DOLBY.

DOLBY® Digital Cinema System

The Dolby® Digital Cinema system is a powerful, comprehensive, and reliable solution designed specifically for the cinema. We engineered it from the ground up for real-world projection booths with the flexibility to meet your needs for years to come. The same foresight and approach to quality that you expect from Dolby went into developing this system.

Overview

The system comprises the Dolby Screen Server (DSS200) and Dolby Theatre Management System (TMS) software. The DSS200 combines an existing FIPS certified media block with storage that houses digital content for playback. The media block decrypts the movie data and decodes the image. It outputs link-encrypted image data to the digital cinema projector and audio data to the cinema's sound processor, such as a Dolby CP750 or CP650, or a Dolby DMA8Plus Digital Media Adapter paired with another Dolby sound processor model.*

We designed the DSS200 to be serviced easily. The unit slides out from the rack on rails, and the top lifts up for easy access to the hardware inside.

The custom-designed media block, reprogrammable to accommodate future developments in image and sound formats, assures you the highest-quality picture and sound. For security's sake, when the content is decoded, it is reencrypted before being passed on within secure hardware so pirates cannot reach valuable movie data.

Theatre personnel can run the show locally or remotely via the Dolby TMS software, which includes familiar transport controls and also allows central network control, easy setup, scheduling, and monitoring.

*CP500, CP65, CP200, CP45, or CP55

Reliability Features
Keep the Show Onscreen

- Dual redundant hot-swappable power supplies

- RAID 5 hard disk array with hot-swappable drives

- Hot-swappable cooling fans

- Maintains playback position in the event of a power failure

- Robust software design that isolates and prioritizes playback over all other activities

DOLBY Screen Server (DSS200)
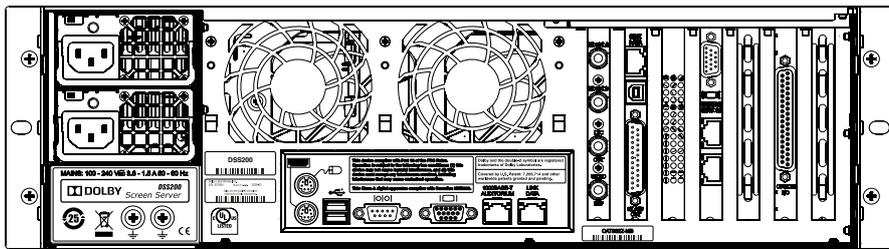
General

Image Decoding

Purpose-designed digital cinema image decoder supports content in JPEG 2000 and MPEG-2 formats; JPEG 2000 maximum bit rate 250 Mbps; supported frame rates 2D at 24 and 48 fps, 3D at 24 fps; 2K or 4K content playback at progressive scan 2,048 x 1,080; MPEG-2 maximum bit rate 140 Mbps; supported frame rates 23.98, 24, 25, 29.97, 30 fps; progressive scan 1,920 x 1,080; MP @ HL

Packaging Format

Supports MPEG Interop, JPEG Interop, and SMPTE packaging formats

Audio Processing

16-channel audio on 8 x AES/EBU balanced digital audio outputs

Security

2,048-bit RSA decryption for key delivery; 128-bit AES decryption for content; internal security manager for secure image and sound processing, SMPTE security logging, secure real-time clock; supports insertion of both video and audio watermarking; supports industry-standard key delivery messages (KDMs) and TI™ CineLink™ II (Diffie-Hellman and TLS)

Subtitles

Supports TI CineCanvas™ and SMPTE 428-7-2007 subtitles

Show Storage Capacity

Over 1,300 GB (formatted) internal content storage, enough for 10 features at 130 GB

Content Hard Disk Drives

RAID 5 system for redundancy; user-serviceable, hot-swappable hard disk drives

Power Requirements

100–240 VAC; 50–60 Hz; 250 W front-panel power switch; dual redundant power supply

Dimensions and Weight

3-U rackmount chassis; 686 x 483 x 133 mm (27 x 19 x 5.25 inches); net: 29.5 kg (65 lb)

Environmental Conditions

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

Automation Options

Digital Failsafe option to enable "lights on" automation if playback stops; serial RS-232 port directly connects to cinema automation with serial control; Ethernet directly connects to cinema automation with Ethernet control

Regulatory Notices

UL, FCC, CE, and RoHS compliant

Front Panel

Removable Media

Industry-standard removable hard disk drive bay and DVD-ROM 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, optional keyboard/mouse input

Monitor Output

15-pin high-density female D-connector for optional VGA-compatible monitor to display user interface

Rear Panel

USB 2.0

Two type A connectors, for optional keyboard and mouse to operate user interface

Network Connections

Three RJ-45 female connectors; 10/100/1,000Base-T with auto detection for auditorium network, theatre network, and future expansion; 1,000Base-LC optical fiber (optional, for theatre network)

Serial Data

9-pin male D-connector, RS-232

General Purpose Input/Output

Digital Failsafe option to enable "lights on" automation if playback stops; possible future expansion

Monitor Output

15-pin high-density female D-connector for optional VGA-compatible monitor to display user interface

Image Output

Two BNC female connectors, 75Ω, HD-SDI per SMPTE 292M

Digital Audio Output

25-pin female D-connector, 16-channel output on 8 x AES/EBU balanced, 110Ω, transformer isolated, per AES3-1992

Timecode Output

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

Video Reference I/O

BNC female connector, can be switched between input and output; in output mode (the default), reference signal automatically matches the content being played

DOLBY Theatre Management System Software

Monitor
View-only screen that allows the user an at-a-glance status report of all auditoriums in the complex.

Control
Gives the user manual control of each Dolby Screen Server from anywhere in the complex.

Content
Allows the user to assemble entire shows (ads, trailers, cues, feature presentation) and manage or move content already loaded in the Dolby Screen Server, Dolby Show Library, or attached FTP storage servers.

Schedule
Allows the user to schedule all shows in a complex using a monthly calendar and to review intermission durations to avoid scheduling errors. Complete daily and even weekly scheduling in a few minutes.

System
Utilized during installation for configuring the entire system.

Dolby Theatre Management System (TMS) software simplifies and streamlines digital screen operations. It gives theatre personnel and network operations centers (NOCs) comprehensive central control over all presentations—for a single screen, a large multiplex, or a system integrator's entire network.

From ingesting content and moving it, even while playing, to drag-and-drop show assembly, Dolby TMS software features operational simplicity, at-a-glance monitoring, and comprehensive remote control. Dolby

Web services now allows interoperability with third-party control systems, too. The playback system supports SMPTE draft-standard Closed Caption protocols, and the entire system can be upgraded remotely via your digital cinema network.

As an integral part of a networked Dolby Digital Cinema system, Dolby TMS software enables network control of up to three Dolby Screen Servers with no additional equipment. It also enables central network control of all the Dolby Screen Servers in a multiplex when deployed with a Dolby Show Library.

DOLBY Show Library (DSL100)

Dolby Show Library is a high-capacity central server designed to facilitate the networking of a multiplex and meet its content storage needs. Dolby Show Library acts as the heart of your digital cinema network, giving you the ability to load all content at one central location, then distribute files electronically to networked Dolby Digital Cinema systems within the multiplex. For full specifications on the Dolby Show Library, contact Dolby Laboratories or visit dolby.com/digitalcinema.

Installation Options: CP750, DMA8Plus, NA10

CP750 Digital Cinema Processor

The CP750 Digital Cinema Processor is a key part of Dolby's digital cinema solution, combining high performance, practical functionality, and legendary Dolby quality. It accommodates eight digital audio channels from any cinema server, three additional digital sources of preshow and alternative content, and an existing film sound processor. It can be updated, controlled, and monitored remotely via your circuit's Wide Area Network to ensure glitch-free presentations. Dolby Digital 5.1, Dolby Digital Surround EX™, Dolby Pro Logic®, and Dolby Pro Logic II decoding are also included to deliver the best in surround sound before and during the show.

DMA8Plus Digital Media Adapter

The Dolby DMA8Plus interfaces the Dolby Screen Server with a cinema's existing sound processor. It decodes the original digital audio to six analog channels compatible with the Dolby CP200, CP45, CP55, CP65, CP500, and most other processors. It can also be used with a CP650 processor not equipped with a Cat. No. 790 digital input card (and is not needed for CP650s that are).

NA10 Network Automation Interface

The Dolby NA10 interfaces the Dolby Digital Cinema system with a cinema's existing automation system, enabling fully automated digital content presentations. Lighting, curtain, masking, and audio format changes can be scheduled for each show via the Dolby TMS software; as the show plays, the NA10 converts these digital cues to the electrical signals necessary to trigger various automation functions.

Digital Cinema Installation Kit
(Cat. No. 899-CP650, Cat. No. 899-DMA8)

Includes such items as Ethernet cables, HD-SDI cables, digital audio cables, and Gigabit Ethernet switches (jumbo frame).

For full specifications on the CP750, DMA8Plus, and NA10, contact Dolby Laboratories or visit dolby.com/digitalcinema.