Dolby and the Future of Audio

Introducing the most significant development in cinema audio since the arrival of surround sound. Dolby® Atmos™ provides filmmakers unprecedented control over how they use audio to tell their stories and gives audiences a whole new reason to go to the movies.

Developed with input from professionals throughout the movie industry, Dolby Atmos represents a complete platform for movie sound. It allows full creative freedom and streamlines distribution so audiences in any theatre can hear the whole picture.

CONTENT CREATORS

Filmmakers infuse every frame of their movies with meaning. The smallest details matter. Dolby Atmos enables a new level of artistic expression by giving content creators total control over the placement and movement of sound relative to the audience. With Dolby Atmos, it's finally possible to match audio precisely to the action onscreen. Dialogue follows characters. Sound effects track with camera pans. Ambient sounds envelop the audience. The result: more powerful storytelling.

DISTRIBUTORS

Package once, distribute everywhere—that's the promise of Dolby Atmos. It builds intelligence into the audio files, thereby eliminating the need for multiple versions. Dolby Atmos revolutionizes movie distribution by creating a single delivery file that will play faithfully in any theatre: 5.1, 7.1, and beyond. Dolby Atmos will render the audio to maximize the theatre's specific configuration. This greatly simplifies distribution and ensures that the audience experience remains consistently excellent.

EXHIBITORS

Exhibitors want to offer audiences an entertainment experience that's available only in the theatre. They also need a steady flow of blockbuster titles. Dolby Atmos delivers on both counts. It surpasses anything currently available in the theatre or the home, and it is the ideal audio solution for filmmakers searching for new ways to tell their stories. Because Dolby Atmos works across a range of theatre configurations, exhibitors can upgrade cinemas over time and realize improvements with each step.

AUDIENCES

Dolby Atmos pulls audiences into the story as never before by allowing content creators to position and move sounds anywhere in the theatre, even overhead. The effect is profound—audio that centers the audience in the action and heightens the impact of every scene. Dolby Atmos optimizes playback based on the acoustic performance of the room to preserve the director's intent in each scene. With Dolby Atmos, audiences can be sure that the experience is absolutely faithful to the filmmaker's vision.

HOW IT WORKS

Dolby Atmos takes a unique layered approach to sound design. The base consists largely of ambient sounds, which are mixed using the familiar channel-based method. Layered on top of these base-layer sounds are dynamic audio elements that can be positioned and moved precisely to correspond to the images onscreen. The metadata within Dolby Atmos records how these elements should behave during playback to best match the director's intent, regardless of theatre configuration. This dual-layer approach provides a familiar interface for mixers, expands the creative palette, preserves the filmmaker's intent, and ensures a consistent experience, no matter the playback environment.

TECHNICAL INFORMATION

- Combines distinct sound elements with channel-based audio content
- Captures the director's intent and generates 5.1 and 7.1 deliverables automatically
- Supports up to 128 simultaneous, lossless audio streams (channels or sound elements)
- Allows for up to 64 discrete speaker feeds
- Works across a wide array of speaker configurations and auditorium shapes and sizes
- Simplifies distribution with single DCP inventory
- Integrates easily into existing postproduction workflow

THEATRE SETUP

Exhibitors will need to upgrade their sound systems to exploit the full potential of Dolby Atmos. Since each theatre has different acoustic properties, there is no one-size-fits-all solution in terms of speaker configuration. Because it is an intelligent system, Dolby Atmos can use information about the speaker configuration and the positioning metadata of the audio stream to optimize playback for each room. Theatre upgrades can be done all at once or a little at a time as budgets allow. The system will automatically adjust playback to exploit each upgrade. Upgrades should be planned with the following considerations in mind:

- **Addition of two rows of overhead speakers in line with the side surrounds**: Overhead speakers add height effects and allow objects to be panned above the audience.
- **Addition of speakers between the screen and the first side surround speakers**: These speakers help create smooth pans when sounds on the screen are panned into the room.
- **Individual amplification of each speaker**: Individually addressable speakers allow for precise placement of sounds around the audience.
- **Upgrade of speakers for higher frequency response and dispersion angle**: Sounds coming from a single speaker need to cover the whole audience, so more power and a wider angle are needed. Better frequency response allows for better timbre matching when a sound element is moved offscreen.
- **Addition of subs or full-range speakers in the rear corners of the room**: These speakers allow for advanced bass and power management to improve realism as sounds move around the room.
- **Addition of inner left and right channels behind the screen for large screens**: Tighter spacing improves smoothness of pans across the screen.

Please contact your Dolby sales representative or visit www.dolby.com/atmos for more information.

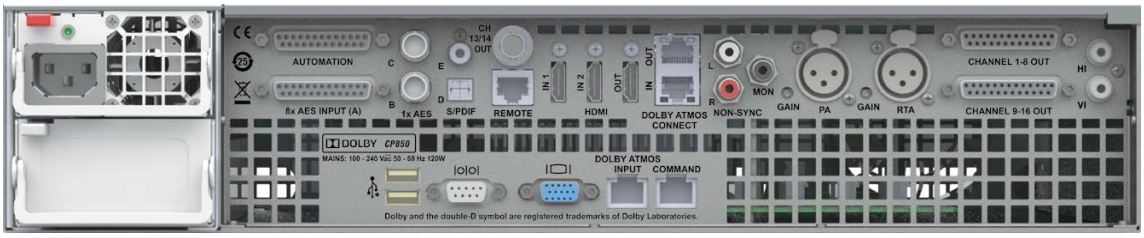
DOLBY ATMOS CINEMA PROCESSOR CP850—NEW!

The Dolby® Atmos™ Cinema Processor CP850 brings the complete Dolby Atmos audio solution to today's digital cinema theatres, fulfilling the Dolby Atmos promise of a more natural and enveloping auditory experience—an experience that best matches filmmakers' artistic intent. To ensure proper setup and playback, each CP850 also includes the Dolby Atmos Commissioning Service. The CP850 offers a wide range of powerful capabilities to meet the audio needs of today's modern digital cinema theatres. Product features include:

- Dolby Atmos playback
- Dolby Surround 7.1 and 5.1 playback
- Dolby codec support for alternative content (Dolby Digital Plus, Dolby TrueHD, and Dolby E upmixing)
- 16 channels of DCI PCM audio output
- Support for 64 speaker feeds, configurable between 16 analog outputs and a Dolby Atmos Connect (DAC) output
- Flexible I/O for a wide variety of content sources (16-channel AES, S/PDIF, optical, stereo analog, public announcement microphone)
- Optimized reproduction of Dolby Atmos soundtracks in every cinema regardless of the number of channels available in the sound system; renders a Dolby Atmos soundtrack to match content creators' original intent as accurately as possible in every room
- Simplified installation, maintenance, and day-to-day operation of cinema sound systems for exhibitors
- Automated calibration tools that improve the consistency of audio reproduction across a broad range of cinemas and sound system components
- Sophisticated EQ processing to improve cinema audio playback
- Front panel controls:
  - Master fader
  - Mute button
  - Power button
  - Eight macro buttons
  - LCD display with navigation buttons
- Feature-rich, web-based user interface that makes it easy to configure the product, with program macros for the correct playback of a variety of source material and for remote monitoring of the hardware's functional health
- Dolby Show Manager integration and web APIs to easily integrate with TMS and NOC systems
- Inputs/outputs (see table on next page)

*Specifications subject to change prior to shipment. Contact your Dolby representative for more information.

Rear Panel Interfaces



CONNECTOR	DESCRIPTION
1 × DB25	8 × AES (16-channel) input
2 × BNC	Two AES-3id inputs
1 × Toslink™	One optical digital audio input
1 × RCA	S/PDIF input
2 × HDMI®	Two HDMI inputs that can be routed to the HDMI output
1 × HDMI	One HDMI pass-through output
RCA stereo	Non-sync input
2 × XLR	Two microphone inputs for alignment and PA
1 × Gig-E	Command interface for theatre network and web UI traffic
2 × Gig-E	Dolby Atmos Connect interface
1 × DB9	Standard 9-pin serial port
2 × DB25	16-channel electronically balanced analog outputs
2 × RCA	Hearing Impaired (HI)and Visually Impaired Narrative (VI-N) outputs
1 × DB25	Contact closure automation; eight assignable macros, mute, and a three-wire volume control
1 × IEC 60320	Power cable connector
1 × RCA	Booth monitor output
1 × BNC	DCI channels 13 and 14 pass-through for ancillary theatre system syncing

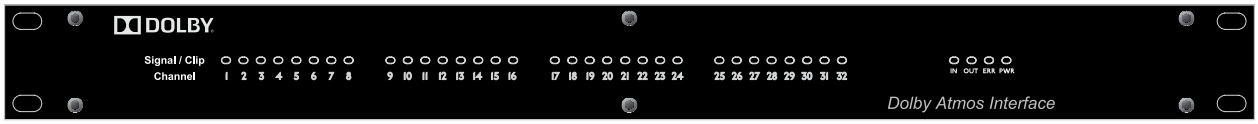
DOLBY ATMOS COMMISSIONING SERVICE—NEW!

To ensure that your screens equipped with Dolby® Atmos™ deliver the highest-quality experience possible, Dolby Atmos Cinema Processor CP850 purchases include a review of the speaker-configuration design and an initial equalization of the theatre.

Dolby Content Services engineers will review design drawings and equipment selection to ensure that the speaker and amplifier pairings, as well as their placement and positioning, deliver the best Dolby Atmos performance possible for your specific auditorium configurations.

- Optimizes playback quality for each Dolby Atmos auditorium
- Included with purchase of Dolby Atmos Cinema Processor CP850

DOLBY ATMOS INTERFACE DAC3201—NEW!



The Dolby® Atmos™ Interface DAC3201 allows the use of legacy amplifiers in Dolby Atmos installations. The DAC3201 uses Dolby Atmos Connect, an audio-over-Ethernet protocol, to receive the Dolby Atmos stream from the Dolby Atmos Cinema Processor CP850. It then converts the stream to analog audio for connection to amplifiers or other analog equipment. Each DAC3201 supports up to 32 analog outputs. A CP850 with a single DAC3201 can support up to 48 output channels. Installations with more than 48 output channels will need two DAC3201 units.

Dolby is working with audio equipment manufacturers to develop a range of products that can support the Dolby Atmos Connect protocol. Until these amplifiers are generally available, the Dolby Atmos Interface DAC3201 is needed.

- Receives audio via Dolby Atmos Connect, Dolby's audio-over-Ethernet protocol
- Provides 32 balanced analog outputs per unit on four DB25 connectors
- Extremely low latency and high reliability
- Allows analog amplifiers without Dolby Atmos Connect to connect to the CP850

Dolby Atmos Cinema Processor CP850 and Dolby Atmos Interface DAC3201 Preordering Instructions

Preorders for the Dolby Atmos Cinema Processor CP850 and the Dolby Atmos Interface DAC3201 will be accepted beginning November 1, 2012.

When preordering, the only items on the preorder purchase order should be the CP850 and the DAC3201. No other items should be included on this purchase order. A single purchase order may contain multiple CP850 and DAC3201 units.

For each CP850 ordered, include the following information:

- Provide the site name and address where the unit will be installed (this information may be different than the Ship To address).
- Per CP850, specify the number of DAC3201 units needed.
- Give contact information for those responsible for doing the room design and scheduling the room calibration.
- Provide approximate date by which the installation needs to occur.

Customer-requested installation date should be no earlier than the targeted product general availability date in May 2013 (this date is subject to change).