of the world (ROW), send the email to *service@dolby.co.uk.* We will register your system and confirm by email.

Note: This form requires Acrobat® Reader® 7 to send data via email. The data cannot be stored in the PDF document. Saving the PDF does not preserve your entries. * Denotes required information.

Field	
Cinema Name*	
Screen Number*	
Address Line 1*	
Address Line 2*	
City*	
County/Province*	
Country*	
Postal Code/Zip*	
Chief Projectionist*	
Email Address*	
Telephone Number*	
Cinema Manager	
Email Address	
Telephone Number	
Digital Projector Make*	
Digital Projector Model*	
DSP100 Serial Number*	

Submit for North America, South America, Korea and Japan | **Submit for Rest of World (ROW)**

Figure 3-1 Dolby Digital Cinema Submission Form

3.2　　Prepare for an Installation

After registering the Show Player(s), be sure you have the following components before you begin the installation:

1. Dolby Show Player
2. Dolby Show Store
3. Computer monitor (minimum 1,024 × 768 resolution at 60 Hz)
4. USB keyboard and USB mouse
5. Dolby DMA8Plus Digital Media Adapter and a cinema sound processor (or a Dolby CP650 Digital Cinema Processor)
6. Dolby NA10 Network Automation Interface (or Serial or GPI/O automation interface)
7. Dolby Show Player Packing Kit (DSP100-PK), which includes the following items:
    *   Mains cable, US
    *   Mains cable, international
    *   *Dolby Digital Cinema Presentation System User's Manual*
    *   *Dolby Digital Cinema Documentation* CD
    *   Spare fuses
    *   Fuse puller
    *   Power supply blankout plate
    *   Ferrite core cable clamp and tie-wrap
    *   Pot trimmer
8. Dolby Show Store Packing Kit, which includes the following items:
    *   Mains cable, US
    *   Mains cable, international
    *   Ferrite core cable clamp and tie-wrap
9. Optional Dolby Digital Cinema Installation Kit (Cat. No. 899-DMA8Plus or Cat. No. 899-CP650), which includes the following (or the equivalent user-provided) items:
    *   Two 15-foot Cat. 5e red Ethernet cables
    *   One three-foot Cat. 5e blue Ethernet cable
    *   One seven-foot Cat. 5e blue Ethernet cable
    *   One three-foot Cat. 5e green Ethernet cable
    *   One 50-foot Cat. 5e soft blue Ethernet cable
    *   One six-foot black USB cable
    *   One 50-foot green HD-SDI video cable
    *   One 50-foot red HD-SDI video cable
    *   One DMA8Plus to Show Player six-foot 4 x AES cable (Cat. No. 899-DMA8Plus kit only)
    *   One CP650 to Show Player six-foot 4 x AES cable (Cat. No. 899-CP650 kit only)
    *   Gigabit Ethernet switch
    *   Mains cable, international
    *   *Dolby Digital Cinema Presentation System Installation and Maintenance Manual* (this manual)

10. Check the condition of the auditorium's power. Be sure the system's AC power is connected to a breaker of sufficient capacity. All the equipment must be properly grounded.

Caution: When you unpack a Show Store, be sure the internal hard drives (located behind the front panel) are seated in their slots. For instructions on removing the Show Store front panel and accessing an internal drive, please see R eplacing a Drive on page 42.

3.3 Installing the Hardware in a Single Auditorium

This section shows you how to install the Dolby Digital Cinema hardware in a single auditorium.

3.3.1 Rack Mount the System

Proper Grounding

Various types of electrical noise may be present in and around the projection booth with no audible indications of any problem. Proper mounting and wiring of booth equipment helps ensure trouble-free performance.

We recommend that you install star washers on all rack-mounting screws to ensure good ground contact, as shown in the example in Figure 3-2 for a cinema processor. This helps prevent electrical noise problems.
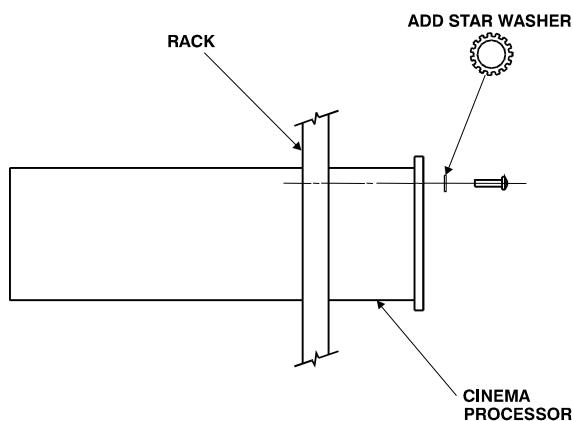
Figure 3-2   Use Star Washers on Rack-Mounting Screws

The DMA8Plus should be mounted in the same rack as the cinema processor to avoid potential problems with ground loops, radiated interference, and so on.

Note: Follow all local codes and regulations covering electrical wiring.

Ventilation

All of the units vent from front to back—be sure to provide proper clearance, and unobstructed air flow. Do not install the units above heat-generating equipment.

3.3.2 Connect Show Store to Show Player

To enable the routing of content, licenses, and shows from a Show Store to a Show Player, link their corresponding 1000BASE-T Ethernet ports as follows:

1. To comply with Class B FCC and CE radiated emission standards, you must install one of the supplied ferrite clamps on each end of an Ethernet cable (Cat. 5e or greater) that connects the Show Store to the Show Player.

   The optional Cat. No. 899 Installation Kit includes a cable that is color-coded green and labeled for your convenience. One ferrite clamp is included in the Show Player packing kit and one ferrite clamp is included in the Show Store packing kit.

2. Lift the top of each clamp to open it.

3. Place the end of each cable into one of the clamps, as shown in Figure 3-3.

   • Push the top of each clamp back to the closed position, then position the clamp next to the RJ45 connector. Be sure both clamps latch into place.

Close clamp

RJ45 Connector

Open clamp and insert cable in cavity
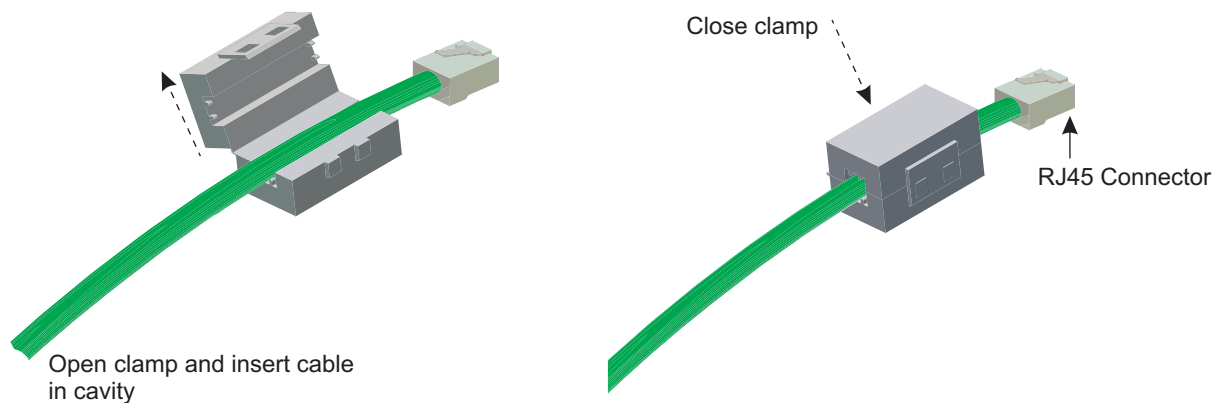
Figure 3-3   Inserting the Cable in the Ferrite Clamp

   • Secure one of the provided nylon tie-wraps around each end of the cable to hold the clamps in place, as shown in Figure 3-4.
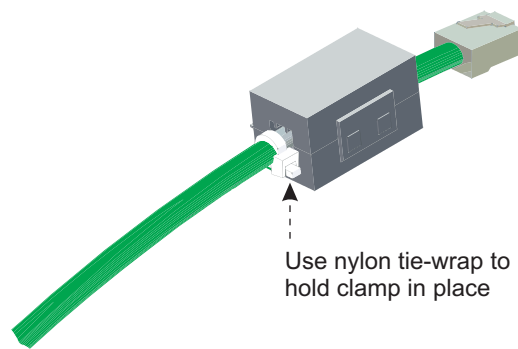
Figure 3-4 Hold Clamp in Place with Tie-Wrap

4. Connect one end of the clamped cable to the Show Store's **SHOW PLAYER** port.

5. Connect the other end of the clamped cable to the Show Player's **LINK DATA** port.

> **Note:** Be sure the bend radius for each side of the Cat. 5e cable is not less than one inch (25 mm).

Connect one end of clamped cable to Show Store   Connect other end of clamped cable to Show Player
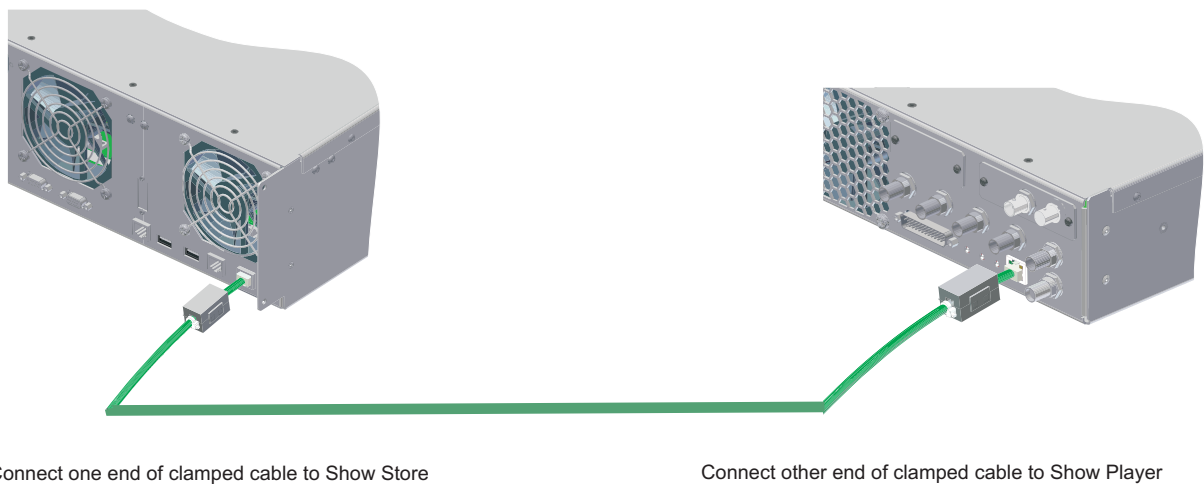
Figure 3-5 Connect Clamped Cable from Show Store to Show Player

> **Note:** Install the clamps only on the Ethernet cable connecting the Show Store to the Show Player. Do not install clamps on any other Ethernet cables in the Dolby Digital Cinema network.

3.3.3 Connect Show Store to Auditorium Network

To connect the Show Store to the screen's auditorium network:

Connect one end of a Cat. 5e (or greater) Ethernet cable to the Show Store's **AUDITORIUM** port, then connect the other end of the cable to the Auditorium's 1000BASE-T switch, as shown in Figure 3-6. The optional Cat. No. 899 Installation Kit provides a cable that is color-coded blue and labeled for your convenience.

> **Note:** Be sure the bend radius for each side of the Cat. 5e cable is not less than 1 inch (25 mm).

To auditorium switch
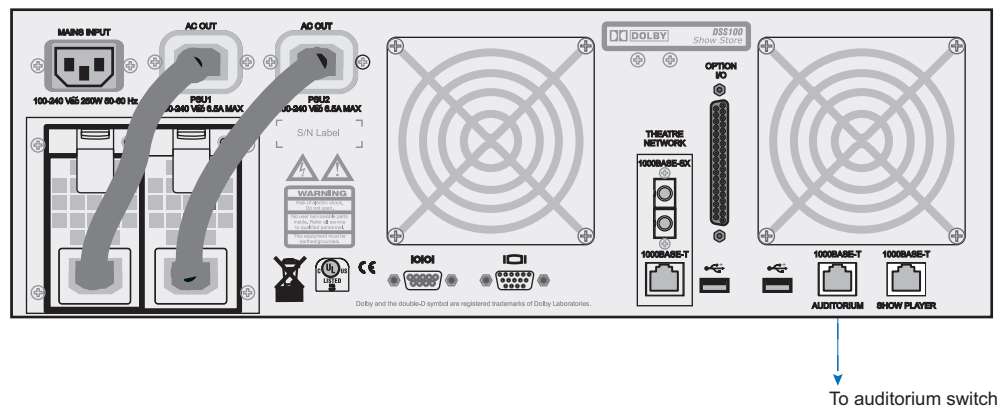
Figure 3-6 Connecting the Show Store to the Auditorium Network

3.3.4 Connect Theatre Automation

You can use Show Manager to control a theatre automation system using any of the following three options:

- Connect a Dolby NA10 to the local auditorium switch and theatre automation system.
- Connect the Dolby Show Store RS-232 serial port to a programmable logic controller (or other device) connected to the theatre automation system.
- Connect the Dolby Show Store GPI/O port to the theatre automation system.

    For information on using Show Manager, refer to the Show Manager online Help system.

Connecting a Dolby NA10 to the Theatre Automation System

You can use a 50-foot Cat. 5e (or greater) Ethernet cable to connect an NA10 to the screen's auditorium 1000BASE-T switch. The optional installation kit provides a cable that is color-coded blue and labeled for your convenience. For details, see the separate *Dolby NA10 Installation Manual*. The NA10 manual also explains how to interface the NA10 with the screen's existing automation system.

> **Note:** Be sure the bend radius for each side of the Cat. 5e cable is not less than one inch (25 mm).

Connecting the Show Store Serial Port to the Theatre Automation System

You can use the Show Store serial port to connect to a theatre automation system that is capable of utilizing a serial connection. For this type of configuration, an additional unit, such as a programmable logic controller (PLC) is required. You can turn on the Serial Automation function and enter the command strings within Show Manager (as described in that application's online Help system). For information on connecting to a PLC or another device, contact your Dolby authorized technical representative.

Connecting the Show Store GPI/O Port to the Theatre Automation System

This port provides a GPI/O interface for connecting to a theatre automation system that is capable of utilizing a GPI/O connection. For information on setting up this type of configuration, contact your Dolby authorized technical representative.

Additional Automation Capabilities

If a problem occurs in the Show Store or Show Player that interrupts playback, the Dolby Digital Fail Safe feature can detect the problem and communicate with the theatre automation system to perform the desired function (for example, turning the house lights on). For more information on implementing this function, contact your Dolby authorized service representative.

3.3.5   Connect DMA8Plus or CP650 to Auditorium Switch

To allow Show Manager to control a DMA8Plus or a similarly equipped CP650 for the local screen, you must connect the respective unit to the auditorium's 1000BASE-T switch as follows:

Connect one end of a seven-foot Cat. 5e (or greater) Ethernet cable to the DMA8Plus or CP650 Ethernet port, then connect the other end of the cable to the auditorium's 1000BASE-T switch. The optional Cat. No. 899-DMA8 and Cat. No. 899-CP650 installation kits include a cable that is color-coded blue and labeled for your convenience.

Note: Be sure the bend radius for each side of the Cat. 5e cable is not less than one inch (25 mm).

3.3.6 Connect Show Player A/V Outputs

To connect the Show Player's audio and video outputs (see Figure 3-7):

1. Connect the provided red HD-SDI cable (SMPTE 292M 1.5 Gbs compliant) to the Show Player's **HD-SDI LINK A OUT** connector, then connect the other end of the cable to the digital projector's **HD-SDI LINK A IN** connector.

Caution: Encrypted content can be played only on a DCI-compliant digital projector.

2. Connect the provided green HD-SDI cable from the Show Player's **HD-SDI LINK B OUT** connector to the digital projector's **HD-SDI LINK B IN** connector.

Note: Be sure the bend radius for each side of the HD-SDI cabling is not less than three inches (75 mm).

If your configuration uses a DMA8Plus:

- Connect the 25-pin D-connector cable (supplied with the optional Cat. No. 899-DMA8Plus Installation Kit) to the Show Player's **4 x AES Out** connector, then connect the other end of the cable to the DMA8Plus **4 x AES In** connector, as shown in Figure 3-7. The Dolby Part Number for this cable is 83534.

  If you are not using a Dolby manufactured cable, be sure to use a similar cable (RG59 or better) that meets the AES audio specification.

- Connect the DMA8Plus **AUDIO OUT TO CP** connector to the analog audio input on the auditorium's cinema sound processor.

If your configuration uses a CP650 with a Cat. No. 790 option card:

- Connect the Show Player's four BNC outputs to the CP650 **OPTION CARD I/O** connector (with Cat. No. 790) using the special cable (supplied with the optional Cat. No. 899-CP650 installation kit), as shown in Figure 3-8. This cable connects four BNC connectors to one 25-pin D-connector. The Dolby Part Number for this cable is 83537.

Note: Be sure the bend radius for each side of the audio cabling is not less than two inches (50 mm).
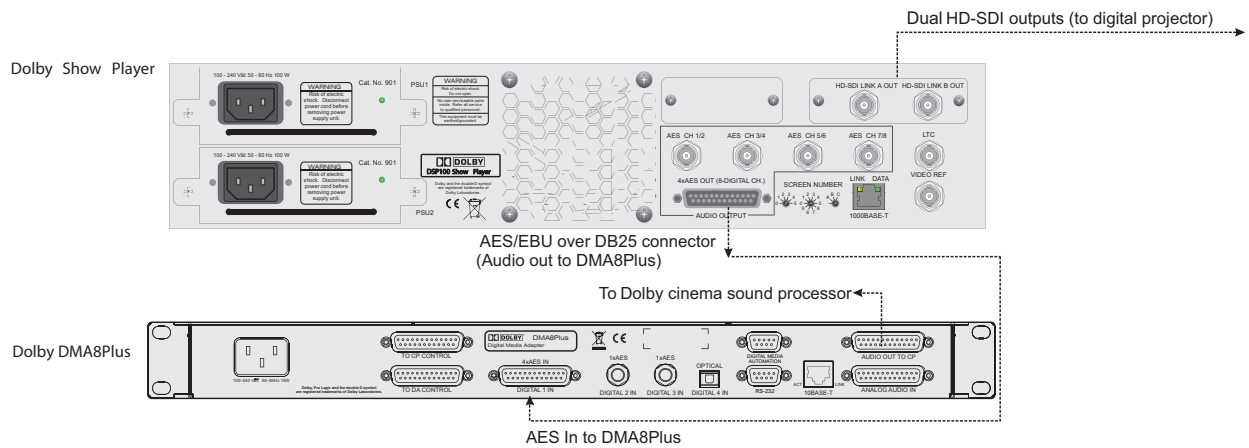
Figure 3-7 Connecting the Show Player's A/V Outputs (DMA8Plus Configuration)
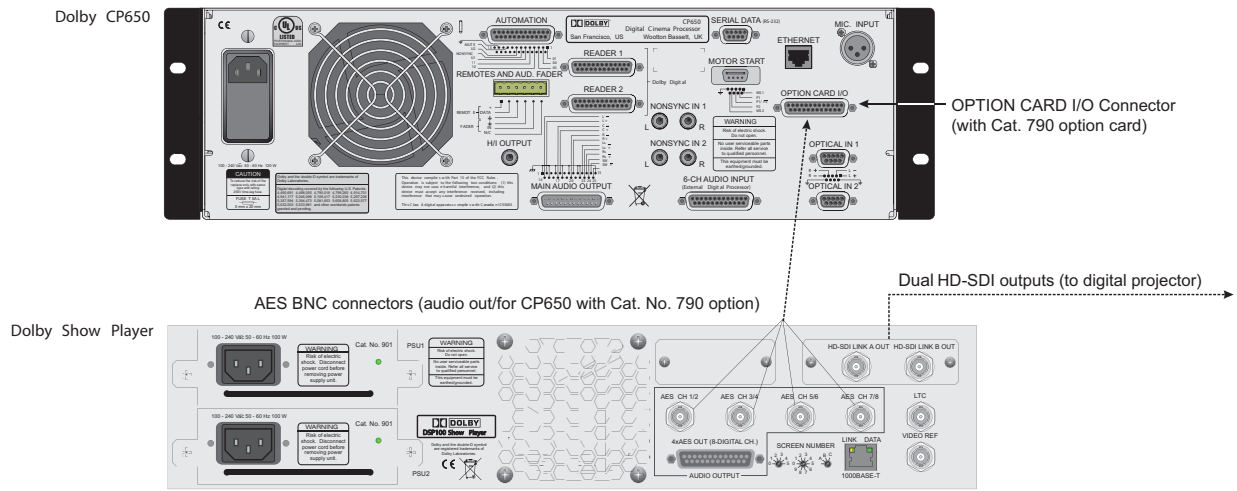
Figure 3-8 Connecting the Show Player's A/V Outputs (CP650 Configuration)

> **Note:** The Show Player **4 x AES Out** connector and the CP650 **OPTION CARD I/O** connector (with Cat. No. 790) are unbalanced 75Ω. If you are not using a Dolby manufactured cable, be sure to use a similar cable that meets the AES audio specification.

3.3.7   Connect Monitor, Keyboard, and Mouse to Show Store

The Show Manager software is installed on all Show Stores. To run Show Manager on a Show Store, you must connect a monitor, USB keyboard, and USB mouse to the Show Store rear panel, as shown in Figure 3-9. For information on using Show Manager, refer to the Show Manager online Help system.
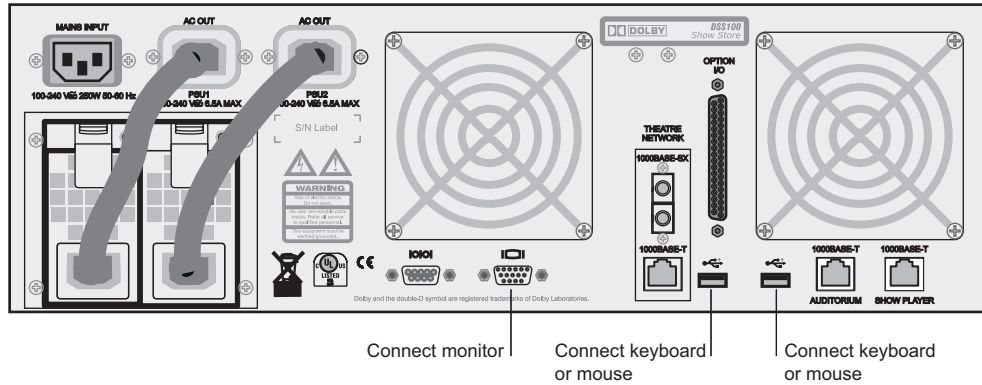
Figure 3-9   Connecting a Monitor, Keyboard, and Mouse to the Show Store

3.4 Connecting Multiple Auditoriums to a Theatre Network

This section shows you how to connect multiple auditoriums to a Dolby Digital Cinema extended theatre network. After installing the hardware for each screen, continue the multiplex installation by connecting each auditorium to an extended theatre network, as described in the following sections.

3.4.1 Set Up Theatre Network

In a multiplex, you can install a Dolby Digital Cinema system in more than one auditorium, and set up a theatre network to manage each of these screens with Dolby Show Manager. You begin this type of installation by setting up a single-screen system in each auditorium following the instructions in the previous sections in this chapter. You can then continue with the installation by connecting the Dolby Show Store in each auditorium (and any remote Show Manager Client PCs) to the theatre network switch (see Figure 3-10), setting up one Show Store as the Show Manager Server and following the additional procedures that follow.

Note: If the multiplex has more than three auditoriums (see Figure 3-10), you must connect a stand-alone Show Store to the theatre network for use as the Show Manager server. In this type of configuration, the stand-alone Show Store is not directly connected to any specific auditorium network. It is connected only to the theatre network switch. For information on using Show Manager, refer to the Show Manager online Help system.
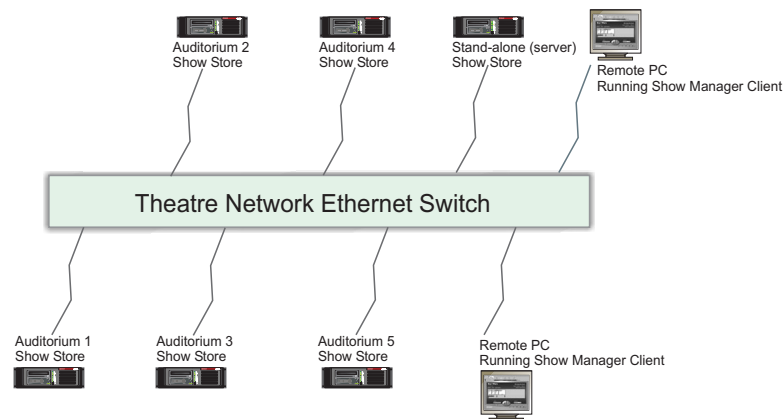
Figure 3-10 Typical Dolby Digital Cinema Theatre Network (Top Level Diagram)

3.4.2　Connect Show Stores to Theatre Network

The copper connection to the theatre network uses the 1000BASE-T port. The optional fiber connection uses the two 1000BASE-SX ports. Copper is acceptable for cable runs of 100 meters or less. For cable runs of 100 meters or greater, fiber is required.

Caution: The theatre network must include only those devices dedicated to Dolby Digital Cinema and cannot interconnect with shared devices connected to other file servers, printers, or other equipment.

To connect each of the Show Stores in a multiplex to a Dolby Digital Cinema theatre network (see Figure 3-11):

1. Connect one end of the provided Ethernet cable to the appropriate Show Store Theatre Network port(s). This cable is color-coded red and labeled for your convenience.

   Always verify that you are transmitting and receiving data. If you are using the fiber ports and experiencing transmission problems, reverse the plugs in the two fiber ports and retest.

2. Connect the other end of the cable to the theatre network's 1000BASE-T or 1000BASE-SX switch, as required for your configuration.
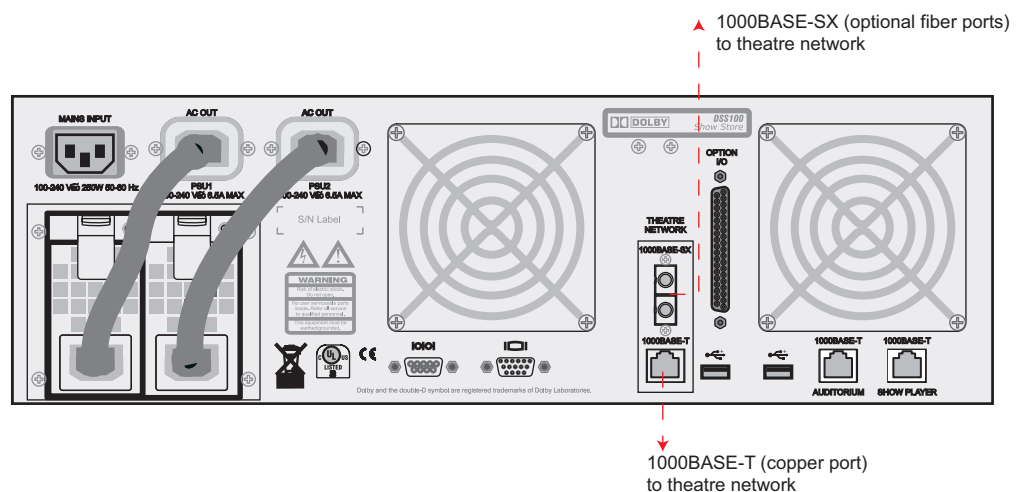
Figure 3-11　Connecting the Show Store to the Theatre Network

Note: Be sure the bend radius for each side of the Ethernet cable is not less than 1 inch (25 mm).

3.5   Dolby Digital Cinema Wiring Diagram

Figure 3-12 provides a detailed Dolby Digital Cinema wiring diagram for the Show Player and the Show Store with related connections.
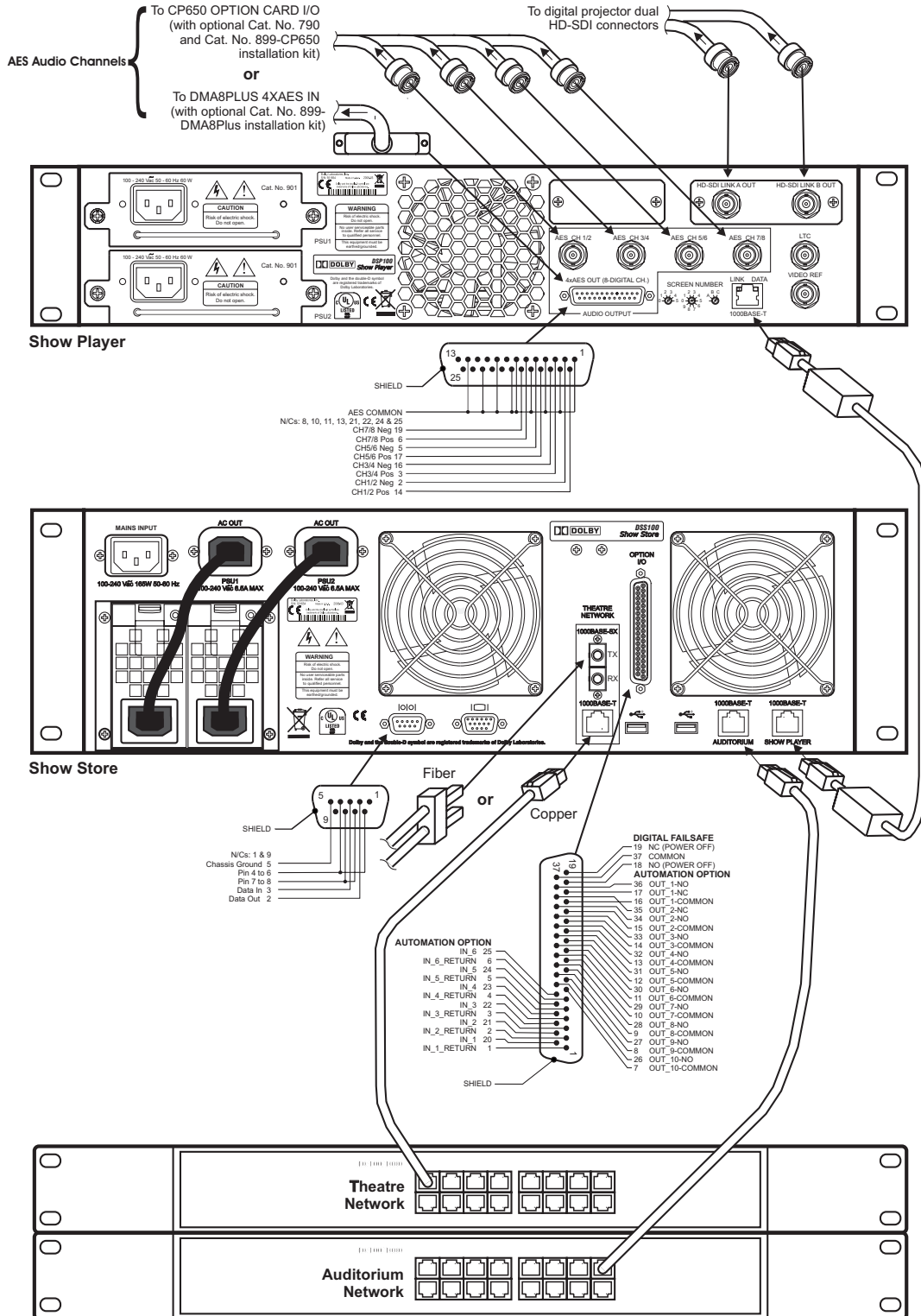
Figure 3-12 Dolby Digital Cinema Wiring Diagram

3.6 Configuring Single Auditoriums and Multiple Auditoriums

This section shows you how to configure and test a Dolby Digital Cinema system. Because single auditorium and multiple auditorium configurations are similar, this section covers both types of setups.

The Dolby Digital Cinema system provides configuration software (Config script) with semi-automatic default network settings for the Show Store, Show Player, CP650, DMA8Plus, NA10, and digital projector, as described in Configuring the System for a Single Auditorium on page 25 and Configuring the System for Multiple Auditoriums on page 29. The Config script automatically applies these defaults to the Show Store and Show Player using the Show Player default screen number (1) for a single auditorium installation, and the specified screen number for each screen in a multiple auditorium installation (for example, 1, 2, 3,4, 5, 6, 7, and 8 for eight auditoriums). However, you must also set the defaults manually on the DMA8Plus, CP650, NA10, and digital projector using the setup software included with each of these units. You can also use the Config script to override the default network settings and enter the desired settings.

Note: Routing between multiple auditoriums is controlled by automatic routing software, which can eliminate the need to set default gateways on Show Store network interfaces. The Show Manager Server references this routing software to locate other theatre hardware.

3.6.1 Configure the NA10, DMA8Plus, and CP650

To set the NA10, DMA8Plus, and CP650 (or other cinema sound processor):

Enter the following default IP addresses, or enter your own settings
(x = auditorium number):

NA10   192.168.x.130

DMA8Plus   192.168.x.131

CP650   192.168.x.132

Enter your settings using the setup software shipped with each of these units following the instructions in the respective documentation.

Note: Your entries must match the corresponding settings in the Config script. For more information, see Configuring the System for a Single Auditorium on page 25 and Configuring the System for Multiple Auditoriums on page 29.

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3.6.2   Configure the Digital Projector

In a Dolby Digital Cinema auditorium network, the digital projector connects to the auditorium switch, as shown in Figure 1-1. The Dolby Digital Cinema system supports basic Ethernet cues (lamp and douser) for the digital projector.

TI DLP Projector Setup

To configure the projector's IP addresses, use the projector's setup software. The primary address for Digital Cinema is the TI DLP™ head address that is used for subtitle delivery, but most projectors also include a controller module with its own IP address. This may be referred to as the touch panel controller (TPC) or projector. This OEM controller module is used for projector automation cues, and must be set properly.

Enter the following default IP addresses or enter your own settings (x = auditorium number):

Projector controller module   192.168.x.134

TI DLP head   192.168.x.133
(subtitles)

Enter your settings using the projector setup software following the instructions in the respective documentation.

Note: Your entries must match the corresponding settings in the Config script. For more information, see Configuring the System for a Single Auditorium on page 25 and Configuring the System for Multiple Auditoriums on page 29.

For detailed information on the projector settings, please contact the projector manufacturer.

3.6.3   Set the Time Zone

To set the time zone using the Show Manager Client interface:

1. Log in to Show Manager as `manager` or `installer` and go to **System** mode.
2. Ensure that the Show Player is visible in the Show Manager Client.
3. Go to the **Log** tab. You should see a Show Player in the list.
4. Go to the **Theatre** properties tab.
5. Click the **Set Time Zone**... button.
6. Choose the closest city from the provided table.
7. Click **OK**.

3.6.4 Default IP Addresses in a Single Auditorium Network

Figure 3-13 shows the default static IP addresses for all the units in a single screen auditorium network. Also shown is an optional Show Manager Client (running on a remote PC). To run the client in a remote location (for example, the manager's office), both the Show Store and the PC must be connected to the optional theatre network switch. As a result, authorized users can manage the system from the remote location using Show Manager.
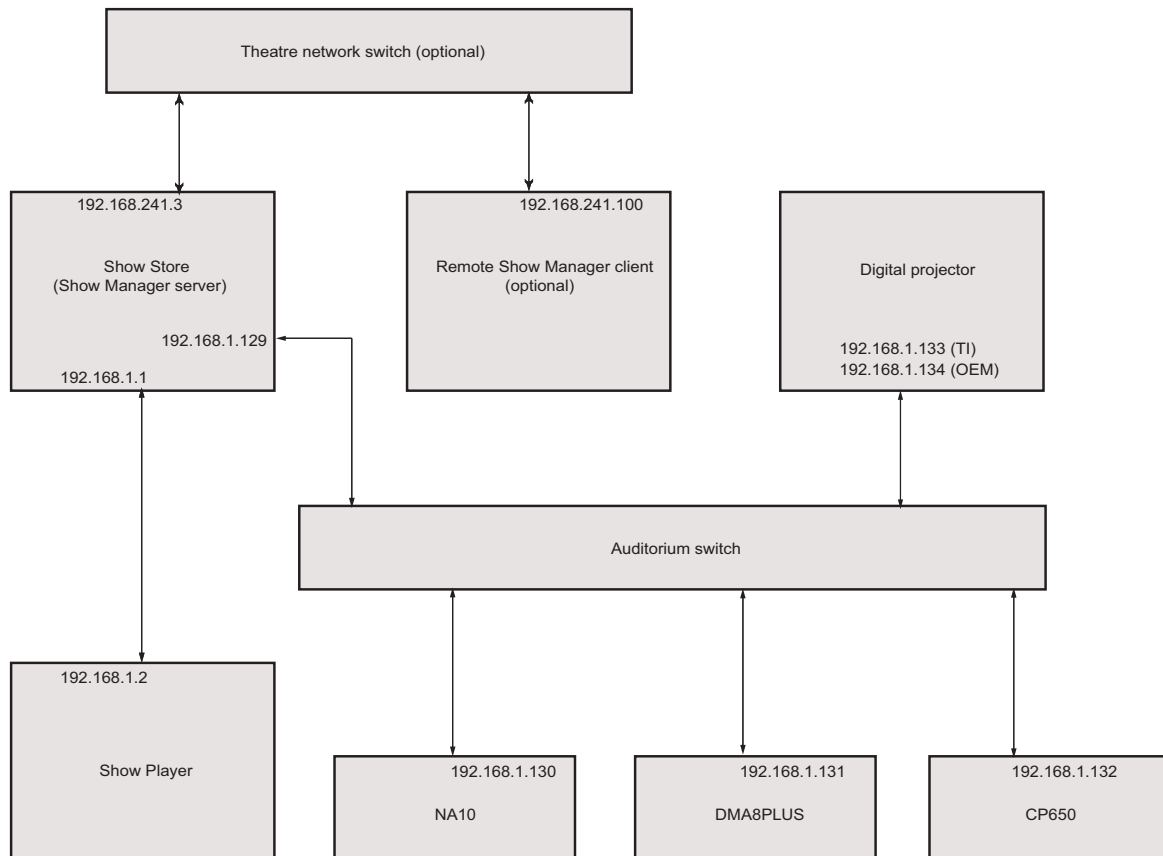
Figure 3-13 Default IP Addresses in a Single Auditorium Network

3.6.5 Default IP Addresses in a Multiple Auditorium Network

For multiple screens, each auditorium network uses the same default IP addresses shown above for a single auditorium, except for the third field, which represents the auditorium number. For example, a Show Store in a single auditorium network uses a default IP address of 192.168.1.129. In a multiple auditorium network, the Show Store in auditorium 1 also uses a default IP address of 192.168.1.129, but each of the Show Stores in the other auditoriums must use a unique screen number. For example, the Show Store in auditorium 2 can use a default IP address of 192.168.2.129, the Show Store in auditorium 3 can use 192.168.3.129, and so on. In a multiple screen environment, a theatre network switch is required to interconnect all of the auditoriums by connecting to the Show Store in each auditorium (in addition to any remote PCs). If the multiplex has more than three auditoriums, a stand-alone Show Store (Show Manager Server) must also connect to the theatre network switch (see Connecting Multiple Auditoriums to a Theatre Network on page 18). As a result, authorized users can manage any of the screens from a remote location using Show Manager.

Network Settings Summary

For an auditorium number specified as x, the system uses the IP addresses in Table 3-1.

Table 3-1   Network Settings

Component	IP Address	Net Mask	Default Gateway/Router
Show Player	192.168.x.2	255.255.255.128	192.168.x.1
NA10	192.168.x.130	255.255.255.128	192.168.x.129
DMA8Plus	192.168.x.131	255.255.255.128	192.168.x.129
CP650	192.168.x.132	255.255.255.128	192.168.x.129
TI DLP projector head	192.168.x.133	255.255.255.128	192.168.x.129
OEM projector (controller)	192.168.x.134	255.255.255.128	192.168.x.129
Show Store/Show Player network	192.168.x.1	255.255.255.128	N/A
Show Store auditorium network	192.168.x.129	255.255.255.128	N/A
Show Store theatre network	192.168.241.(x +2)	255.255.255.0	N/A
Show Manager Server (stand-alone Show Store that does not play content) on theatre network	192.168.241.2	255.255.255.0	N/A
Show Manager Client or utility PC on theatre network	192.168.241.y (where y is any unused number on the theatre network	255.255.255.0	192.168.241.(x+2)

Configuring the System for a Single Auditorium

If you are using all the semi-automatic default settings, you do not have to run the Config script for a single auditorium installation and you can proceed to Set Screen (Auditorium) Number on Show Player Rear Panel on page 34.

To customize your network settings using the Config script:

1. Boot up the system. Once it is up and running, continue to step 2.

2. Press <Ctrl> + <Alt> + <F1>.

> **Note:** On some smaller keyboards you may need to press <F-Lock> to enable the dual-use key function.

The Show Store console displays the default Show Store auditorium number (1) and the login prompt.

3. Log in to the Show Store using the special username `config`.

4. Enter the configuration password: <Obtain the password from Dolby>.

   The **Configuration** screen appears, as shown in Figure 3-14. You can exit the script at any time by pressing <Esc> without changing any settings.

```
                    CONFIGURATION
This script configures a Dolby Show Store for networking in a
multi-auditorium environment, and allows setting the keyboard layout
and language. It also allows network settings to be manually
overridden. You may hit ESC to exit the process and discard your
changes.


                    <  OK  >
```
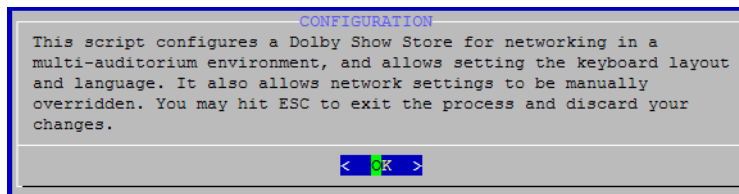
Figure 3-14 Config Script Welcome Screen

5. Press <Enter>.

   The **Show Manager** screen appears, which asks if this Show Store will run the Show Manager Server, as shown in Figure 3-15. The default is **Yes**.

```
                    SHOW MANAGER
Will this Show Store run the Show Manager Server? [yes] :




         < Yes >              < No  >
```
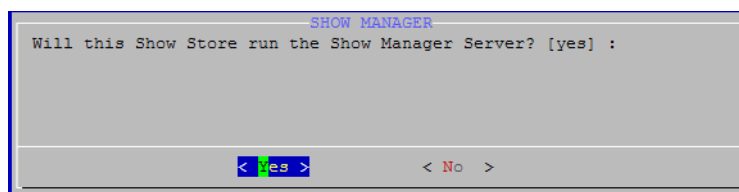
Figure 3-15 Show Manager Screen

6. Press <Enter> to run the Show Manager Server on this Show Store.

   The **Auditorium List** screen appears, as shown in Figure 3-16.
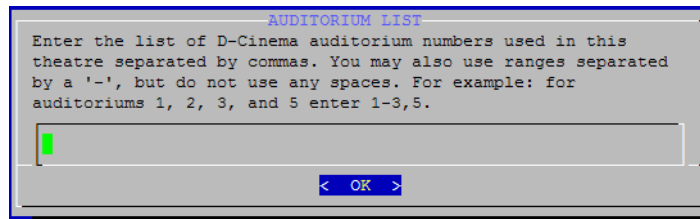
Figure 3-16   Auditorium List Screen

Enter 1 to use the default setting for a single auditorium and press <Enter>, or enter the desired auditorium number to customize this setting, and press <Enter>.

The **Show Store** screen appears and asks whether this machine will run the Show Store application. The Show Store application is required for configurations where the Show Store is connected to a Show Player.
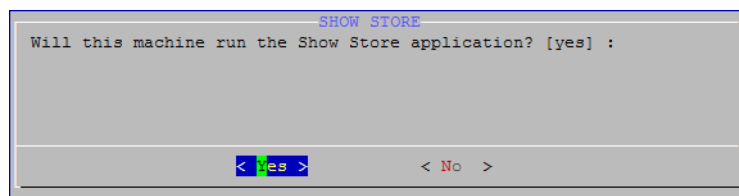
Figure 3-17   Show Store Screen

7. Press <Enter> to select **Yes** (default).

    The **Auditorium Number** screen appears, as shown in Figure 3-18.
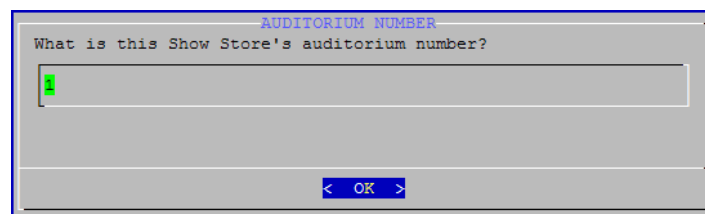
Figure 3-18   Auditorium Number Screen

8. Press <Enter> to select the default setting (1) for a single auditorium, or enter the desired auditorium number to customize this setting, and press <Enter>.

    The **Network Settings** screen appears, which asks if you want to override any network settings, as shown in Figure 3-19.
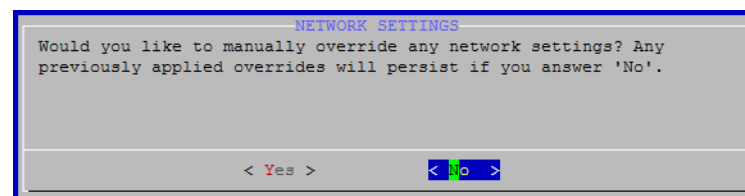
Figure 3-19   Network Settings Screen

- If you want to use the semi-automatic (auto) network settings, press <Enter> to select **No** and display the **Language Selection** screen (as shown in Figure 3-21), and immediately proceed to step 12. This configuration specifies the default network settings for a single auditorium, with no overrides.
- If you want to override the automatic settings, press <Tab> to select **Yes**, then press <Enter> to display the **Manual Configuration for Show Store** screen (as shown in Figure 3-20), and immediately proceed to step 9. In this screen, you can select the network setting(s) you want to override, and then enter the desired custom setting(s).


```
┌────────────────MANUAL CONFIGURATION FOR SHOW STORE────────────────┐
Please select your choice to modify the settings on the Show Store.

       1   Configure Show Player network interface [auto]
       2   Configure Auditorium network interface [auto]
       3   Configure Theatre network interface [auto]
       4   Configure Show Player IP address [auto]
       5   Configure NA10 IP address [auto]
       6   Configure Projector DLP IP address [auto]
       7   Configure Projector Control IP address [auto]
       8   Configure CP650 IP address [auto]
       9   Configure DMA8 IP address [auto]
       10  Advanced configuration
       D   Discard Changes and continue with configuration
       S   Save Changes and continue with configuration




                           <Select>
```

Figure 3-20   Manual Configuration for Show Store Screen

9. Press the up/down arrow keys to select a network setting that you want to override, then press **Select**.

10. Enter the desired custom setting, then press <Tab> to select **OK** for that setting.

    Your custom setting replaces the word **auto** in the brackets next to that setting.

11. Repeat steps 9 and 10 for each setting you want to override, then use the up/down arrow keys to select **Save Changes and continue with configuration**, and select **OK** in the confirmation dialog box.

    If you do not want to make any changes, select **Discard Changes and continue with configuration**, and select **OK** in the confirmation dialog box.

    The **Language Selection** screen appears, as shown in Figure 3-21.


```
┌─────LANGUAGE SELECTION─────┐
Select the language and
keyboard layout desired.

       1   English
       2   French
       3   German
       4   Italian
       5   Spanish






                  <Select>
```

Figure 3-21   Language Selection Screen

12. Use the arrow keys to select your language, then press <Enter>. The default is **English**.

    If you did not change the default network settings, a message informs you that the Config script will exit with no changes made. Press **OK** to exit.
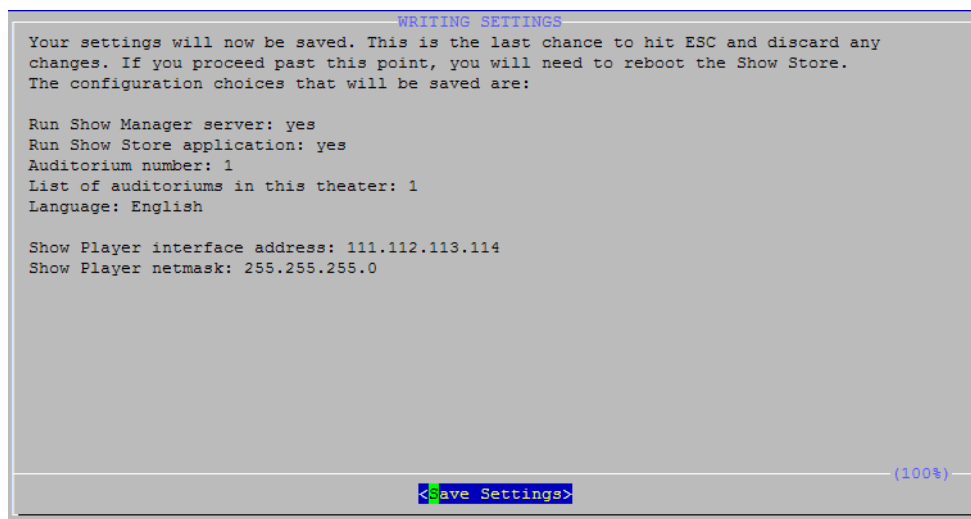
    If you changed any of the default settings, the **Writing Settings** screen displays your settings, as shown in the example in Figure 3-22.

```
                              WRITING SETTINGS
  Your settings will now be saved. This is the last chance to hit ESC and discard any
  changes. If you proceed past this point, you will need to reboot the Show Store.
  The configuration choices that will be saved are:

  Run Show Manager server: yes
  Run Show Store application: yes
  Auditorium number: 1
  List of auditoriums in this theater: 1
  Language: English

  Show Player interface address: 111.112.113.114
  Show Player netmask: 255.255.255.0




                                                                    (100%)
                              <Save Settings>
```

Figure 3-22   Writing Settings Screen

If you want to save your settings, press <Enter>. If not, press <Esc>.

The system can take 30 seconds or more to save your settings.

If you don't save your settings, a message informs you that the Config script will exit with no changes made. Press **OK** to exit. At this point, if you want to change your settings, you'll need to restart the config script and repeat steps 1–12.

13. Reboot the system by selecting <Ctrl> + <Alt> + <Delete>.

    When the system completely reboots, the configuration is completed and you can proceed to Set Screen (Auditorium) Number on Show Player Rear Panel on page 34.

Note: If you changed the auditorium (screen) number or customized any other network settings using the Show Store Config script, you may need to update the Show Player, NA10, CP650, DMA8Plus, and digital projector network settings manually, as they may no longer match the settings on the Show Store (see Configuring Single Auditoriums and Multiple Auditoriums on page 21). If you changed the auditorium number, you must also change the screen number on the Show Player rear panel to match your custom setting.

Configuring the System for Multiple Auditoriums

To configure each Dolby Digital Cinema system for multiple auditoriums (using the Config script):

1. Boot up the system. Once it is up and running, continue to step 2.
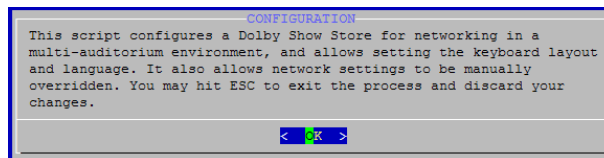2. Press <Ctrl> + <Alt> + <F1>.

> **Note:** On some smaller keyboards you may need to press <F-Lock> to enable the dual-use key function.

The Show Store console displays the default Show Store auditorium number (1) and the log-in prompt.

3. Log in to the Show Store using the special username config.
4. Enter the configuration password: <Obtain the password from Dolby>.

The **Configuration** screen appears, as shown in Figure 3-23. You can exit the script at any time by pressing <Esc> without changing any settings.


```
                           CONFIGURATION
 This script configures a Dolby Show Store for networking in a
 multi-auditorium environment, and allows setting the keyboard layout
 and language. It also allows network settings to be manually
 overridden. You may hit ESC to exit the process and discard your
 changes.


                             <  OK  >
```

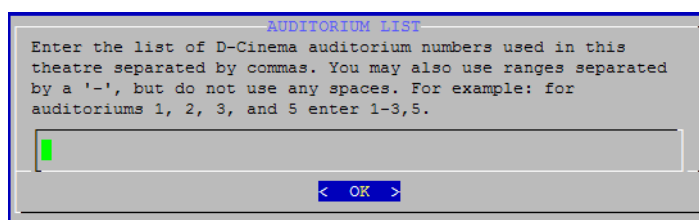**Figure 3-23** Config Script Welcome Screen

5. Press <Enter>.

The **Show Manager** screen appears, which asks if this Show Store will run the Show Manager Server, as shown in Figure 3-24. The default is **Yes**.


```
                         SHOW MANAGER
 Will this Show Store run the Show Manager Server? [yes] :




         < Yes >              < No  >
```
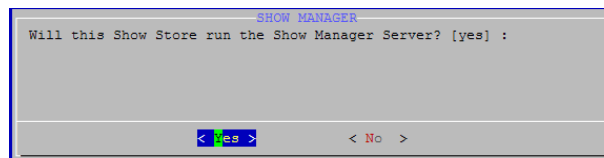
Figure 3-24 Show Manager Screen

- If you want to run the Show Manager Server on this Show Store, press <Enter> to display the **Auditorium List** screen, then proceed immediately to step 6.
- If you do not want to run the Show Manager Server on this Show Store, press <Tab> to select **No**, then press <Enter>. When you select **No**, you are prompted for this Show Store's auditorium number, as shown in Figure 3-27. After you enter an auditorium number for this Show Store, you need to enter the auditorium number of the Show Store running the Show Manager Server and proceed to step 9. If there are more than three auditoriums, enter 0 for the stand-alone Show Store running the Show Manager Server. This screen also says that when the Show Manager Server theatre interface is configured manually, you need to enter manual (instead of the auditorium number). If you enter manual, the **Network Settings** screen and then the **Manual Configuration for Show Store** screen appear in the sequence shown in Figure 3-28 and Figure 3-29, but with an additional field for entering the Show Manager Server theatre interface IP address. For complete details on this type of configuration, contact your IT department.
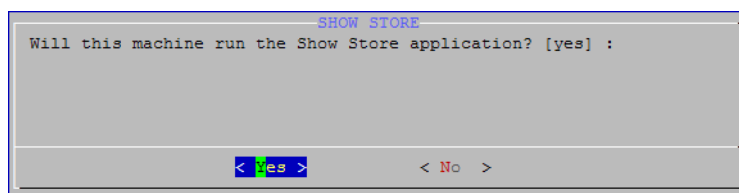
The **Auditorium List** screen appears, as shown in Figure 3-25.

```
┌──────────────────AUDITORIUM LIST──────────────────┐
│ Enter the list of D-Cinema auditorium numbers used in this │
│ theatre separated by commas. You may also use ranges separated │
│ by a '-', but do not use any spaces. For example: for │
│ auditoriums 1, 2, 3, and 5 enter 1-3,5. │
│ ┌─────────────────────────────────────────────┐ │
│ │                                               │ │
│ └─────────────────────────────────────────────┘ │
│                                                    │
│                    < OK > │
└────────────────────────────────────────────────────┘
```

Figure 3-25   Auditorium List Screen

6. Follow the onscreen instructions to enter the list of Dolby Digital Cinema auditorium numbers, then press <Enter> to select **OK** for your entries.

   The **Show Store** screen appears and asks whether this machine will run the Show Store application. The Show Store application is required for configurations where the Show Store is connected to a Show Player. For configurations with more than three Dolby Digital Cinema auditoriums, the stand-alone Show Store running the Show Manager Server is not connected to a Show Player.

```
┌──────────────────SHOW STORE──────────────────┐
│ Will this machine run the Show Store application? [yes] : │
│                                                │
│                                                │
│                                                │
│        < Yes >              < No > │
└────────────────────────────────────────────────┘
```
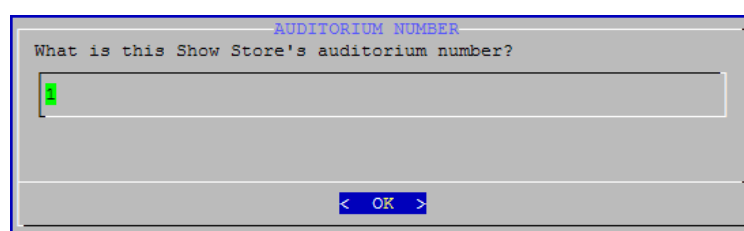
Figure 3-26   Show Store Screen

7. Press <Enter> to select **Yes** (default) if there are less than three auditoriums or press <Tab> to select **No** if there are more than three auditoriums.

   If you select **Yes,** the **Auditorium Number** screen appears, as shown in Figure 3-27.
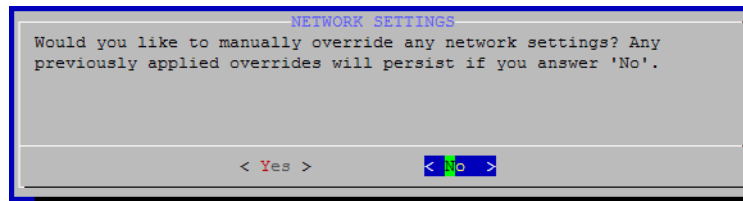
   If you select **No**, the **Network Settings** screen appears, as shown in Figure 3-28. If you do not want to change the network settings, proceed immediately to step 9. If you want to change the network settings, proceed immediately to step 10.

```
┌──────────────────AUDITORIUM NUMBER──────────────────┐
│ What is this Show Store's auditorium number? │
│ ┌─────────────────────────────────────────────┐ │
│ │ 1                                             │ │
│ └─────────────────────────────────────────────┘ │
│                                                    │
│                    < OK > │
└────────────────────────────────────────────────────┘
```

Figure 3-27   Auditorium Number Screen

8. Enter the auditorium number for this Show Store and press <Enter>.

The **Network Settings** screen appears, which asks if you want to override any network settings, as shown in Figure 3-28.
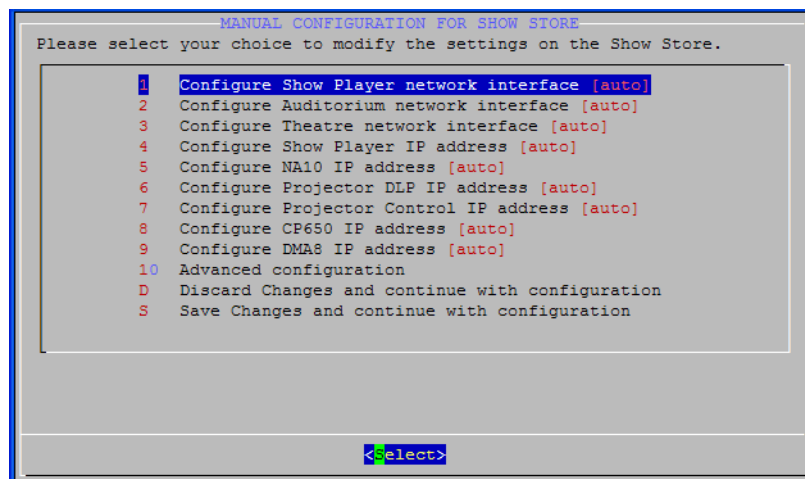
```
                         ┌─NETWORK SETTINGS─────────┐
                         Would you like to manually override any network settings? Any
                         previously applied overrides will persist if you answer 'No'.



                                  < Yes >          < No  >
```

Figure 3-28   Network Settings Screen

9. If you want to use the semi-automatic (auto) network settings, press <Enter> to select **No** and display the **Language Selection** screen (as shown in Figure 3-30), and immediately proceed to step 14.

    This configuration specifies the default network settings for each auditorium, with no overrides.

10. If you want to override the semi-automatic settings, press <Tab> to select **Yes**, then press <Enter> to display the **Manual Configuration for Show Store** screen, as shown in Figure 3-29 (and immediately proceed to step 11).

    In this screen, you can select the network setting(s) you want to override, and then enter the desired custom setting(s).

```
           ┌─────MANUAL CONFIGURATION FOR SHOW STORE───────────┐
           Please select your choice to modify the settings on the Show Store.

                   1   Configure Show Player network interface [auto]
                   2   Configure Auditorium network interface [auto]
                   3   Configure Theatre network interface [auto]
                   4   Configure Show Player IP address [auto]
                   5   Configure NA10 IP address [auto]
                   6   Configure Projector DLP IP address [auto]
                   7   Configure Projector Control IP address [auto]
                   8   Configure CP650 IP address [auto]
                   9   Configure DMA8 IP address [auto]
                   10  Advanced configuration
                   D   Discard Changes and continue with configuration
                   S   Save Changes and continue with configuration



                               <Select>
```

Figure 3-29   Manual Configuration for Show Store Screen

11. Press the up/down arrow keys to select a network setting that you want to override, then press **Select**.

12. Enter the desired custom setting, then press <Tab> to select **OK** for that setting.

    Your custom setting replaces the word **auto** in the brackets next to that setting.

13. Repeat steps 11 and 12 for each setting you want to override, then use the up/down arrow keys to select **Save Changes and continue with configuration**, and select **OK** in the confirmation dialog box.

    If you do not want to make any changes, select **Discard Changes and continue with configuration**, and select **OK** in the confirmation dialog box.

The **Language Selection** screen appears, as shown in Figure 3-30.

Figure 3-30   Language Selection screen

14. Use the arrow keys to select your language, then press <Enter>. The default is **English**.

    If you did not change the default network settings, a message informs you that the Config script will exit with no changes made. Press **OK** to exit.

    If you changed any of the default settings, the **Writing Settings** screen displays your settings, as shown in the example in Figure 3-31.
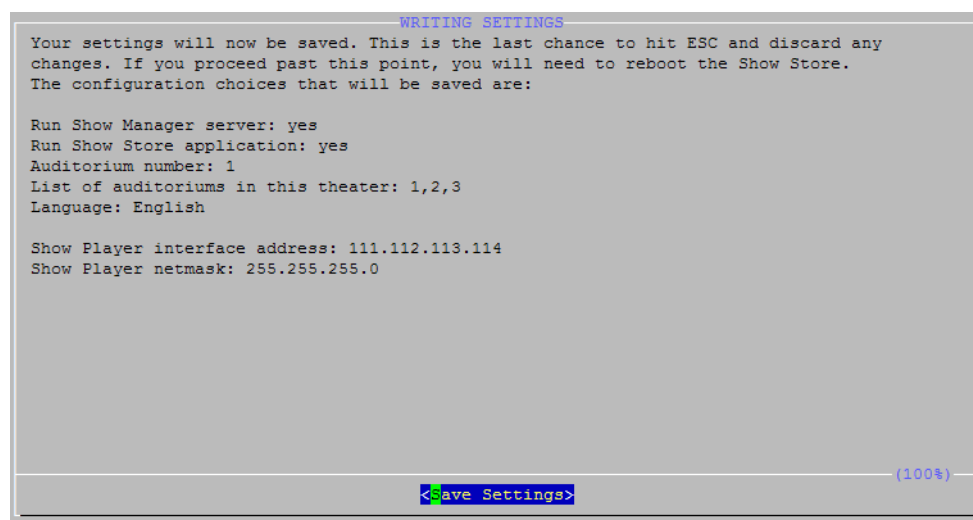
Figure 3-31   Writing Settings screen

15. If you want to save your settings, press <Enter>. If not, press <Esc>.

    The system can take 30 seconds or more to save your settings.

    If you don't save your settings, a message informs you that the Config script will exit with no changes made. Press **OK** to exit. At this point, if you want to change your settings, you'll need to restart the Config script and repeat steps 1–14.

16. Reboot the system by selecting <Ctrl> + <Alt> + <Delete>.

When the system completely reboots, the configuration is completed and you can proceed to Set Screen (Auditorium) Number on Show Player Rear Panel on page 34.

Note: If you changed the auditorium (screen) numbers or customized any other network settings using the Show Store Config script, you may need to update the Show Player, NA10, CP650, DMA8Plus, and digital projector network settings manually, as they may no longer match the settings on the Show Store (see Configuring Single Auditoriums and Multiple Auditoriums on page 21). If you changed the auditorium numbers, you must also change the screen number on each Show Player's rear panel to match your custom settings.

Set Screen (Auditorium) Number on Show Player Rear Panel

Before you power up the system, you need to specify a unique screen number for each Show Player. The screen number associates the Show Store in each auditorium with all the other equipment in that auditorium, including the Show Player.

In a single-screen installation, 1 is the default screen number (01 using the Show Player screen number selectors). For a multiple-screen installation, each auditorium must have a unique screen number, as described in the following sections. This critical setting ensures that Show Manager playlists route the correct content to each screen. For information on using Show Manager, refer to the Show Manager online Help system.

Single Screen Installations

If you are using the semi-automatic (default) network settings, be sure the first two screen number selectors on the Show Player's rear panel are set to the default of 01. If you are using manual (custom) settings, and you used the Config script to change the screen number, set the screen number selectors to match your setting (for example 11). You may need to check the selectors to make sure the correct numbers are locked in (and not stuck between states).

Currently, the third screen number selector is not used and does not function.
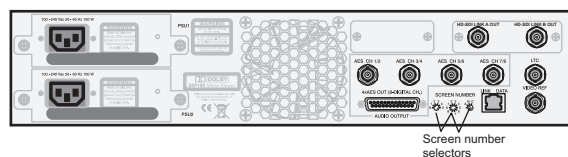
Figure 3-32   Show Player Screen Number Selectors

Multiple Screen Installations

Use the screen number selectors on each Show Player to select two unique numbers as the screen number for each auditorium. If you are using the semi-automatic (default) network settings, be sure the first two screen number selectors on the Show Player's rear panel are set to the respective screen number for each auditorium (for example, 01, 02, 03, 04, and so on). If you are using manual (custom) settings, and changed the screen number, set the screen number selectors to match your settings. The screen number differentiates each auditorium in a theatre complex from the other screens in the different auditoriums.

Note: We recommend using screen numbers that match the actual auditorium numbering used in the multiplex.

Using the Show Player to Change the Network Settings

If you changed any of the Show Players' network settings using the Config script, you must manually enter the same settings on each Show Player. To modify the Show Player network settings:

1. Reboot the Show Player by power cycling.

2. When the Show Player begins rebooting, press and hold the **enter** button.

   The Show Player Network Config screen appears. You can choose from two options, **Semi-Auto** mode and **Manual** mode, as shown in the examples in Figure 3-33. Semi-Auto mode is the default mode and you cannot change the Show Player's default network settings. In Semi-Auto mode, the third field (except for Net Mask) always represents the screen number specified by the Show Player's rear-panel screen number selectors. In this example, the screen number is 3, which represents auditorium 3 in a multiplex.

   In Manual mode, change the Show Player's default settings to match the settings you modified using the Config script. Be sure the third field also matches the screen number on the Show Player's rear panel (except for Net Mask).
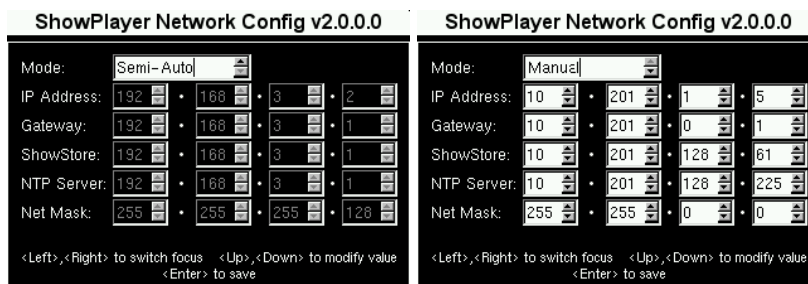
Figure 3-33   Show Player Network Config Screen

3. In Manual mode, use the Show Player ◄ and ► navigation buttons to move between fields, and the ▲ and ▼ navigation buttons to change the values, then press the Show Player **enter** button to save your configuration (as explained at the bottom of the screen).

4. Power cycle the Show Player(s) to reboot the unit(s).

   In a multiplex, it takes about five minutes for each auditorium to connect, as reflected in Show Manager.

3.6.6   Test the System

The Installation Test Kit includes the *Dolby Digital Cinema Test Charts* DVDs. These DVDs include test files to help you set up and calibrate a Dolby Digital Cinema system. Following are some of the included test files. For complete details, see the insert included with the DVDs.

- Rotating Pink Noise
- Channel Identification
- Rotating Sweep Tones
- Aspect Ratio Test Signal
- Focus and Framing Check
- Clips (*Perspective Trailer*, *Dolby Digital Cinema Trailer*)
- Masking Test Signals

Test the Show Player and Show Manager

Test the Show Player by using the User Control screen and the navigation buttons to play some of the provided clips. For details on the Show Player, refer to the user's manual. Use Show Manager to build a test show using the provided clips on the *Dolby Digital Cinema Test Charts DVD*, then test Show Manager using the Show Store's monitor, keyboard, and mouse. Be sure each clip starts and stops as scheduled and verify that all event cues operate correctly. For instructions on building and scheduling a show, please refer to the Show Manager online Help system.

3.6.7 Test Show Manager on All Screens in a Multiplex

Test the Show Manager Server to verify that it recognizes all the screens in the multiplex. Use Show Manager to build test shows using the provided Dolby clips on the *Dolby Digital Cinema Test Charts DVD*, then test Show Manager using the Show Store's monitor, keyboard, and mouse. Be sure each clip starts and stops as scheduled and verify that all event cues operate correctly. For instructions on building and scheduling a show, please refer to the Show Manager online Help system.

3.7   Configuring the System for 3D Presentations

To present 3D content, configure the system as follows:

1. Navigate to the Show Player **Setup**/**Playback Mode** menu.

    Three options appear: **2D**, **3D**, and **Dolby 3D**.

2. If the digital projector is installed with a Dolby 3D Digital Cinema system, select **Dolby 3D** (to ensure that the system uses the correct processing). For any other 3D projection system, select **3D**. To switch back to 2D, change the **Playback Mode** to **2D**. If you select the incorrect mode for the content to be played, an error message appears on the Show Player User Control screen.
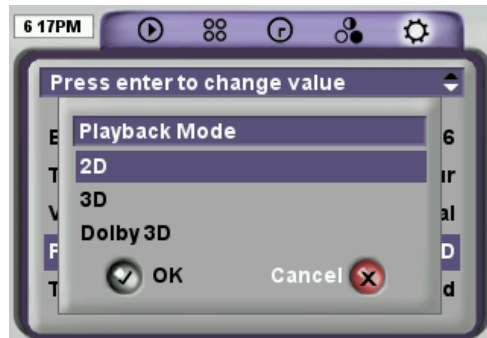
Figure 3-34   Switch Playback Mode

> **Note:**   When the system is in 3D mode, all playable content must run at 24 frames per second. To play content at other frame rates, you must switch back to **2D** mode.

3. Test the system by playing 3D content and checking 3D video and the associated audio. The Show Manager Monitor screen indicates whether a clip is 2D or 3D.

Troubleshooting a 3D System

If you cannot project shows in 3D, verify:

1. The digital projector is set for 3D playback.
2. The synchronizing equipment for 3D glasses is functioning.
3. The Show Player is configured for 3D mode.
4. The system is connected properly.
5. The projector is configured properly for 3D presentations.

System Maintenance

4.1 Show Player Diagnostics and Testing

You can perform a number of tests by checking the Dolby® Show Player's diagnostic LEDs and probing the test points, which are located in the hidden diagnostics compartment under the Show Player's front panel. To access the Show Player's diagnostics, take the following steps:

1. Use both hands to grasp the left and right sides of the Show Player's front panel and then pull it away from the unit, as shown in Figure 4-1.

Figure 4-1   Removing the Show Player's Front Panel

With the Show Player's front panel removed you can access the diagnostics compartment, as shown in Figure 4-2.
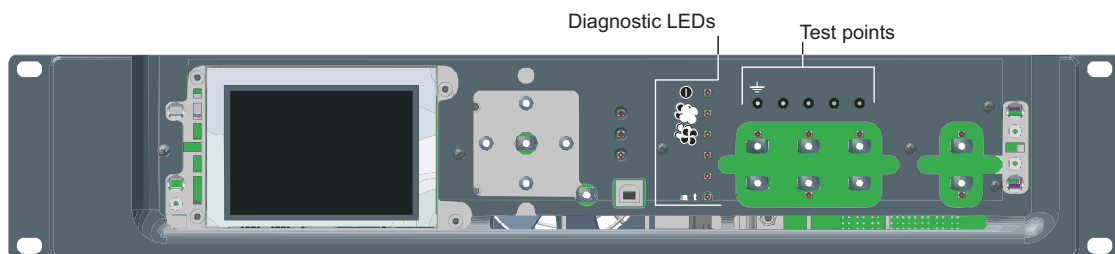
Figure 4-2   Show Player's Hidden Diagnostics Compartment

The Show Player's diagnostics compartment has six LEDs and five test points, which are defined in Table 4-1.

Table 4-1   Show Player Diagnostic LEDs and Test Points

LEDs and Test Points	Function
(power symbol)	Turns green if all power rails, both those from the power supply and those derived from them, are within tolerance. If they are not within tolerance, the LED is not illuminated.
(fan symbol)	Indicate whether the four cooling fans are working. The upper LED represents the front two fans and the lower LED represents the rear two fans. Each of the LEDs glows green when the fans are operating properly and glows red if they are not.
PSU1 PSU2	Indicates the status of the two power supplies. The Show Player has dual redundant power supplies (only one is required for operation). PSU1 is the power supply located in the upper slot and PSU2 is the power supply located in the lower slot. If a power supply is not installed, the corresponding LED is off. If the power supply is installed and working properly, the corresponding LED glows green. If the power supply is installed, but not working correctly, the corresponding LED glows red.
Fault	Indicates any catastrophic hardware errors, which can include a power hardware diagnostics failure, the failure of both fans, or the resetting of any of the processors. If a processor resets, the system reboots and the LED turns off after a short time.
(ground symbol) +5V +3V3 +12V -12V	All voltage rails from the power supply to the PCBs are provided on a set of 2 mm test jacks. If the (power symbol) LED is off, these jacks can be probed to determine if the rails from the power supplies are functioning properly. This can help to isolate the fault area.

2. When you are done using the hidden diagnostics compartment, replace the Show Player's front panel. Align the four mounting studs (located at each corner on the back of the panel) with the holes in the main unit, and then push the front panel back in place, as shown in Figure 4-3.
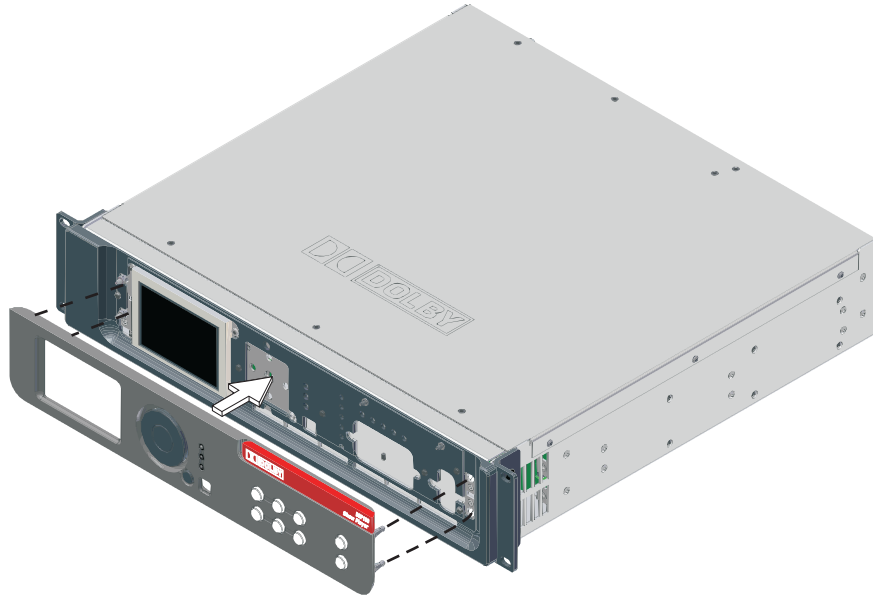
Figure 4-3   Reinstalling the Show Player Front Panel

4.2   Maintaining the Show Store Internal Hard Drives

If one of the Show Store's internal hard drives fails, its corresponding front-panel LED turns from green to red, as shown in the example in Figure 4-4.

Failed drive LED
(Drive 1)
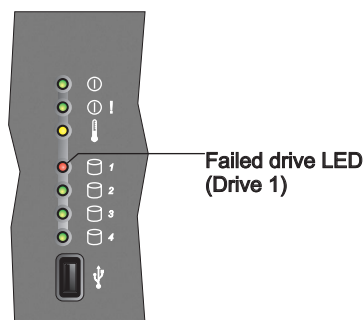
Figure 4-4   Identifying a Failed Drive in the Show Store

If a drive fails while a show is running, the show continues to run without interruption. If one drive fails, no information is lost. If a second drive fails before you replace the first failed drive, all information is lost (and any show in progress stops running). For this reason, you should replace a failed drive as soon as possible.

4.2.1   Replacing a Drive

To replace a Show Store internal hard drive:

1. Note the front-panel number that corresponds to the problem drive (the number next to the red LED).

2. Remove the Show Store's front panel by placing one hand on its left side and one hand on its right side, then pulling it toward you until it disengages from the main unit, as shown in Figure 4-5.
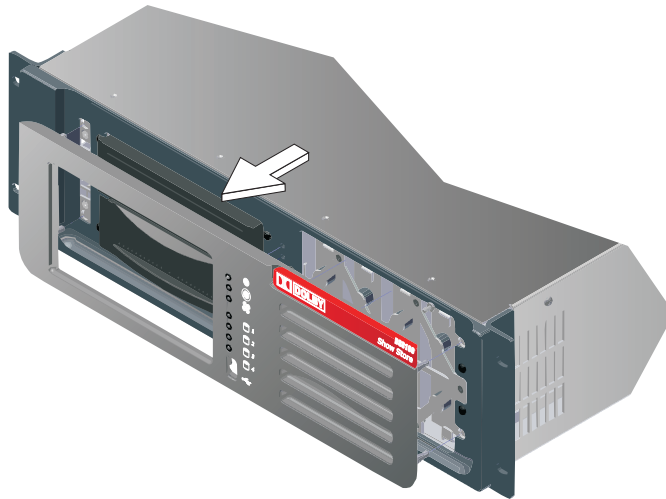
Figure 4-5   Removing the Show Store Front Panel

3. Use a Phillips screwdriver to remove the six screws that secure the retaining bracket covering the internal drives, then remove the bracket as shown in Figure 4-6.
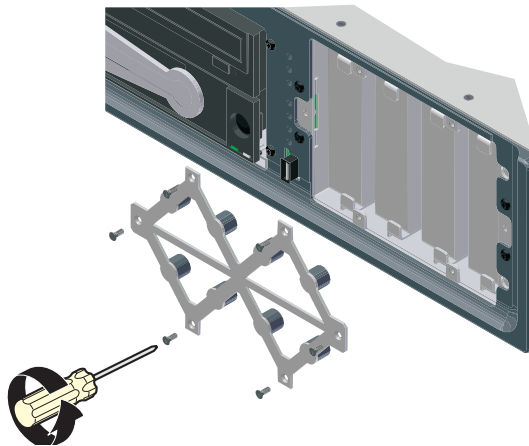
Figure 4-6   Removing the Show Store Retaining Bracket

Note: A drive LED may turn from green to red if one or more of the Show Store internal hard drives is dislodged during shipment or relocation. For this reason, before replacing a drive, be sure it is fully seated and re-seat if required. For reseating instructions, refer to the remaining steps in this procedure; reseating is similar to removing and inserting a replacement drive. After reseating, drive replacement may not be necessary.

4. Match the failed drive's number (noted in step 1) with the corresponding numbered internal drive, then grasp the drive's top and bottom finger tabs and slide it out of its slot, as shown in the example in Figure 4-7. The drives are numbered from left to right (1, 2, 3, 4).
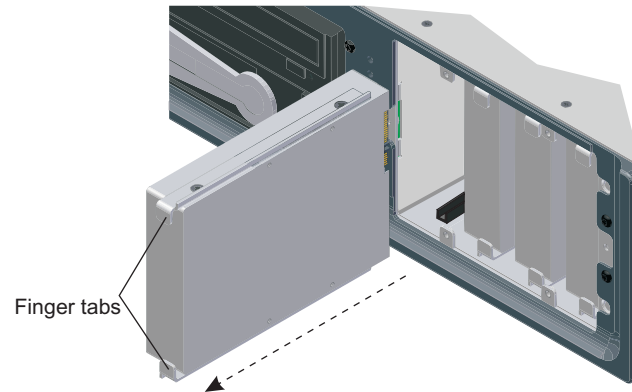
Finger tabs

Figure 4-7   Removing the Failed Drive from the Show Store

Be sure that no show is running, then grasp the replacement drive's top and bottom finger tabs, and firmly but gently slide the drive into its slot (see Figure 4-8) until you feel resistance, which indicates that the drive is seated in its socket.

You can replace a drive with a higher capacity unit but cannot replace it with a lower capacity unit.

Note: To insert properly, position the drive in the top guide rail first, and then slide the drive into its slot.
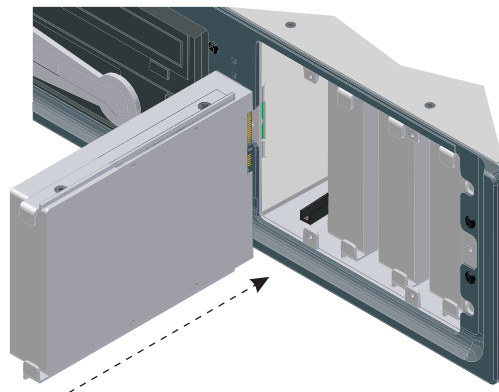
Figure 4-8   Inserting the Replacement Drive in the Show Store

5. Position the retaining bracket in front of the internal drives, lining it up with the screw holes, then use a Phillips screwdriver to reinstall its six screws and secure the drives, as shown in Figure 4-9.
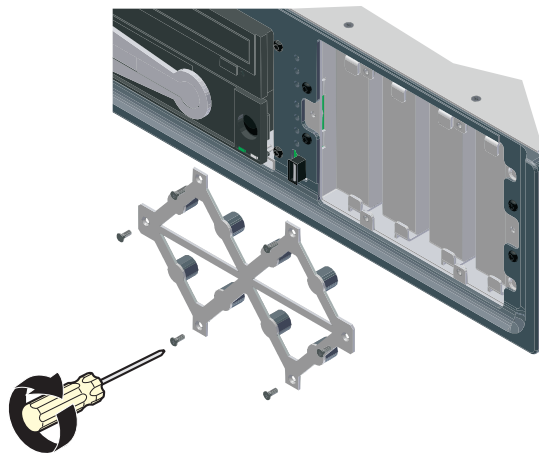
Figure 4-9   Reinstalling the Show Store Retaining Bracket

6. Grasp the front panel on its left and right sides, line up its four mounting studs with the main unit's four holes (one in each corner), then push until it snaps into place, as shown in Figure 4-10.
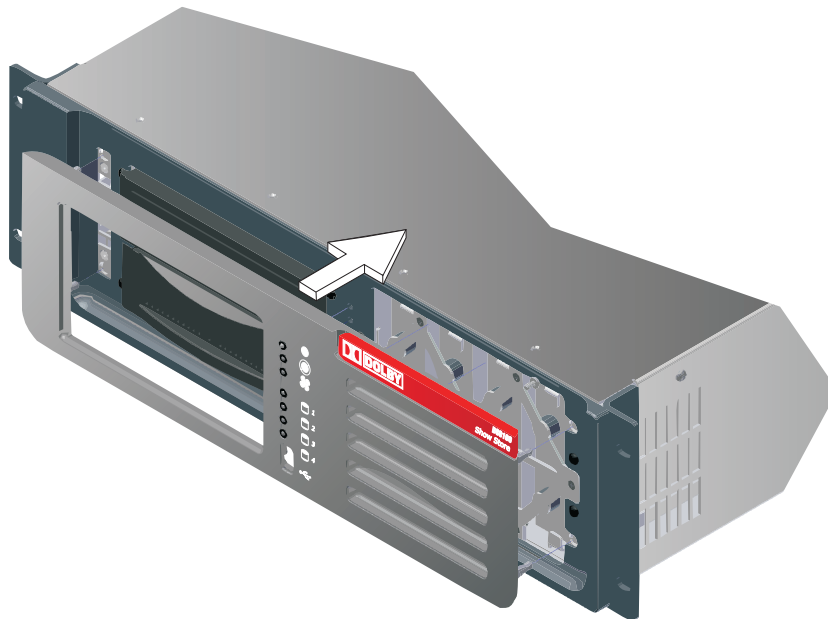
Figure 4-10   Reinstalling the Show Store Front Panel

Rebuild the replacement drive, as described in Rebuilding a Single Internal Drive on page 45.

4.2.2   Rebuilding a Single Internal Drive

The Show Store must have four internal drives installed before initiating a rebuild operation. This can take 2.5 hours or longer, so be sure no show is scheduled during this time (if possible, rebuild in the morning or overnight). If a single internal drive fails, and a user removes the wrong drive (with power on), all internal drives fail completely. In such a case, all the internal drives require rebuilding (see Rebuilding All Show Store Internal Drives on page 46).

To rebuild a Show Store internal hard drive:

1. Place the Show Store in an idle state by stopping playback of any shows, and waiting for the completion of any file transfers or other operations.

2. Note the number of the hard drive that failed (1, 2, 3, or 4) by checking the internal drive LEDs on the front panel for the corresponding red warning light.

3. Shut down the unit by disconnecting the power, then remove the failed drive from its slot following the instructions in R eplacing a Drive on page 42. If a replacement drive is available, follow the instructions to replace the drive.
   If a replacement drive is not available, or the drive has not permanently failed, you can rebuild the system without replacing the "failed" drive. In this case, you can rebuild with all four original drives in place.

4. Be sure a monitor and keyboard are connected to the Show Store, then reconnect the power.

5. Ignore the initial prompt to press <ALT> + <3> until the system recognizes the RAID drives, as displayed on the screen.

   At this point, the 3ware® Disk Array Configuration Utility launches and a warning message informs you that the internal drives (RAID) are now operating in a degraded mode. Press any key to continue.

6. Use the up/down arrow keys on the keyboard to highlight **Port x** (x = port number of the drive you're rebuilding), then press the space bar to display an asterisk (*****).

   If you're not replacing the failed drive with a new drive, but just rebuilding it, the port number for that drive does not appear.

7. Use the up/down arrow keys on the keyboard to highlight the **Unit 0 line**, then press the space bar to display an asterisk (*****).

8. Use the <Tab> key to move to the **Maintain Unit** button, then press <Enter>.

9. Use the arrow keys to select **Rebuild** in the pop-up menu, then press <Enter>.

10. Select **OK** to confirm the rebuilding process, then press <Enter>.

11. Press <F8>.

> **Note:**   On some smaller keyboards you may need to press <F-Lock> to enable the <F8> function for the dual-use keys.

12. Select **Yes** at the prompt to save the configuration.

13. Reboot the system.The screen blanks and the Show Store begins its normal boot process using the three functioning internal drives.

   The internal drives begin rebuilding automatically a few minutes after the Show Store boots up. While rebuilding, the LEDs blink intermittently in green, but may also illuminate in red. This is normal and does not indicate a problem.

   When the rebuilding process is completed, the internal drive LEDs stop blinking, and the red LED on the Show Store front panel turns green.

4.3   Rebuilding All Show Store Internal Drives

This section explains how to restore the Show Store internal drives to normal operation in any of the following situations:

- Upgrading the Show Store storage capacity by replacing all four internal drives.
- Replacing a single internal drive with a lower capacity than the other three drives. This enables the internal drive to be re-created when the only available replacement drive is smaller than the other internal drives.
- Replacing two or more failed hard drives when all internal content is lost.
- Restoring a unit to operability after removing two internal drives, or removing the wrong hard drive following a drive failure.

4.3.1   Indication of a Multidrive Failure

If multiple red LEDs appear on the Show Store front panel, this indicates a multidrive failure. In some cases, the Show Store may boot improperly, with no illuminated red LEDs.

4.3.2   Possible Causes of a Multidrive Failure

If one hard drive fails and is not replaced in a timely manner, a second failed drive results in an entirely inoperable system. We recommend replacing a drive as soon as possible after a single red LED illuminates.

If a single internal drive fails, and a user removes the wrong drive (with power on), all internal drives fail completely. In such a case, all the internal drives require rebuilding.

4.3.3   Rebuilding the Internal Drives

It is necessary to replace all internal hard drives that completely and permanently fail. Functioning drives that are removed from the Show Store while the power is on can still be used. If you are not sure that a drive is functioning properly, replace it with the power off.

To rebuild the internal drives:

1. Be sure a keyboard and monitor are connected to the Show Store.
2. Turn off power to the Show Store.
3. When there are four functional internal drives in the Show Store, turn the power on.

   During the boot process, the computer screen displays `RAID 3Ware` or similar text in the upper left-hand corner of the screen.
4. Immediately press <ALT> + <3>, and then press <Enter>.

   The 3ware RAID Configuration screen should appear. If this screen does not appear, disconnect the power to the Show Store, reboot, and start again.

5. When the 3ware RAID Configuration screen appears, be sure there is no message displaying previous RAID arrays (`Units`) or incomplete drives. Following are some examples of this type of message:

   ```
   Unusable Arrays:
   Unit 0 – 4 drive 64k RAID 5     335.24GB Missing drives
   ```

   or

   ```
   Incomplete Drives and Others:
   Port 1 – Maxtor 6Y080M0         76.33GB Unconverted DCB
   ```

   If there are any `Units` or `Incomplete Drives` displayed, delete them. Only a list of drives (Port 0 through Port 3) should appear under the `Available Drives` text.

6. Highlight the first drive and press <Enter> (an asterisk appears next to the drive).

7. Press the down arrow to select the next drive, then press <Enter>. Repeat this action for each drive until all four drives are selected (indicated by an asterisk next to each drive).

8. Use the arrow keys to highlight `Create Unit,` then press <Enter>.

9. Highlight `Select RAID configuration`, press <Enter>, then select `RAID 5` and press <Enter>.

10. Highlight `OK` and press <Enter>. A summary of the changes appear.

11. Press <F8> to complete the configuration.

4.3.4   Installing the Show Store Software

To install the Show Store software:

1. Insert the *DSS100 System Controller Software* CD in the CD/DVD-ROM drive.

2. Type `y` to update the configuration. At this point the Show Store boots from the CD.

3. When the Show Store reboots, note that it is booting from the CD. If not, enter the BIOS settings and check that the first boot device is set to `DVD ROM`.

   The installation process begins automatically and completes in approximately 15 to 25 minutes. During the installation the front-panel temperature LED provides the following progress status information.

   • Phase 1: Initializing the RAID system. The temperature LED blinks once every two seconds. This phase lasts approximately 20 seconds.

   • Phase 2: Copying the operating system to the Flash drive. The temperature LED blinks three times every two seconds. This phase lasts approximately 20 minutes.

   • Phase 3: Copying the application to the Flash drive. The temperature LED blinks four times every two seconds. This phase lasts approximately 20 seconds.

   • Phase 4: Completion. The temperature LED glows in solid green.

4. After completion, simply turn the power off, wait five seconds, and then turn the power back on.

4.3.5 Installing Show Manager Software

To install the Show Manager Software:

1. Insert the *Show Manager Software Installation* CD in the CD/DVD-ROM drive.
2. Reboot the Show Store. The software installation begins automatically.
3. After the software is installed, remove the CD and reboot the Show Store.

4.3.6 Final Operations

At this point the Show Store is ready for content reloading.

Note: Previously loaded license keys do not require reloading for the corresponding content. If you reload such licenses, a message indicates that no new licenses were loaded because they are already loaded on the Show Player.

4.4 Replacing a Show Store Power Supply

The Show Store requires only one power supply; a second unit is provided for backup. If a problem occurs with either of these redundant power supplies, the power failure indicator LED on the front panel changes from green to flashing red (see Figure 4-11) and a warning buzzer sounds. You can replace a failed power supply during a show, but to avoid accidentally removing the wrong unit, wait until the theatre is empty (as the system continues operating with one power supply). The Dolby Cat. No. for each of your Show Store's power supplies is identified by a label affixed to the right side of each unit.
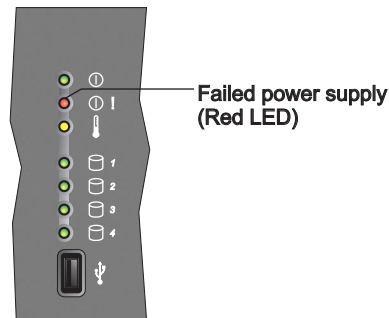
Figure 4-11   Show Store Front-Panel Power Supply Indicator

To replace a Show Store power supply:

1. Identify the failed unit in the rear panel by its non illuminated LED, as shown in Figure 4-12.
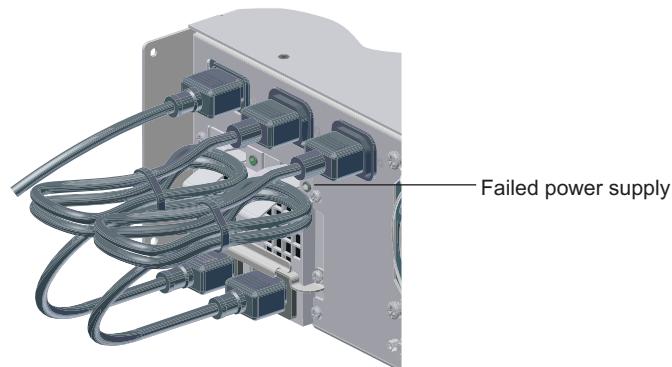
Figure 4-12   Show Store Rear-Panel Failed Power Supply

2. Press the red button to turn off the buzzer, and disconnect the failed power supply's AC power, as shown in Figure 4-13.
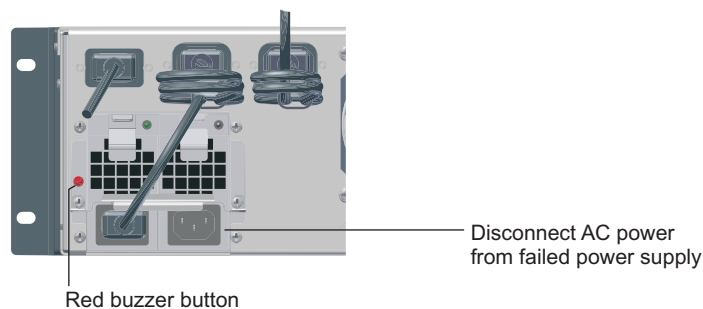
Figure 4-13   Turn Off Buzzer and Disconnect AC Power

3. Use a Phillips screwdriver to remove the retaining clip's two screws, then pull the clip away from the rear panel to remove it, as shown in Figure 4-14.
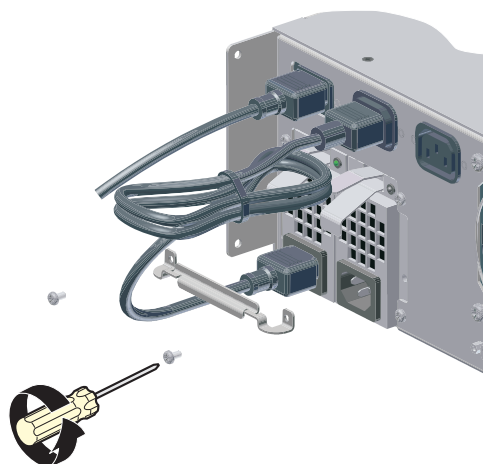
Figure 4-14   Removing the Retaining Clip

4. Grasp the pinch lever at the top of the failed power supply, then pull the unit out of the Show Store, as shown in Figure 4-15. Each unit is labeled with its Dolby Cat. No.
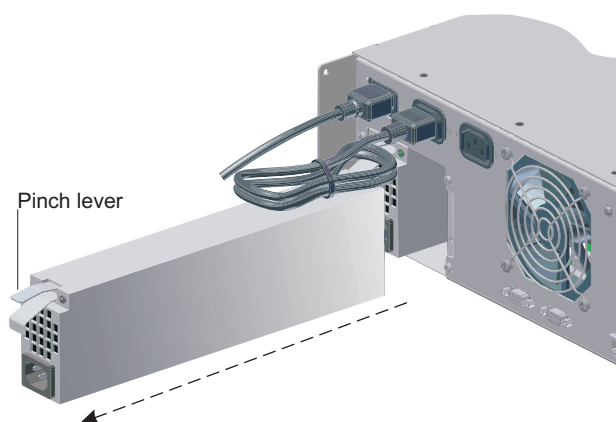
Figure 4-15   Removing the Failed Power Supply

5. Position the replacement power supply squarely within its slot, as shown in Figure 4-16, then push it along the guiding surface until it snaps into place. You should hear a click when it seats properly in the rear panel.
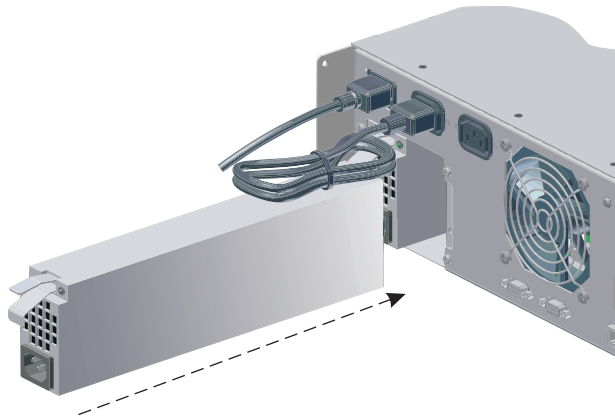
Figure 4-16   Inserting the Replacement Power Supply

6. Use a Phillips screwdriver to reinstall the retaining clip with its two screws, as shown in Figure 4-17.
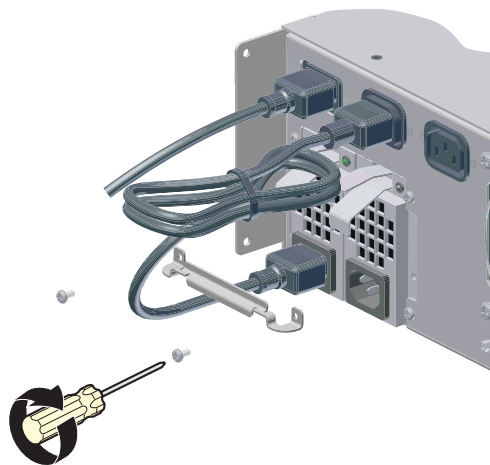
Figure 4-17   Reinstalling the Retaining Clip

7. Connect AC power to the replacement power supply, as shown in Figure 4-18. The replacement unit's LED turns green and the front panel's red LED turns off to verify that the new unit is functioning correctly.
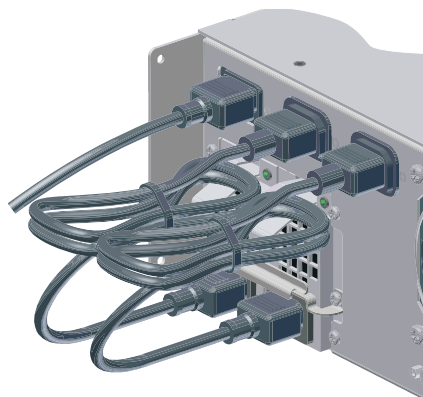
Figure 4-18   Reconnecting AC Power

4.5   Replacing a Show Player Power Supply

Like the Show Store, the Show Player has two power supplies installed in its rear panel. Only one power supply is required, but a second unit is provided as a backup. If one of these redundant power supplies fails, a red alert message appears on the Show Player LCD and the green LED on the failed unit goes off, as shown in Figure 4-19. The Dolby Cat. No. for each of the Show Player's power supplies is identified by a label affixed to each unit.

Caution: Before you replace a Show Player power supply, check all fuses to see if fuse replacement can fix the problem, as described in Replacing a Fuse in a Show Player Power Supply on page 55.
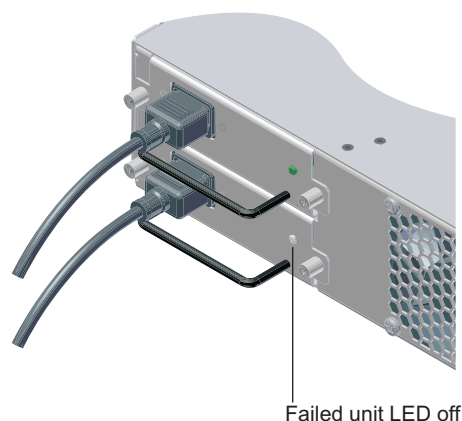
Failed unit LED off

Figure 4-19   Failed Power Supply with LED Off

The power supplies are hot-pluggable and you should replace the failed unit as soon as possible. To avoid removing the wrong unit, wait until the theatre is empty (as the system continues operating with one power supply.).

To replace a Show Player power supply:

1. Disconnect the AC power cable from the failed power supply, then use a Phillips screwdriver to release the two screws securing the failed unit, and grasp the unit's handle to pull the unit out of the Show Player, as shown in Figure 4-20.

Handle
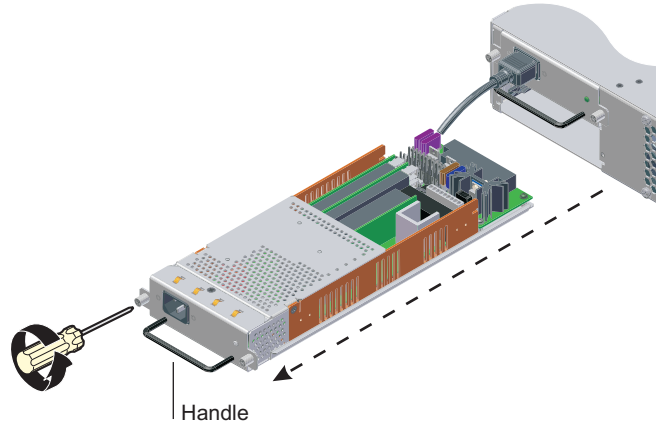
Figure 4-20   Disconnect Power, Loosen Screws, Remove Failed Unit

2. Align the replacement unit with the two small openings at the lower left and right sides of the power supply slot, then push the new power supply into its slot until it snaps into its connector, as shown in Figure 4-21.
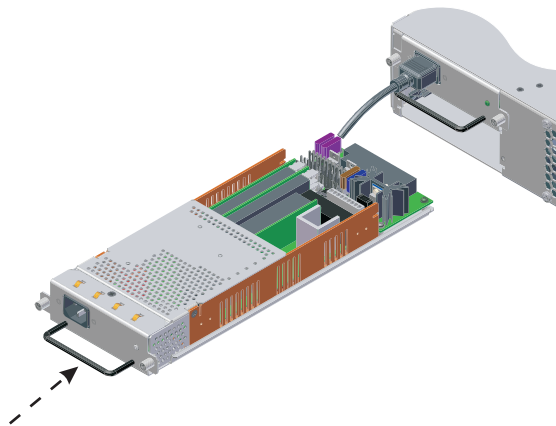
Figure 4-21   Inserting the Replacement Unit

Warning: To prevent the risk of electrical shock and maintain proper airflow, a removed Show Player power supply must be replaced either with another unit or the provided blanking plate, as described in Installing the Show Player Power Supply Blanking Plate on page 54.

4.5.1　Installing the Show Player Power Supply Blanking Plate

If you remove a power supply from a Show Player and do not replace it with another unit, you must install the provided blanking plate as follows:

Line up the blanking plate with the empty power supply slot and screw the blanking plate into place, as shown in Figure 4-22. This procedure is similar to installing a replacement power supply, as described in the previous section.
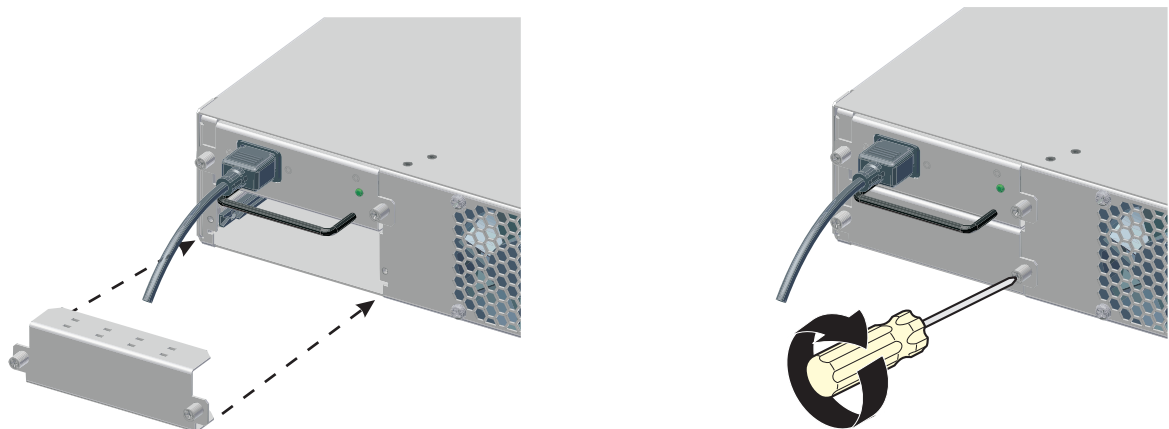
Figure 4-22　Installing the Blanking Plate

4.6   Replacing a Fuse in a Show Player Power Supply

The Show Player power supply has two AC mains fuses (T 3.15AH), which are time-lag, 3.15-ampere, 250 volt, 5 × 20 mm, high-breaking capacity. Each of these AC fuses is mounted on a circuit board underneath a removable protective metal cover. The Show Player also has four blade-type DC fuses: two 3-ampere fuses, one 5-ampere fuse, and one 15-ampere fuse. All the DC fuses are rated at 32 volts.

Spare blade-type fuses are included in the Show Player packing kit.

4.6.1   Remove the Failed Power Supply

Begin by removing the failed Show Player power supply following the applicable instructions in Replacing a Show Player Power Supply on page 52.

Follow only those instructions that show you how to remove the unit.
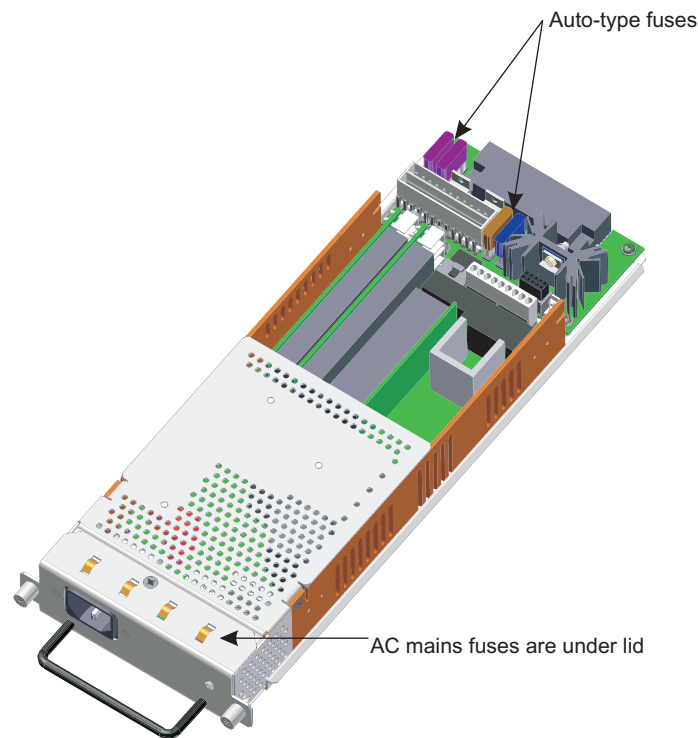
Figure 4-23   Show Player Power Supply Fuse Locations

4.6.2 Replacing a Blade-Type DC Fuse

To replace a blade-type DC fuse, use the fuse puller included in the Show Player packing kit to remove the failed fuse and insert the new fuse in the empty slot, as shown in the example in Figure 4-24 (for a 3-ampere fuse).

Spare blade-type fuses are included in the Show Player Packing kit.

Replace blade-type DC fuse
(3 ampere fuse shown)
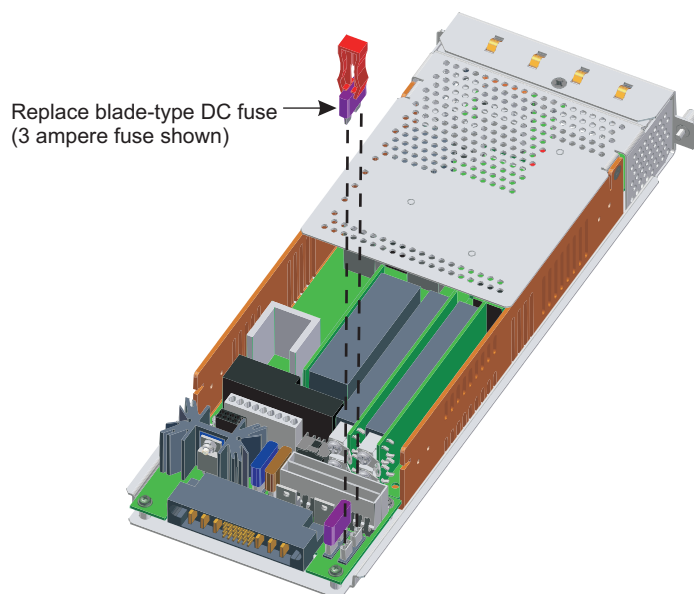
Figure 4-24   Replacing a Blade-Type DC Fuse (Show Player power supply rear view)

Part numbers for replacement DC fuses are listed in Table 4-2. We recommend using these part numbers rather than generic automotive blade-type fuses as replacements.

Table 4-2   Fuse Replacement Part Numbers

	Dolby Part No.	Littelfuse Part No.	Bussman Part No.
3-Ampere DC Fuse (purple)	56086	257003	ATC-3
5-Ampere DC Fuse (yellow)	56087	257005	ATC-5
15-Ampere DC Fuse (blue)	56088	257015	ATC-15

4.6.3   Replacing an AC Mains Fuse

Be sure the power is disconnected. Use a Phillips screwdriver to remove the three screws that secure the power supply's lid, then lift up the lid on a 30-degree angle, as shown in Figure 4-25 (the lid may vary slightly, depending on your unit).
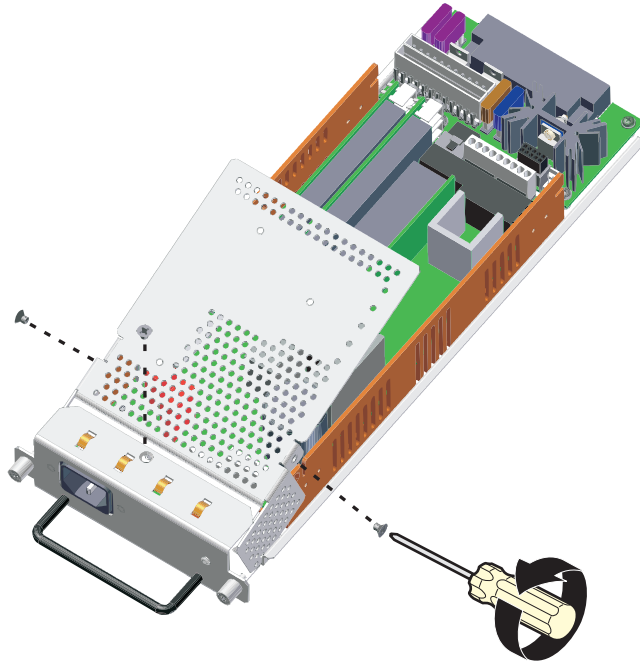
Figure 4-25   Removing the Screws from a Show Player Power Supply Lid

1.   Lift the lid off the unit, as shown in Figure 4-26.
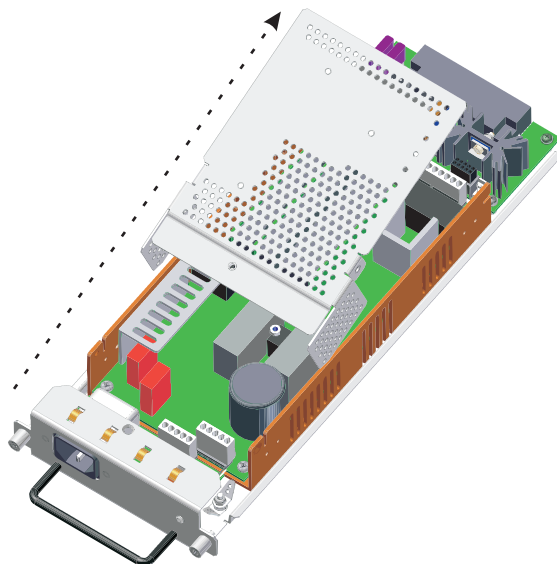
Figure 4-26   Lifting the Lid Off a Show Player Power Supply

The AC mains fuses have removable covers, as shown in Figure 4-27.

AC mains fuse covers
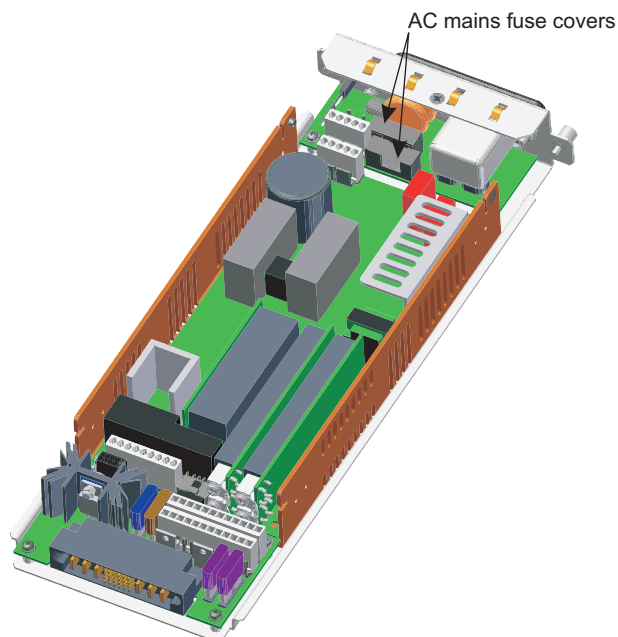
Figure 4-27   AC Mains Fuse Covers (Show Player power supply rear view)

2.   Check the AC mains fuses by pulling each fuse cover out of its slot. Each fuse is inserted in the bottom of its cover, as shown in Figure 4-28. Use a DC ohmmeter to verify whether a fuse is blown. We recommend checking both fuses, and replacing as required.

Lift off each AC mains fuse cover, check for failed fuse, and replace
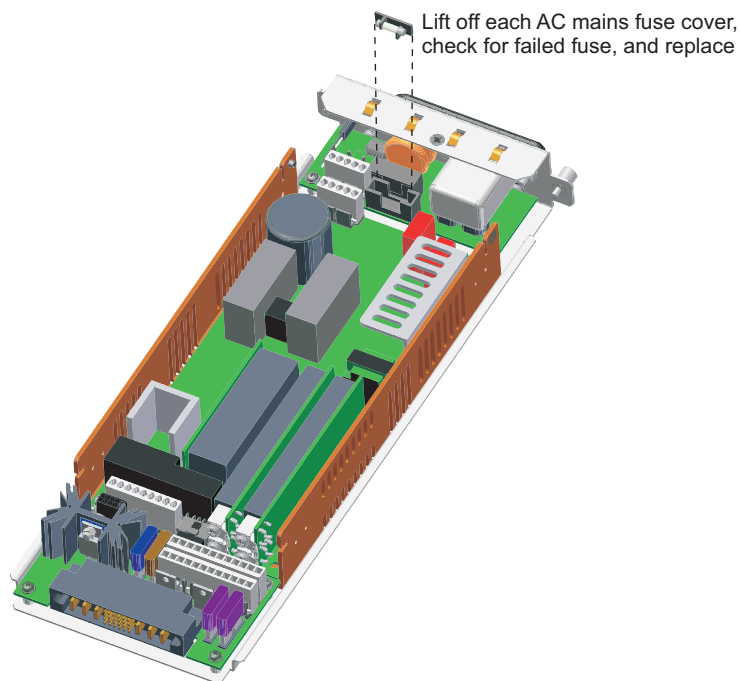
Figure 4-28   Replacing an AC Mains Fuse (Show Player power supply rear view)

3. Remove the failed fuse(s) from the fuse cover(s), insert the replacement fuse(s), and then push both fuse covers back in their slots. Following are part numbers for replacement AC fuses:

- Dolby Part No. 56077
- Littelfuse Part No. 215315
- Wickmann Part No. 1811315000

4. When you are done installing the new AC mains fuse, replace the lid by lining up its three screw hole tabs with the screw holes on the main unit, then use a Phillips screwdriver to reinstall the screws, as shown in Figure 4-29. Be sure to position the tabs on the inside of the unit.
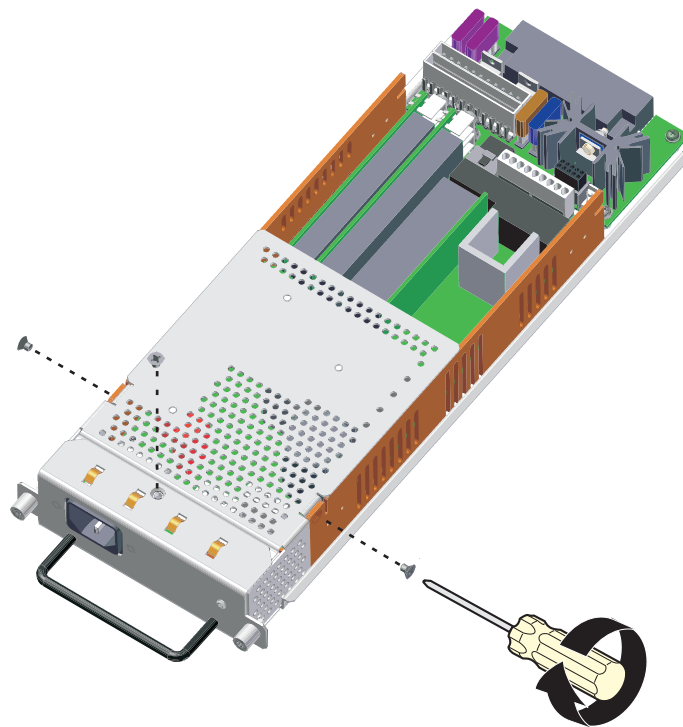
Figure 4-29 Replacing the Lid on a Show Player Power Supply

4.6.4 Reinstall the Power Supply

After replacing a fuse, reinstall the power supply following the applicable instructions in Replacing a Show Player Power Supply on page 52. Follow only those instructions that show you how to reinstall the unit.

Note: If replacing a fuse does not restore the power supply, you may need to replace the entire unit, as described in Replacing a Show Player Power Supply on page 52.

4.7 Updating Show Player Software

To update the Show Player Software:

1. Obtain the update software from Dolby Laboratories.
2. Install the update software on your PC following the onscreen instructions.
3. Connect your PC to the USB port on the Show Player's front panel.

   Line up the correct ends of the USB cable with their respective connectors on your PC and the Show Player. Be sure to insert each end of the cable securely into its respective connector, so the units connect properly.
4. Select **Start**>**Programs**>**Dolby**>**Dolby Software Update.** The Dolby Software Update window appears, as shown in Figure 4-30.
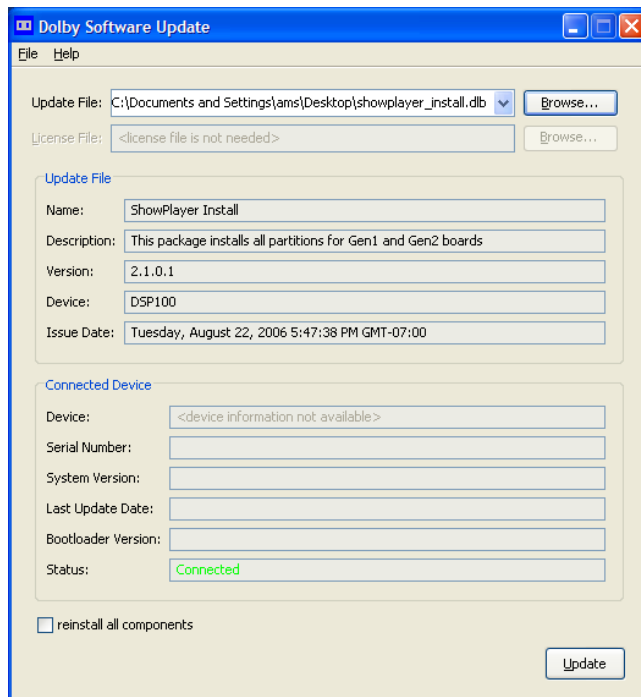
Figure 4-30 Show Player Setup Update Screen

5. Obtain the **Update File** and the corresponding **License File** and copy it to your PC.
6. Power cycle the Show Player, while holding down the **Auto** button until the upgrade screen appears on the User Control screen.
7. Click the **Browse** button in the Software Update window to select the **Update File** (and the corresponding **License File**, if applicable).

   The **Update File**, **License File**, and **Connected Device** fields display their respective information. The update file is encrypted and requires the corresponding license file, which is encrypted for each individual Show Player.

> **Note:** If you don't check the **reinstall all components** button, only those components that need updates are installed. If you check this box, all components are reinstalled.

8. Click the **Update** button to run the upgrade.
9. When the update is completed, disconnect the USB cable from the Show Player and your PC.

    The Show Player automatically reboots with the updated software.

4.8   Updating Show Store Software

Periodic updates to the Show Store software are distributed on the *Dolby Show Store Upgrade* CD. This disc upgrades only the Show Store operating system and application. Existing content and any Show Manager configurations remain intact.

To update the Show Store software:

1. Insert the Show Store upgrade CD into the Show Store's CD/DVD-ROM drive.
2. Power cycle the Show Store to reboot the unit.

    The drive's activity LED blinks intermittently and the Show Store's temperature LED on the front panel flashes in green while the system automatically performs the upgrade.

Caution: Do not interrupt the upgrade process by trying to remove the CD or disconnecting the AC mains power.

If a monitor is connected to the Show Store, messages appear confirming the upgrade process. When the upgrade is completed (after approximately 10 minutes), the temperature LED stops flashing and turns solid green.

3. Power cycle the Show Store to reboot the unit.
4. Remove the upgrade CD.

4.9   Updating Show Manager Software

Periodic updates to the Show Manager Client/Server are included on the *Dolby Show Manager Upgrade CD*. This disc upgrades the Show Manager application to the version indicated without modifying existing data. Shows, schedule information, and the network configuration remain intact.

To update Show Manager:

1. Insert the Dolby Show Manager CD into the Show Store's CD/DVD-ROM drive.
2. Power cycle the Show Store to reboot the unit.

    The drive's activity LED blinks intermittently and the Show Store's temperature LED on the front panel flashes in green while the system automatically performs the upgrade.

Caution: Do not interrupt the upgrade process by trying to remove the CD or disconnecting the AC mains power.

If a monitor is connected to the Show Store, messages appear confirming the upgrade process. When the upgrade is completed, the temperature LED stops flashing and turns solid green.

3. Remove the upgrade CD.

4.10 Troubleshooting

If you experience any problems with the Dolby Digital Cinema System, check Table 4-3 and for possible solutions. If you cannot resolve your problem using the table, contact your Dolby authorized service representative.

Table 4-3 Troubleshooting Quick Reference

Problem	Verify	Action
No sound in auditorium	* Show is playing by checking Show Player monitor screen and Play button. * Show Player audio LED is green. * Processor is set to the assigned Digital Cinema format. * Processor is not in mute and fader is at 7.0. * Amplifiers are switched on.	Select content and press play button to start show. If LED is unlit but input and video LEDs are green, clip has no audio. Select a different Show or Clip. Select assigned Digital Cinema format. Press mute button to unmute processor and set fader to 7.0. Power on amplifiers.
No picture on screen	* Projector is on. * Show Player is connected to projector. * Show Player video LED is green. * Show is playing by checking Show Player monitor screen. * Correct projector inputs are being used.	Turn projector on. Connect Show Player to projector. Secure Show Store to Show Player connection. Select content and press play button to start show. Connect Show Player to correct projector inputs.
Cannot project 3D shows in 3D	* Digital Projector set for 3D. * Additional equipment for 3D glasses is functioning. * Show Player HD-SDI links A and B connected to respective digital projector ports. * Show Player is configured for 3D mode.	Set projector for 3D playback. Authorized installer set up equipment for 3D glasses. Connect Show Player A and B HD-SDI links to respective digital projector ports. Configure Show Player for 3D mode.
Auditorium event cues not functioning	* Show has event cues. * NA10 is present in auditorium and powered on. * NA10 is not in offline mode. * Breaker is not switched off. * Network switch is turned on—are network lights flashing?	Configure event cues in Show Manager. Properly install NA10 and power on. Place NA10 in online mode. Turn on breaker. Turn on network switch.
Film projector cues not functioning	*Cues on NA10 are set properly.	Power cycle NA10 to reset cues.
Show Player cannot connect to Show Store	*Show Store is powered on. *Dedicated Ethernet connection between Show Store and Show Player is connected. *Input LED is green on Show Player.	Power on Show Store. Connect Show Store to Show Player. Secure all connections.

Table 4-3   Troubleshooting Quick Reference

Problem	Verify	Action
Red alert appears on Show Player User Control screen	*Problem on Show Player Status screen.	If status screen indicates a Show Player power supply needs replacement, follow the instructions in Replacing a Show Player Power Supply on page 52.
Unable to transmit or receive on theatre network using fiber Ethernet ports	*Fiber Ethernet cables are properly connected to Show Store and theatre network switch.	Secure connections to theatre network switch. Reverse the two fiber Ethernet cables and reconnect to fiber Ethernet ports on Show Store.

Dolby Digital Cinema Specifications

A.1 Show Player Front-Panel Specifications

User Control Screen
Full color; displays current show status, schedule information, unit status, and configuration

Menu Buttons
For navigation of User Control screen

Status LEDs
Bicolor LEDs show status of input, output audio, and output image streams

USB 2.0
Type B connector, for installer setup and software upgrades

Transport Control Buttons
Play/pause, stop, forward, rewind, next, previous

Auto Button
Selects either manual (local) control or automatic (scheduled) control

A/V Mute Button
Mutes audio; image goes to black

A.2 Show Player Rear-Panel Specifications

Image Output
Dual BNC female connectors, 75Ω, HD-SDI per SMPTE 292M

Digital Audio Output
Two sets of eight-channel outputs; Four BNC female connectors, unbalanced, 75Ω, per AES-3id-2001 and SMPTE 276M; 25-pin female D-connector, balanced, 110Ω, transformer isolated, per AES3-1992

Video Reference Input
BNC female connector; supported video formats: 23.98, 24, 25, 29.97, 30 fps tri-level sync per SMPTE 274M; 50, 59.94, 60 fps tri-level sync per SMPTE 296M; 23.98, 24 fps tri-level sync per SMPTE RP211-2000

Timecode Output
BNC female connector, unbalanced, output impedance 50Ω per SMPTE 12M

Network Connection
RJ-45 female connector; 1000BASE-T

A.3   Show Player General Specifications

Image Decoding
Purpose-designed digital cinema image decoder supports content format JPEG 62000 and MPEG2 file formats; JPEG 2000 maximum bit rate greater than 350 Mbps at 24 fps; progressive scan 2048 x 1,080; MPEG-2 maximum bit rate of 150 Mbps at 24 fps; supported frame rates 23.98, 24, 25, 29.97, 30 fps; progressive scan 1,920 × 1,080, 1,280 × 720 resolution; MP@HL

Packaging Format
MXF; based on MXF OP-ATOM (SMPTE 390M) for D-cinema; uses XML-based composition play list and packing list

Audio Processing
Eight channels supported in PCM or coded audio formats

Security
2048-bit RSA decryption for key delivery
128-bit AES decryption for content
Internal security manager
Secure image processing
Secure audit log
Secure real-time clock
Supports industry-standard key messages
Supports insertion of both video and audio watermarking
Supports TI™ CineLink™ and TI CineLink II

Subtitles
Supports TI CineCanvas™

Construction
Secure, tamper-resistant 2-U rackmount chassis

Power Requirements
100–240 VAC, 50–60 Hz, 55 W, designed to operate from a centrally switched power source
Dual redundant power supply

Dimensions and Weight
2-U rackmount chassis, 88 × 483 × 450 mm (3.5 × 19 × 17.7 inches)
Net: 11.5 kg (28.5 lb)

Environmental Conditions
Operating: 0°– 40°C (32 °–104°F), fan cooling, 20%–80% relative humidity (noncondensing)

A.4 Show Store Front-Panel Specifications

Removable Media
DVD-ROM drive and removable hard disk drive for content and key delivery

Status LEDs
Bicolor LEDs show status of power supply, temperature, and internal hard disk drives

USB 2.0
Type A connector for key or content delivery

A.5 Show Store Rear-Panel Specifications

USB 2.0
Two type A connectors, for optional keyboard and mouse for Dolby Show Manager software and system configuration

Network Connections
Three RJ-45 female connectors; 10/100/1000BASE-T with auto detection
One SC connector; 1000BASE-SX (optional)

Serial Data
9-pin female D-connector, RS-232

Monitor
15-pin high-density female D-connector for optional VGA monitor for Dolby Show Manager software and system configuration

A.6 Show Store General Specifications

Show Storage Capacity
Standard configuration: 10 hours at 250 Mbps; higher capacity options are available for additional storage

Content Hard Disk Drives
Fully redundant RAID 5 system, user-serviceable, hot swappable hard disk drives

Power Requirements
100–240 VAC, 50–60 Hz, 250 W, designed to operate from a centrally switched power source
Dual redundant power supply

Dimensions and Weight
3-U rackmount chassis; 132 × 483 × 580 mm (5.25 × 19 × 23 inches)
Net: 16.3 kg (36 lb)

Environmental Conditions
Operating: 0°– 40°C (32 °–104°F), fan cooling, 20%–80% relative humidity (noncondensing)

Automation Options
Internal GPI/O for interfacing with external equipment; RS-232 port directly connects to cinema automation with serial control. Ethernet directly connects to cinema automation with network control.

Digital Audio Overview

The following digital audio overview is provided as an informational supplement that may help you in the installation process. Some of this information relates directly to Dolby® Digital Cinema, while other sections refer to other Dolby products.

B.1   Digital Audio Sources

Dolby Digital Cinema processors and decoders accept a wide range of digital audio sources, including:

- High-definition video server, player, or receiver
- Professional digital video tape recorder (VTR)
- Digital satellite or cable television receiver
- DVD player
- Terrestrial digital television broadcast
- CD player

A range of digital audio formats are also accepted by Dolby Digital processors and decoders, including:

- Dolby Digital (consumer, non-film-based)
- Dolby E
- PCM (digital stereo audio)

B.2   Digital Audio Inputs

There are two professional interface formats used for digital audio: AES/EBU (also known as AES3) and AES-3id. These stream the same digital data and professional audio header information over copper conductor links, but use different types of conductors and connectors. AES/EBU uses a balanced connection (two conductors plus shield) with a characteristic input impedance of 110Ω, nominal peak-to-peak signal level of 5 V, and, most commonly, XLR connectors. The typical maximum transmission distance is 100 meters (328 ft.). AES-3id uses an unbalanced connection (one signal conductor plus shield) with a characteristic input impedance of 75Ω, peak-to-peak signal level of 1 V, and BNC ("push and twist") connectors. The typical maximum transmission distance is 1,000 meters (3,280 feet).

B.3   Consumer Interface Standards for Digital Audio

The consumer interface standard for digital audio is S/PDIF (IEC 61937). S/PDIF uses coaxial unbalanced connections (one signal conductor plus shield) with a characteristic input impedance of 75Ω with RCA (phono) connectors, or a fiber-optic cable with Toslink™ connectors. The unbalanced coaxial connection has a peak-to-peak signal level of 0.5 V. The typical maximum transmission distance is 10 meters (33 feet). Although S/PDIF-specific cables with suitable connectors can be purchased, you can also obtain good results using high-quality 75Ω video cable with the appropriate connectors and/or adapters.

B.4   Cable Issues

Even in digital audio, noise-free signals are very important. The cable used for digital signals is specifically designed for such use, although it looks the same as cable used for analog audio or video signals. Any professional audio equipment or broadcast supply company can provide 110Ω cable with connectors (or without, if you'd like to terminate them yourself) for AES/EBU connections, and high-quality 75Ω video cables with BNC connectors for AES-3id connections. Use of cables or connectors not designed for digital transmission or with incorrect impedance compromises the integrity of the bitstream. This can result in unreliable hardware interconnections, especially with long cable runs.

B.5   Multiple Sources: Conversion Between Interface Standards

Although some details of the bitstreams used in the AES and S/PDIF standards are different, the audio information is exactly the same. As a result, most audio equipment accepts either standard with no need to convert the bitstream itself; this is the case with the DMA8Plus. However, if you intend to connect sources across different types of digital audio inputs, do not attempt to convert a digital interface type by directly wiring an XLR connector to a BNC or RCA plug. This causes an impedance mismatch and signal reflections, resulting in digital waveform degradation. This may appear to work, but the results are unreliable and dropouts occur.

For conversion between the AES-3id and S/PDIF formats, you can use high-quality RCA-to-BNC adapters because the cable and impedance are both the same (75Ω).

For conversion between the AES/EBU and AES-3id or AES/EBU and S/PDIF formats, a simple and economical method is to use inline transformers. These devices perform the necessary impedance and balanced/unbalanced conversion. Table B-1 shows some examples of suitable adapters. The unbalanced connector in these examples is a BNC. BNC-to-RCA adapters can be added to connect to consumer S/PDIF connections. The following units use passive circuitry.

Table B-1 Examples of Available Balanced/Unbalanced Adapters

Adapter Type	Neutrik®	Canare™
XLR female 110Ω in to BNC female 75Ω out	NA-BF	BCJ-XJ-TRA
BNC female 75Ω in to male XLR 110Ω out	NA-BM	BCJ-XP-TRA

Higher-priced units incorporating active circuitry are also available. These offer additional features like multiple inputs, inputs for Toslink digital connections, and multiple outputs.

Index