

*A Brief*  
**CHRONOLOGY**  
*of* **DOLBY LABORATORIES**



**DD Dolby**

BREAKING SOUND BARRIERS



# A Chronology of Dolby Laboratories

1965



Dolby Laboratories, 1965: top floor at 590 Wandsworth Road, London SW6.

**May 1965**

Dolby Laboratories founded in London SW6 by Ray M. Dolby, American physicist, with staff of four.

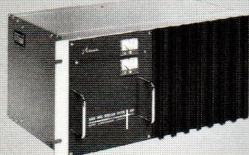
**Summer 1965**

Development of prototype audio and video noise reduction systems.

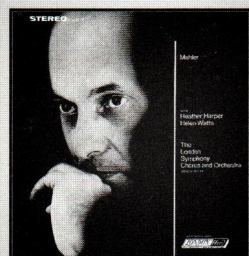
**November 1965**

Dolby A-type noise reduction system for professional music recording demonstrated to Decca Record Company, London.

1966



Dolby Laboratories' first product, the A301 A-type noise reduction unit.



The first LP released from master tapes recorded with Dolby A-type noise reduction.

**January 1966**

After system tests, Decca orders first nine A301 professional noise reduction units.

**April 1966**

First production A301 units delivered to Decca at £700 (\$2,000) each.

**May 1966**

First commercial recording session employing Dolby A-type: Vladimir Ashkenazy playing Mozart piano concertos.

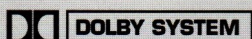
**November 1966**

First LP from master tapes made with Dolby A-type released by Decca (London Records in the US): Solti conducting Mahler's *Symphony No. 2* (SET 3256).

1967



Monitoring an early recording session using Dolby A301 NR units.



**Winter 1966-67**

Introduction of A-type noise reduction in US with first sales to CBS, RCA, MCA, Vanguard, and several independents. Increased coverage of Dolby noise reduction by audio and music industry press.

**April 1967**

Liaison with first consumer hi-fi manufacturer, Henry Kloss of KLH in Cambridge, MA, to explore possibility of simplified noise reduction circuitry for home equipment. Negotiations begin on licensing Dolby noise reduction for consumer applications. Distinction now made between A-type (professional) and B-type (consumer) systems.

**October 1967**

Advanced production facilities added in London SW8.

**November 1967**

New York office established for US distribution of professional Dolby equipment.

**1967-68**

B-type noise reduction developed.

International network established for distribution of professional equipment in Europe, Japan, and Australia.

**June 1968**

First consumer product equipped with Dolby B-type, KLH Model 40 open-reel tape recorder, released in US under first license agreement (exclusive until 1970).

**November 1968**

Move to London premises at 346 Clapham Road, SW9. Dramatic increase in orders for Model A301, due to price reduction from £700 to £560 resulting from improved production facilities.

**1968-69**

Investigation of high-performance Compact Cassette by combining Dolby B-type noise reduction with quality cassette recorders. Concept demonstrated to hi-fi industry using optimized Harman-Kardon CAD-4 recorder and Dolby Model 505 B-type noise reduction unit developed for demonstration purposes.

**1969**

Increased need for Dolby A-type as recording industry's switch to multitrack formats results in higher noise levels. By year's end, majority of London pop music studios equipped with Dolby noise reduction. By 1972, there were 42 16-track recorders in London alone.

1968

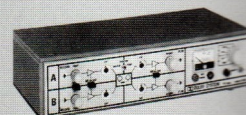


The first licensed consumer product with Dolby B-type NR: the KLH Model 40 recorder.

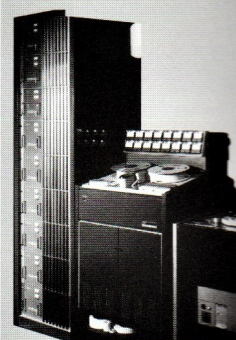


346 Clapham Road, London: company headquarters until 1976, European headquarters until 1992.

1969



The Dolby Model 505 was supplied to potential licensees for demonstrating the effects of B-type NR with consumer tape recorders.



Early multitrack installation with Dolby A301 units.



## October 1969

High-performance cassette concept demonstrated at Audio Engineering Society (AES) convention in New York. Presentations made to Advent, Fisher, and Harman-Kardon consumer hi-fi companies.

1970

## 1970-72

Extensive travels by Dolby Laboratories' staff in US, Europe, and Japan to introduce high-fidelity cassette concept to more consumer equipment and tape manufacturers.

## February 1970

First add-on consumer Dolby B-type noise reduction unit, Model 100, introduced by second Dolby licensee, Advent Corporation.

## June 1970

Introduction of Dolby Model 320, B-type unit for encoding pre-recorded cassettes. Extensive work begun with Ampex Stereo Tapes in the US and Decca in the UK to produce pre-recorded cassettes encoded with B-type noise reduction.

## Summer 1970

Arrival in the US of first high-fidelity cassette recorders incorporating Dolby B-type (Advent, Fisher, and Harman-Kardon), all manufactured in Japan by third Dolby licensee, Nakamichi.

## September 1970

Launch of second-generation Dolby A-type units, Models 360 and 361, with identical characteristics to Model A301, but in smaller format better suited to multitrack installations.

Fifth company, Revox, signs license agreement.

## November 1970

First B-type pre-recorded audio cassettes released independently by Ampex and Decca.

Investigation of application of A-type noise reduction to cinema sound results in first tests with excerpts from a film in production, *Jane Eyre*.

1971

## January 1971

Japanese licensing liaison office established in Tokyo with Continental Far East, Inc.

## May 1971

Agreement negotiated with Signetics for development of first Dolby B-type integrated circuit (IC).

## June 1971

First experimental FM broadcasts using Dolby Model 320 B-type encoder unit, by WFMT in Chicago.

## Summer 1971

Increased licensing activities result in 30 licensees by end of year, including Sony, Matsushita, and JVC.

## December 1971

*A Clockwork Orange*, first film to use Dolby noise reduction on all premixes and masters, released (with conventional optical soundtrack).

## February 1972

Introduction of Dolby Model 364 cinema unit for decoding mono optical soundtracks encoded with A-type noise reduction. Distributed outside US by Rank Film Equipment.

## March 1972

Full-time FM broadcasts encoded with Dolby B-type noise reduction begun in New York by WQXR.

## Summer 1972

Results of using Dolby A-type with experimental 16 mm stereo optical soundtrack format reported by Eastman Kodak.

## September 1972

Dolby M Series multitrack A-type units introduced at AES convention in New York.

## January 1973

Samples of first B-type IC, Signetics' NE545, sent to licensees for evaluation.

## June 1973

Proposal by Dolby Laboratories for combining B-type noise reduction and 25 microsecond pre-emphasis in FM broadcasting published in *Journal of the Audio Engineering Society*.

## September 1973

Dolby Model E2 Cinema Equalizer introduced for use in theatres to complement A-type noise reduction techniques for film soundtracks.

## October 1973

Philips, inventor of Compact Cassette, signs license.

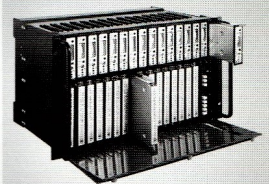
## February 1974

Dolby FM system combining B-type noise reduction and 25 microsecond pre-emphasis demonstrated to Federal Communications Commission (FCC).

1972

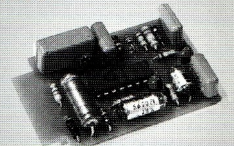


The Model 364, for decoding mono 35 mm optical soundtracks encoded with A-type NR, was the first Dolby product designed specifically for the cinema.



The first Dolby multitrack noise reduction unit, the M Series, took full advantage of the compact Cat. No. 22 A-type module.

1973

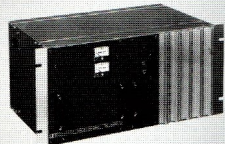


Signetics' B-type IC made it easier to incorporate Dolby NR in consumer products.

1974



Add-on consumer noise reduction units like the Advent 100 convinced "audiophiles" that Dolby B NR really worked.



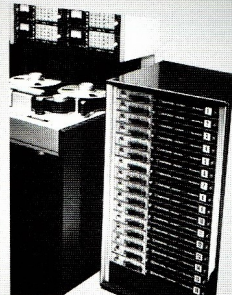
Dolby Model 320 B-type encoder for pre-recorded cassettes.



One of the first licensed cassette decks with Dolby B-type NR, the Harman-Kardon CAD-5.



The slim new Dolby 360 Series A-type noise reduction unit was better suited to multitrack installations (below) than the A301.



Multitrack installation with Dolby Model 361s.



#### May 1974

*Callan*, first film using optical soundtrack (mono) encoded with A-type noise reduction, shown at Cannes Film Festival.

#### June 1974

FCC approves 25 microsecond Dolby FM broadcasts for US.

#### July 1974

First 35 mm stereo optical recorder commissioned by Dolby Laboratories at EMI Elstree Studios, England. Milestone in development of stereo variable area (SVA) soundtrack format now widely associated with Dolby Laboratories' involvement with film sound.

#### October 1974

Dolby Models 330 and 334 introduced for pre-recorded cassette duplication and Dolby FM broadcasting.

#### November 1974

Introduction of 35 mm Dolby Stereo optical soundtrack format at Society of Motion Picture and Television Engineers (SMPTE) convention in Toronto using specially remixed section of *Stardust*. Advantages include performance comparable to older 35 mm magnetic process at considerably less cost to producers, distributors, and exhibitors.

1975

#### February 1975

Dolby CP100 Cinema Processor introduced for reproduction of Dolby Stereo magnetic and optical soundtracks. First units installed for London premiere of *Tommy* in March.

#### August 1975

One hundred US stations broadcasting in Dolby FM.

#### September 1975

First feature film for general release with Dolby Stereo optical soundtrack, *Lisztomania*, completed.

#### October 1975

Dolby FM broadcasting approved for Canada by Canadian Department of Communications.

1976

#### January 1976

New headquarters in San Francisco opened; original New York facility closed. London continues with manufacturing and international sales, while San Francisco handles company administration, research and

development, new market development, licensing, and North American sales. Dolby Laboratories' applications engineers permanently located in Hollywood and New York.

#### Spring 1976

Second 35 mm stereo optical recorder commissioned in Hollywood by Dolby Laboratories and RCA.

First 35 mm Dolby Stereo optical film with encoded surround effects, *A Star Is Born*, released.

#### October 1976

Introduction of Dolby CP50 Cinema Processor, economical theatre unit for reproduction of 35 mm Dolby Stereo optical releases.

#### January 1977

Establishment of Dolby Laboratories Licensing Corporation, responsible for all licensing activities.

#### May 1977

Opening of *Star Wars* in 46 US theatres equipped for Dolby Stereo, plus release of *Close Encounters of the Third Kind* later in year, greatly increase public awareness of Dolby Stereo and trigger further theatre installations.

#### December 1977

Twelve films released with Dolby Stereo soundtracks in 1977, bringing number of films with A-type encoded soundtracks to 30.

#### April 1978

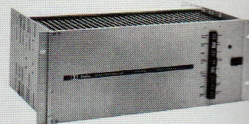
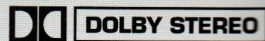
*Star Wars* (1977) is first of 18 films in a row with Dolby encoded soundtracks to win Academy Award® for Best Achievement in Sound.

#### December 1978

*Superman*, 50th film with soundtrack encoded with Dolby A-type NR, opens simultaneously in over 200 theatres; also used in first experiments with 70 mm stereo surround.

#### April 1979

Dolby Laboratories receives Scientific and Engineering Award for "improved film sound recording and reproduction system" from Academy of Motion Picture Arts and Sciences.

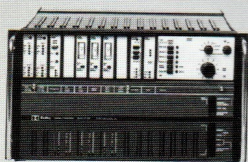


The economical Dolby CP50 Cinema Processor for stereo optical releases.

1977



The Dolby Model 330 tape duplication unit (pictured) and Model 334 FM broadcast unit featured the new slim format of the 360 Series.



The first Dolby Stereo Cinema Processor, the CP100.

1978

1979



Beginning with this Scientific and Engineering Award in 1979, Dolby Laboratories' contributions to film sound have been recognized seven times by the Academy of Motion Picture Arts and Sciences.



731 Sansome St., San Francisco: corporate headquarters, 1976-1986.



## June 1979

Dolby HX headroom extension for cassette recording introduced to audio industry at Consumer Electronics Show (CES) in Chicago.

## July 1979

Manufacturers of VHS video recorders licensed to incorporate B-type noise reduction in video-cassette machines.

## Summer 1979

Introduction of Dolby Cat. No. 55, compact A-type module for general design applications in Dolby noise reduction units.

## September 1979

*Hair*, first Dolby Stereo film dubbed into a second language, released in Germany.

First European Dolby Stereo mix, *Don Giovanni*, completed in France.

## Autumn 1979

Number of professional tracks equipped with Dolby A-type noise reduction surpasses 50,000.

First stereo VHS videocassette recorder with Dolby B-type noise reduction introduced by JVC in Japan.

## November 1979

*Apocalypse Now* is first Dolby Stereo 70 mm film exhibited commercially with stereo surround (in 15 theatres).

## 1980

### January 1980

First cassette deck incorporating Dolby HX introduced by Harman-Kardon at CES in Las Vegas.

### April 1980

Dolby Cat. No. 155 introduced, first in series of A-type noise reduction modules for inclusion within professional one-inch C-format video recorders.

### May 1980

First installations of Dolby CP200 Cinema Processor, comprehensive theatre unit incorporating Optical Bass Extension and format programming for the first time.

### Autumn 1980

Dolby C-type noise reduction introduced to licensees; 24 companies announce plans for equipped products. Six models exhibited at Tokyo Audio Fair in October.

## December 1980–March 1981

Dolby C-type demonstrated to audio press in US, UK, and Germany. First product with C-type, Sony TC-FX6C cassette deck, reaches Japanese market.

## April 1981

Dolby Cat. No. 221, two-channel A-type audio noise reduction module for Sony BVH-1100 and BVH-1000 professional VTRs, introduced at National Association of Broadcasters (NAB) convention.

## Spring 1981

Cassette duplicators in the US, Japan, and Europe supplied with new Dolby Cat. No. 219 C-type encoder modules for evaluation.

## June 1981

Thirty-four products with Dolby C-type exhibited by licensees at CES in Chicago.

First headphone portable cassette player with Dolby B-type introduced by Infinity.

First Japanese Dolby Stereo mix, *Rengo Kantai (The Grand Fleet)*, completed by Toho Films.

Number of US theatres equipped with Dolby Stereo processors reaches 2,000.

*Elephant Parts*, first pre-recorded VHS videocassette with stereo soundtracks encoded with B-type noise reduction, released by Pacific Arts.

## July 1981

Joint development of first Dolby C-type IC announced by Pioneer, Hitachi, and Dolby Laboratories. With more than 750 elements, new chip is most complex linear IC ever, and includes B-type characteristic for compatibility.

## Summer 1981

Total number of consumer products manufactured with Dolby B-type NR surpasses 100 million.

## August 1981

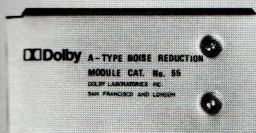
Dolby Stereo film festival at Magic Lantern Theatre, Bridgton, Maine, screens 22 Dolby Stereo titles in three weeks.

MTV, first full-time cable television service with stereo sound encoded with Dolby B-type noise reduction, begins broadcasting nationwide.

## 1981



Dolby Cat. No. 221 two-channel A-type NR module for Sony BVH-1100 and BVH-1000 professional VTRs.



The compact Dolby Cat. No. 55 A-type module enabled new kinds of NR units, including a new family of modules for use within professional videotape recorders (VTRs).



The CP200, the most advanced and comprehensive Dolby cinema processor to date.





Dolby SP Series multitrack NR unit.



Dolby Cat. No. 226 two-channel A-type NR module for Ampex and Marconi VTRs.

## September 1981

Production samples of first Dolby B-type/C-type IC, Hitachi HA10238, sent to licensees for evaluation. First C-type pre-recorded cassettes announced by Desmar Records, New York.

## Autumn 1981

Number of Dolby C-type processors manufactured surpasses one million, only nine months after introduction of first product with C-type noise reduction.

## October 1981

Dolby SP Series professional noise reduction unit introduced at Los Angeles SMPTE and New York AES conventions.

## 1982

### January 1982

First consumer cassette deck with Dolby HX Pro headroom extension introduced at Winter CES by Harman-Kardon.

### April 1982

Dolby Cat. No. 226, two-channel audio noise reduction module for Ampex VPR-2 and Marconi MR-2 professional VTRs, introduced at NAB convention.

Investigation initiated of delta modulation techniques for storage and transmission of high-quality audio.

### July 1982

Introduction of first low-voltage B-type IC by Rohm Corporation facilitates incorporation of Dolby B-type noise reduction in headphone portable cassette players.

First high-speed cassette duplication equipment incorporating Dolby HX Pro announced by ElectroSound.

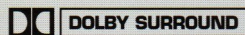
Betacam ENG/EFM equipment with Dolby C-type noise reduction on VTR soundtracks introduced by Sony.

### November 1982

Dolby demonstration film, *listen...*, introduced at SMPTE convention.

### December 1982

First licensed decoder with Dolby Surround circuitry introduced by Surround Sound Inc.



## March 1983

Paper detailing investigation into delta modulation for audio storage and transmission presented at AES convention in Eindhoven, the Netherlands.

## April 1983

Dolby Cat. No. 234, two-channel noise reduction module for Sony BV 2000 professional VTR, introduced at NAB convention.

San Francisco manufacturing facility opened.

## May 1983

Introduction of Dolby Model 372, a portable two-channel professional A-type noise reduction unit.

Ray Dolby becomes chairman of Dolby Laboratories, appointing Bill Jasper company president.

## June 1983

Capitol Records releases first pre-recorded cassettes produced with Dolby HX Pro.

## February 1984

Production begins of Dolby Cat. No. 248, Dolby HX Pro module for Otari MTR-10/12 series cassette mastering recorder.

## March 1984

Dolby Soundlink ADM, later known as Dolby AC-1, adopted by General Instrument for direct broadcast satellite and cable television applications.

First headphone portable cassette units with Dolby C-type introduced: Sony WM-D2C and WM-D6C.

## April 1984

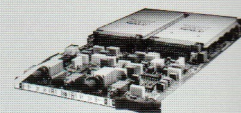
Dolby Model 380, two-channel noise reduction unit for Ampex VPR-3/RCA TH-900 professional VTRs, and Cat. No. 235 interface module for Ampex VPR-80/RCA TH-400, introduced at NAB.

## May 1984

Release of 500th Dolby Stereo film, *The Karate Kid*.

*Indiana Jones and the Temple of Doom* released with more than 1,500 Dolby Stereo prints in US alone.

## 1983



Dolby Cat. No. 234 two-channel A-type NR module for Sony BV2000 VTR.



Dolby Model 372 portable A-type noise reduction unit.

## 1984



Dolby Model 380 noise reduction unit for Ampex VPR-3VTR.



## September 1984

Australian Broadcasting Corporation adopts Dolby AC-1 for direct broadcast satellite use beginning in 1985.

1985

## January 1985

Second MTV channel, VH1, begins operation in US using Dolby AC-1 for satellite distribution.

## February 1985

Dolby CP55 35 mm Cinema Processor with automated features introduced at ShoWest in Las Vegas.

## March 1985

First AC-1 encoding unit, Dolby DP80, manufactured in San Francisco.

## Summer 1985

First video disc and cassette software issued with Dolby Surround trademark.

## October 1985

Dolby AC-1 incorporated into AUSSAT 1, Australia's direct broadcast satellite.

Cost-effective Dolby XP Series multitrack A-type noise reduction unit introduced at AES in New York.

## January 1986

San Francisco finance and administration, engineering, licensing, and manufacturing consolidated in refurbished warehouse at 100 Potrero Avenue, San Francisco.

Twelve products with Dolby Surround decoding introduced at CES in Las Vegas.

## March 1986

Dolby SR (spectral recording) introduced at AES in Montreux, Switzerland. Dolby Cat. Nos. 280 (single-track) and 431 (multitrack) modules shown.

## Spring 1986

Dolby SR introduced in US, UK, Germany, and Japan.

## July 1986

European headquarters adds new factory on Union Road, Clapham.

## August 1986

Number of professional tracks equipped with Dolby A-type surpasses 100,000.

## September 1986

Studer introduces A-820 multitrack audio tape recorder with SR or A-type built in.

## Autumn 1986

First delivery of Dolby Cat. No. 280 SR modules.

Dolby Stereo SR 35 mm optical format demonstrated to the Academy of Motion Picture Arts and Sciences.

## October 1986

Agreements completed with first three consumer licensees in People's Republic of China.

## November 1986

Release of 1,000th Dolby Stereo film, *Heartbreak Ridge*.

## January 1987

First Dolby Pro Logic directional enhancement surround decoder shown at CES.

CBS broadcasts Super Bowl XXI in Dolby Surround.

## March 1987

Sony BVH-3000 C-format VTR with switchable SR/A-type OEM module introduced at NAB.

## Spring 1987

Production quantities of Cat. No. 431 SR modules manufactured.

Joint effort with Graham Patten Systems to supply Australian independent TV stations with video/audio distribution system incorporating DP85s.

## May 1987

Release of first Dolby Stereo film mixed in China, *The First Woman in the Forest*.

Concord Records releases the first commercial recording prepared with Dolby SR, the Dave Brubeck Quartet's *Blue Rondo*.

## July 1987

First Dolby Stereo SR films released: *Innerspace* and *Robocop*.

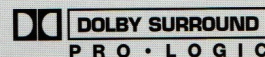
## March 1988

Opening of San Francisco facility's Presentation Studio, including theatre for film and concert presentation, projection room, and audio control/recording room.

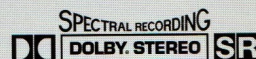


Dolby Cat. No. 280 SR modules could be substituted for Cat. No. 22 modules in existing Dolby NR units.

1987



The Cat. No. 431 SR module was designed for use in Dolby SP and XP multitrack NR units.



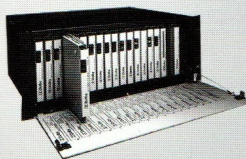
1988



Presentation Studio, San Francisco headquarters.



Dolby CP55 Cinema Processor, replacing the CP50, provides automation features and higher performance.



Dolby Laboratories' first digital product, the DP80 Dolby AC-1 encoder.

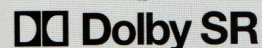


Dolby XP Series multitrack A-type noise reduction unit.

1986



100 Potrero Ave., San Francisco, company headquarters since January 1986.



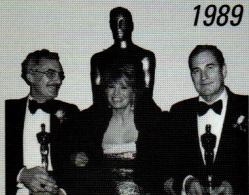




Dolby Cat. No. 43 noise suppressor, widely used in the film industry to clean up soundtrack elements, wins Academy Award for Technical Achievement.



Model 363 two-channel NR unit providing switchable SR and A-type NR.



Ioan Allen (L) and Ray Dolby (R) were presented with their Oscars by Angie Dickinson. ©©A.M.P.A.S.



Model 400, the first software-controlled Dolby NR unit.



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DP500 Series codecs were the first to utilize the Dolby AC-2 algorithm.

Otari introduces MTR 100A multitrack recorder with switchable SR/A-type OEM module at AES in Paris.

#### April 1988

Dolby Laboratories receives Academy Award® for Technical Achievement for Dolby Cat. No. 43 playback-only background noise suppressor.

#### October 1988

Introduction of Dolby Model 363, low-cost, 1-U two-channel unit incorporating Cat. No. 300 switchable SR/A-type modules.

#### November 1988

Studer introduces revised A-820 multitrack audio recorder using Dolby Cat. No. 300 modules.

#### December 1988

Sanyo releases LA2770, first Dolby Pro Logic IC.

### 1989

#### March 1989

Ray Dolby and Ioan Allen awarded Oscars® for "continuing contributions to motion picture sound through the research and development programs of Dolby Laboratories" by Academy of Motion Picture Arts and Sciences.

#### June 1989

Dolby Model 400, software controlled SR/A-type unit, introduced at APRS, London.

First consumer product to incorporate Dolby Time Link digital delay introduced.

#### September 1989

Ray Dolby wins Emmy for "outstanding achievement in engineering development for audio noise reduction systems for professional television tape recorders" by National Academy of Television Arts and Sciences.

First Dolby Surround music-only recording, *The Home Video Album*, released on CD and audio cassette by RCA Victor.

#### October 1989

Dolby S-type, new consumer noise reduction system derived from Dolby SR, demonstrated to Far Eastern licensees and press in Tokyo.

Dolby Model 500 Series AC-2 digital codecs, and software-controlled Dolby MT Series multitrack SR/A-type unit, introduced at AES in New York.

#### November 1989

Dolby S-type demonstrated to European licensees and press in London.

#### January 1990

Dolby S-type demonstrated to US press at CES in Las Vegas. Five licensees exhibit prototype consumer products incorporating new system.

#### April 1990

Dolby 3 Stereo for stereo television sets introduced.

#### June 1990

Release of 100th Dolby Stereo SR film, *Robocop 2*.

#### August 1990

Demonstration in San Francisco of advanced National Television Systems Committee (NTSC) television system combining Dolby AC-2 stereo digital audio and Faroudja Research Enterprises' SuperNTSC video.

Sanyo releases LV1000, first IC incorporating Dolby Time Link digital delay.

#### September 1990

Dolby Model 422 B/C/S encoder introduced at AES.

#### November 1990

First one-inch 24-track recorders with Dolby S-type, Tascam MSR-24S and Fostex G24S, introduced.

#### December 1990

First production cassette decks with Dolby S-type shipped: Harman-Kardon TD4600 and TD4800.

*Dolby Technologies: How They Work*, consumer information laser disc, released. Videocassette version follows in 1991.

#### January 1991

HBO announces expanded use of Dolby Surround on original programming, including all music specials.



Among other features, the software-controlled MT Series multitrack SR/A-type unit provides automatic alignment.

### 1990



The Dolby Model 422 provides tape duplicators with S-type as well as B-type and C-type NR.

### 1991





## February 1991

Development of Dolby Digital, with compatible 35 mm prints providing both digital and analog optical soundtracks, announced at ShoWest in Las Vegas. New format is first application of Dolby AC-3 multichannel digital audio coding.

## April 1991

First demonstrations of Dolby Digital for film industry held in San Francisco. Further demonstrations in Los Angeles, New York, London, Paris, Madrid, Munich, and Milan during summer and autumn.

Skywalker Sound begins using Dolby AC-2 digital coding to transmit high-quality audio over T1 link between facilities in Marin County and Los Angeles.

## August 1991

Introduction of Dolby CP65 Cinema Processor for playback of all 35 mm analog optical formats and interface with new Dolby Digital format.

## September 1991

Dolby DP5500 Series DSTL system, world's first all-digital studio-to-transmitter link, demonstrated at NAB Radio '91 in San Francisco.

First STACE Award, in memory of Dolby Laboratories' longtime National Sales Administrator Stacey Rehm, presented by Theater Equipment Association to Sam Feldman of National Amusements, honoring his "commitment to advancement of technology in film exhibition."

## October 1991

Dolby 430 Series background noise suppressor, based on modified version of Dolby SR, introduced.

## December 1991

TV2 Denmark is first European broadcaster to produce Dolby Surround programming regularly, beginning with Victor Borge's New Year's Eve concert.

## 1992

### January 1992

Lower-cost A-type/SR multitrack unit, Dolby SRP Series, announced.

### April 1992

Dolby DP90, all-new AC-1 encoder, introduced at NAB convention in Las Vegas.

## May 1992

First Dolby DSTL system installed at WWKX FM, Providence, RI.

## June 1992

First film released in Dolby Digital, *Batman Returns*, premieres in ten US theatres equipped with new DA10 Dolby Digital processor and Cat. No. 699 digital soundtrack reader.

Dolby Model 740 Spectral Processor, new type of dynamic equalizer, introduced at Association of Professional Recording Services (APRS) in London.

Granada Television becomes first UK broadcaster to produce original Dolby Surround programming.

## July 1992

BMG Classics announces all new pre-recorded audio cassettes to utilize Dolby S-type beginning in October.

NBC uses Model 430 background noise suppressor for location broadcasts of Summer Olympic Games in Barcelona.

## August 1992

Zoran Corp. develops Dolby Digital (AC-3) ICs for implementing consumer format based on Dolby Digital film format.

## January 1993

Dolby Laboratories European headquarters relocated from London to new facility in Wootton Bassett, Wiltshire.

*Stalingrad*, first non-US Dolby Digital production, opens in ten theatres equipped for Dolby Digital playback in Germany, Austria, and Switzerland.

## February 1993

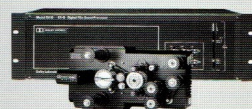
WEA announces all new pre-recorded audio cassettes to utilize Dolby S-type beginning in summer.

## March 1993

World's first Dolby Surround video game, *King Arthur's World*, released in Europe.

## April 1993

HRH The Princess Royal (Princess Anne) officially opens Dolby Laboratories' new European headquarters at Wootton Bassett.



The Model DA10 Dolby Digital adapter and Cat. No. 699 digital soundtrack reader.



The Dolby Model 740 introduced recording and broadcast engineers to a new kind of dynamic EQ.



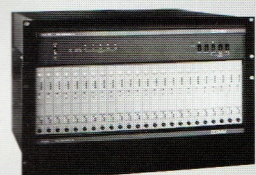
The CP65 became the best-selling Dolby cinema processor ever.



The Dolby DP5500 Series DSTL system, the world's first all-digital studio-to-transmitter link.



Dolby Cat. No. 430 background noise suppressor, based on Dolby SR.



Lower-cost SRP Series brings multitrack Dolby SR within reach of smaller studios.

## 1993



Dolby Laboratories' new European headquarters, Wootton Bassett, Wiltshire, England.



Princess Anne officially opens the new Wootton Bassett facility.



### May 1993

First French Dolby Digital productions, *Ma Saison Préférée* and *Toxic Affair*, screened at Cannes Festival.

### August 1993

First 35 mm soundhead capable of reading both analog and Dolby Digital optical tracks introduced by Cinemeccanica.

### September 1993

First single-chip processor (ZR38000) capable of Dolby Digital coding/decoding made available by Zoran. Application-specific AC-3 ICs announced for second quarter of 1994.

### Autumn 1993

Premiere Television in Germany first European satellite broadcaster to transmit live sports programs in Dolby Surround.

### October 1993

Digital high-definition television (HDTV) Grand Alliance selects Dolby Digital to provide digital surround sound for US HDTV system.

First rock recording mixed in Dolby Surround, "Pictures at an Exhibition," released on Emerson, Lake & Palmer CD *The Return of the Manticore*.

### November 1993

First ISDN transmission utilizing Dolby AC-2 coding (Burbank, CA, to London).

## 1994

### January 1994

First shipments of DA20 adapter and Cat. No. 700 soundhead, streamlined second-generation hardware for playback of Dolby Digital films, reduced cost to equip theatres for Dolby Digital playback.

Dolby DSTL digital studio-transmitter link with twice the power of the original model introduced.

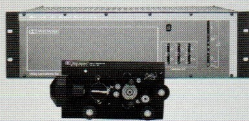
### March 1994

Dolby Fax system for transmitting high-quality audio over ISDN lines introduced.

Two-channel DP521 Dolby AC-3 digital encoder and DP522 decoder introduced, for applications such as DBS and cable systems.



Zoran introduces first single-chip processor capable of Dolby AC-3 digital audio coding and decoding. First used in second-generation DA20 Dolby Digital film sound adapter.



DA20 Dolby Digital adapter and Cat. No. 700 soundtrack reader.



Dolby Fax.



DP521 and DP522 AC-3 digital encoder and decoder.

### May 1994

First Direct Broadcast Satellite service with Dolby Digital audio, DMX for Business, begins.

France Supervision launches Dolby Surround programming with broadcast of Roland Garros tennis championship.

### August 1994

Fox Network begins broadcasting entire National Football League (NFL) season in Dolby Surround.

Hollywood Film Division relocates to expanded facilities at 3375 Barham Boulevard, Los Angeles.

### October 1994

Model DP523, two-channel digital audio encoder supporting AC-2 and AC-3 at as many as four data rates, introduced.

### November 1994

*Interview with the Vampire* is 100th Dolby Digital release. More than 120 foreign language versions of Dolby Digital titles released to date.

Screening room completed at European headquarters in Wootton Bassett.

## January 1995

First Dolby Digital consumer products and laser discs utilizing Dolby Digital announced at CES.

Toshiba and Time Warner demonstrate prototype DVD with Dolby Digital (AC-3) audio.

## February 1995

Ray Dolby awarded Technical Grammy for 1994.

BBC broadcasts first radio production in Dolby Surround, *Bomber*, on BBC Radio 4.

Technicolor London records its 100th Dolby Digital soundtrack, *Nell*.

## March 1995

*West Coast Live* becomes first live US radio show regularly broadcast in Dolby Surround.

New US manufacturing facility opens in Brisbane, CA, near San Francisco.



3375 Barham Blvd., Los Angeles, new home to Dolby Laboratories' Hollywood Film Division.



DP523 encoder shown above companion DP524 decoder.



New screening room at European headquarters.

## 1995



New US manufacturing facility in Brisbane, California, just south of San Francisco.



*Speed* (1994) first film with Dolby Digital soundtrack and eighteenth consecutive film in a Dolby format to win Academy Award for Best Achievement in Sound.

#### Spring 1995

20th Century Fox announces all future releases to be in Dolby Digital.

DP524 two-channel digital decoder supporting both AC-2 and AC-3 introduced; offers bit rates from 56 to 384 kbps.

#### June 1995

Debut of Dolby website, [www.dolby.com](http://www.dolby.com), on Internet.

#### July 1995

Paramount chooses Dolby Digital as primary release format.

#### September 1995

Warner Bros. announces all future titles to be in Dolby Digital.

#### October 1995

Record 3,500 analog and 2,100 digital cinema processors sold in fiscal 1995.

CP500 digital cinema processor introduced at ShowEast in Atlantic City, NJ, combining playback electronics for soundtracks encoded in both analog and digital formats.

#### November 1995

FCC's Advisory Committee recommends adoption of Advanced Television Systems Committee (ATSC) digital TV system with Dolby Digital audio as US digital TV standard.

Introduction of licensing program for Dolby Surround Multimedia.

First MGM/UA Dolby Digital release, *Goldeneye*.

#### December 1995

Dolby Digital prints struck worldwide in 1995 estimated at 400,000; 40,000 in circulation globally at any given time.

Dolby Digital audio mandatory for NTSC countries, optional elsewhere, in final DVD specifications.

#### January 1996

Lower-cost CP45 analog cinema processor introduced at second annual CineAsia convention in Singapore.

Twenty-one consumer products with Dolby Digital decoding shown at CES, Las Vegas; 11 manufacturers display DVD-Video products.

#### February 1996

Theatres worldwide equipped for Dolby Digital playback top 4,000; released and announced Dolby Digital film titles surpass 400.

#### March 1996

Dolby Laboratories receives Scientific and Engineering Award from Academy of Motion Picture Arts and Sciences for design and development of the Dolby Digital Sound System for motion picture exhibition.

#### April 1996

Dolby Laboratories and Microsoft sign letter of intent to jointly develop PC surround sound technologies and specifications supporting use of Dolby Digital and Dolby Surround Pro Logic.

Dolby and Digidesign® announce joint effort to ensure interface between upcoming Dolby Drive and Pro Tools® and AudioVision workstations; Dolby also to develop Dolby Surround encoder/decoder Plug-In.

#### May 1996

Dolby Drive, all-digital, disk-based replacement for classic 35 mm mag film soundtrack dubber, previewed at AES Convention, Copenhagen.

New DP503 encoder featuring Dolby AC-2, Dolby AC-3 and MPEG-1 LII coding also previewed at AES convention.

#### June 1996

First cinema multiplex in Latin America with Dolby Digital on all screens, Cinemex Loreto, opens in Mexico City.

NBC broadcasts opening and closing ceremonies of 1996 Olympic Games in Dolby Surround.

#### September 1996

*Twister*, 100th laser disc with 5.1-channel Dolby Digital audio, released.

#### 1996



Lower-cost Dolby CP45 Cinema Processor enables smaller theatres to equip for reproduction of Dolby A-type and SR soundtracks.



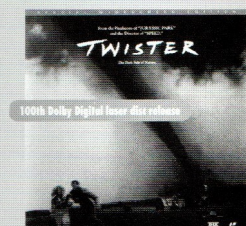
Scientific and Engineering Academy Award presented to Dolby Laboratories for development of Dolby Digital soundtrack.



Dolby CP500 digital cinema processor.



DP503 encoder provides MPEG Layer 2 coding as well as both Dolby AC-2 and Dolby AC-3.



*Twister*, the 100th laser disc released with a Dolby Digital soundtrack.



Fall TV season opens in US with 13 new shows produced in Dolby Surround, bringing current total to more than 50.

First European NTSC laser disc in Dolby Digital, French-language version of *Judge Dredd*, released.

#### October 1996

Record 3,500 Dolby Digital processors sold in fiscal year ending September 30.

*Shine*, 500th Dolby Digital film, screened at ShowEast, Atlantic City, NJ.

#### November 1996

Dolby Surround Tools TDM Plug-Ins for Digidesign Pro Tools workstations demonstrated at AES Convention, Los Angeles.

Dolby Net, low bit-rate version of Dolby Digital, introduced for low-bandwidth applications such as real-time streaming Internet audio.

First DVD-Video players delivered to retailers in Japan.

#### December 1996

FCC adopts digital TV standard for US with Dolby Digital as multichannel digital surround-sound coding of choice.

1997



Volvo C70.

**VIRTUAL  
DOLBY  
SURROUND**

**DVD  
VIDEO**

The first DVD-Video discs and players, which feature Dolby Digital audio, delivered to US retailers in the first quarter of 1997.

#### January 1997

First automobile surround-sound system with Dolby Pro Logic introduced by Volvo at Detroit Motor Show.

Virtual Dolby Surround and Virtual Dolby Digital, enabling surround-sound effect from PCs with just two speakers, introduced at CES, Las Vegas.

#### February 1997

First combination laser disc/DVD-Video players delivered to US retailers.

#### March 1997

*The English Patient* (1996), released exclusively in Dolby Digital, wins Academy Award for Best Achievement in Sound.

First PAL DVD-Video with 5.1-channel Dolby Digital soundtrack, German-language version of *12 Monkeys*, released in Europe.

First software Dolby Digital decoder using MMX technology announced by Intel.

First DVD-only video players delivered to US retailers.

#### April 1997

Dolby DP562 reference decoder with 5.1-channel Dolby Digital and digitally implemented four-channel Pro Logic decoding introduced at NAB Convention, Las Vegas.

First DVD-Video disc titles offered for sale in seven US markets.

#### May 1997

President Clinton names Ray Dolby recipient of National Medal of Technology.

Dolby Digital is the only digital format played at the Cannes Film Festival, including opening and closing films, *The Fifth Element* and *Absolute Power*.

#### June 1997

Dolby DP561B Dolby Digital encoder introduced, featuring lower cost and compliance with European CE specifications for RF emissions and susceptibility.

#### July 1997

Sales of Dolby Digital cinema processors top 10,000; released and announced Dolby Digital film titles surpass 940, plus more than 1,000 foreign-language versions.

*DVD Spectacular*, first music-only DVD-Video title, released by Delos International with 5.1-channel Dolby Digital audio.

British Academy of Film and Television Arts (BAFTA) presents Special Technical Award to Dolby Laboratories "for outstanding achievement in film sound."

Ray Dolby awarded honorary degree, Doctor of Science, by Cambridge University.

#### August 1997

Ray Dolby named recipient of American Electronics Association's Medal of Achievement.

#### September 1997

Dolby DP567 two-channel Dolby Digital encoder introduced at AES Convention, New York.



Dolby DP562 Reference Decoder provides 5.1-channel Dolby Digital and four-channel Pro Logic decoding.



Dolby DP561B 5.1-channel Dolby Digital encoder features lower cost and CE compliance.



## November 1997

Canada and South Korea adopt ATSC digital broadcast TV system with Dolby Digital audio.

## December 1997

Dolby Digital classified as mandatory audio coding for PAL/SECAM DVD-Video discs, as on NTSC discs, enabling worldwide release of discs with only Dolby Digital soundtracks.

1998

## January 1998

Number of Dolby cinema sound processors sold surpasses 50,000 worldwide.

## February 1998

Dolby engineers Kirk Handley, Ray Meluch, Scott Robinson, Wilson Allen, and John Neary presented with Scientific and Technical Awards by Academy of Motion Pictures Arts and Sciences for design, development, and implementation of Dolby CP500 Digital Cinema Processor.

Ioan Allen receives B.J. Sturdivant Award given annually at ShoWest film exhibitors' convention to "an individual who throughout his career has demonstrated a dedication to the exhibition industry and its causes."

## March 1998

More theatres worldwide (13,037) equipped for Dolby Digital than any other digital film sound format.

## May 1998

DIRECTV announces first broadcasts with Dolby Digital 5.1-channel audio, direct digital satellite transmissions of Dolby Digital feature films commencing July 1.

Number of theatres equipped for Dolby Digital tops 14,000 worldwide.

1,380 feature films with Dolby Digital soundtracks, plus 1,700 foreign-language versions, released or announced to date.

## June 1998

Dolby Laboratories agrees to act as licensor of MLP, a lossless audio coding process developed by Meridian Audio for applications such as DVD-Audio.

## July 1998

Number of screens worldwide equipped with Dolby Digital tops 15,000, surpassing closest competitor by over 1,000 screens.

## August 1998

Dolby Digital audio recommended for use with DVB-format digital broadcast TV in Australia.

## September 1998

First live HDTV broadcast with 5.1-channel Dolby Digital audio: college football game aired by WBNS-TV, Columbus, Ohio.

## October 1998

Dolby Digital Surround EX, new theatre sound format with three surround channels co-developed with Lucasfilm THX, announced and demonstrated at ShowEast in Atlantic City, NJ.

Dolby Laboratories awarded Emmy by National Academy of Television Arts and Sciences for "pioneering development of a multichannel digital audio bit-rate reduction system, standardized for the ATSC high-definition and standard-definition television systems, and for worldwide Digital Versatile Disc."

## November 1998

First Dolby Digital Interactive DVD game, *Lander*, from Psygnosis, demonstrated at Comdex '98.

## December 1998

Dolby Headphone signal processor announced, developed by Lake DSP of Sydney, Australia, for cinema-like surround sound over conventional headphones.

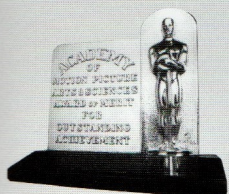
## January 1999

San Francisco product engineering, human resources, and marketing staff move to second San Francisco office at 999 Brannan Street, acquired and renovated in 1998.

## February 1999

David Gray, Vice President, Hollywood Film Division, awarded John A. Bonner Medal of Commendation by Academy of Motion Picture Arts and Sciences in appreciation of "outstanding service and dedication in upholding the high standards of the Academy."

Version 1 of DVD-Audio specifications include two technologies licensed by Dolby Laboratories: MLP for audio zone and Dolby Digital for optional video zone. Latter option enables DVD-Audio discs to play on all DVD-Video players.



Scientific and Technical Academy Award presented to Dolby engineers "for the design, development, and implementation of the CP500 Digital Cinema Processor."



DIRECTV announces DDS transmissions with 5.1-channel Dolby Digital audio.



MLP, licensed by Dolby Laboratories, chosen for use on audio zone of DVD-Audio discs.

**DOLBY**  
**DIGITAL**  
**SURROUND•EX**

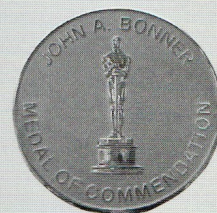


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Emmy awarded to Dolby Laboratories for development of Dolby Digital for DTV and DVD.



1999



Academy's Bonner Medal awarded to Dolby Vice President David Gray.





SA10 Dolby Digital Surround EX adapter.



DP571 and DP572 Dolby E encoder and decoder.

### March 1999

With 2,500 SA10 Cinema Processor adapters ordered, Dolby Digital Surround EX becomes most successful new format launch in cinema sound history.

### April 1999

Debut of DP571 and DP572 Dolby E codecs for use in DTV multichannel audio production and distribution at NAB Convention, Las Vegas.

Number of cinemas equipped with Dolby Digital totals more than 20,000, surpassing all other formats both in North America alone and worldwide.

The Dolby Store opened at [www.dolby.com](http://www.dolby.com), providing merchandise such as posters, T-shirts, how-to guides, and demonstration and test discs.

### May 1999

Singapore Airlines initiates cinema-quality surround sound on in-flight entertainment using Dolby Headphone technology.

First film with Dolby Digital Surround EX soundtrack, *Star Wars: Episode I—The Phantom Menace*, opens in US.

Dolby Laboratories celebrates 25th year of technical assistance to Cannes International Film Festival. Dolby staff were first on hand at 1974 Cannes Festival for screening of *Callan*, first film released with a Dolby soundtrack.

### June 1999

DVB standard with Dolby Digital audio chosen for digital terrestrial broadcasting in Singapore.

Australian broadcaster TCN 9 makes first-ever terrestrial DVB broadcast with Dolby Digital 5.1 multichannel sound.

Encore Media Group, largest provider of cable and satellite movie networks in US, begins transmitting movies encoded in Dolby Digital 5.1 on STARZ! channel over DIRECTV.

### July 1999

DVB Project recognizes Dolby Digital as an optional digital audio standard, enabling DVB broadcasters to transmit exclusively in Dolby Digital.

Ray Dolby presented with honorary degree, Doctor of the University, by the University of York.

### August 1999

German satellite broadcaster ProSieben Media AG becomes first broadcaster in Europe to transmit Dolby Digital 5.1-channel sound.

At Internationale Funkausstellung '99 in Berlin, Canal+, Lemon, Panasonic, Radix, and Sony announce plans for set-top boxes enabling Dolby Digital 5.1-channel sound for DVB digital TV viewers.

### September 1999

ABC begins broadcasting Monday Night Football in HDTV with 5.1-channel Dolby Digital sound.

Model DP563, fully digital implementation of the industry standard SEU4 Dolby Surround Encoder, introduced at AES in New York and International Broadcasting Convention (IBC) in Amsterdam.

First shipments of DP571 Dolby E Encoder and DP572 Dolby E Decoder.

### October 1999

Dolby Laboratories awarded Emmy for outstanding technological achievement for its part in developing DVD technology.

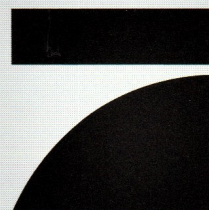
Demonstration at AES convention, New York, of 5.1-channel Dolby Digital audio streamed over Internet from Montreal.

Paris-based digital satellite broadcaster la Télévision Par Satellite (TPS) successfully transmits film trailers with Dolby Digital 5.1 multichannel soundtracks via Eutelsat Hot Bird 4, as part of a demonstration at the 2<sup>nd</sup> International Multichannel Sound Forum.

### November 1999

The British Kinematograph Sound and Television Society (BKSTS) presents Ioan Allen with its Outstanding Contribution to the Industry Award.

*The World Is Not Enough* becomes first UK film production to be released with Dolby Digital Surround EX soundtrack.



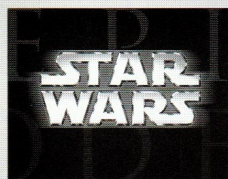
ProSieben Media AG first broadcaster in Europe to transmit Dolby Digital.



Model DP563 Dolby Surround Encoder.



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*Star Wars: Episode I—The Phantom Menace* first film with Dolby Digital Surround EX soundtrack.



Dolby Laboratories celebrates 25th year of technical assistance at Cannes.

**DVB**  
Digital Video  
Broadcasting

Dolby Digital recognized as option for DVB broadcasters.



Dolby Digital Surround EX becomes most rapidly adopted format in cinema sound history, with over 4,600 SA10 adapters sold in introductory year.

Japanese language pages added to [www.dolby.com](http://www.dolby.com) site, covering topics ranging from general company information to products and licensing.

2000



#### January 2000

Dolby Headphone technology, which allows listeners to experience multichannel sound over standard headphones, introduced at CES, Las Vegas.

Showtime Networks becomes first premium cable network to feed program material in HDTV with Dolby Digital 5.1-channel sound.

Number of screens equipped with Dolby Digital exceeds 25,000.

#### February 2000

First consumer product with Dolby Headphone, Prius DECK 601N desktop PC, announced by Hitachi.

#### March 2000

Qantas Airlines initiates in-flight film presentations with Dolby Headphone audio.

Technical marketing program for Advanced Audio Coding (AAC), higher-quality, more efficient successor to MP3, announced by Dolby Laboratories, AAC co-developer and licensor.



#### April 2000

Debut of DP570 Multichannel Audio Tool, facilitating creation of metadata for Dolby Digital programming, at NAB, Las Vegas.

Debut of DM100 Bitstream Analyzer, for monitoring and testing Dolby Digital, Dolby E, and PCM bitstreams, at NAB, Las Vegas.

NBC commits to Dolby E for DTV program distribution.

RioPort licenses AAC for Internet music delivery.

#### May 2000

First PC DVD player software with Dolby Headphone shipped by MGI Software.

First notebook PC with Dolby Headphone released in Japan by NEC.

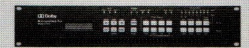
ARM licenses AAC for inclusion in portable music playback devices.

#### June 2000

Dolby CP650, new flagship digital cinema processor, debuts at Cinema Expo in Amsterdam.

Next generation of Dolby Surround Pro Logic decoding, Pro Logic II, is officially announced.

AAC licensed by S3's Rio Group for inclusion in third-generation portable digital audio devices.



DP570 Multichannel Audio Tool.



DM100 Bitstream Analyzer.



CP650 Digital Cinema Processor.





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