

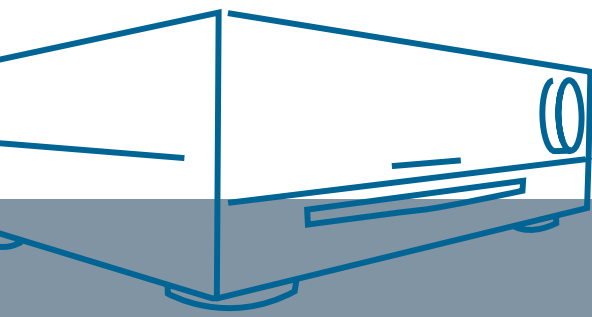
## MP3 Decoding in Harman Kardon Products.

Harman Kardon has long been a technological leader in the audio industry, with a long list of "firsts" that includes the first stereo receiver, the first use of Dolby® Type B noise reduction in a cassette player and, more recently, the world's first receiver to feature Logic 7® and VMaX® digital audio processing, and the world's first digital path receivers. Continuing this tradition of innovation, Harman Kardon was the first brand to fully embrace MP3 technology by offering MP3 playback in both a DVD player and a CD-R/RW recorder. Harman Kardon's audio/video receivers are the first to integrate MP3 with built-in decoding and both coaxial and optical front-panel digital inputs. Now, enjoying the wide variety of MP3 audio content is as simple as playing an MP3-encoded CD in a DVD 25 or DVD 101, or connecting the output of a compatible computer sound card to the digital input of an AVR 325, AVR 525, AVR 7200, DPR 1001 or DPR 2001.

### The Basics of MP3 Audio

From a technical definition standpoint, what is popularly referred to as "MP3" is more precisely the "Level 3" format for recording audio in the MPEG-1 video compression standard. In simple terms, this means that an MP3 file is a digitally compressed version of an audio track. The original audio may be a file initially created for distribution in the MP3 form, or it may be created from an existing source, such as a CD. The difference between standard digital audio files and an MP3 file is that the average 3-minute song takes up about 32 megabytes of space, but the MP3 takes up considerably less memory, enabling more songs to be placed on a single disc or memory card, with little compromise in sound quality. The compression process relies on oddities of human perceptions of sound. For example, louder sounds mask softer sounds so that we don't hear them, and sometimes the same material is repeated in both channels of a stereo recording.

MP3 is changing the face of music distribution, as the smaller file size makes it possible to distribute audio over the Internet without the lengthy download times that would be required if the files were in their original, uncompressed size. The availability of MP3-encoded music has also made it possible for consumers to exchange songs via the Internet, or store their CD libraries on a computer. These files may be transferred to a portable MP3 player that uses solid-state storage or mini-drives, and if the computer is equipped with a CD-R/RW drive, the MP3 files may also be used to record "MP3 discs." These discs may be played on computers or specially equipped CD or DVD players, such as the DVD 25. Finally, MP3 may also be used for the playback of streaming audio programming in real time.



## Harman Kardon Products and MP3

Recognizing the increasing popularity of the many applications of MP3, Harman Kardon has developed two different solutions that integrate MP3 into home audio systems.

For installations where a consumer wishes to play MP3 files directly from a computer-based source, the AVR 325, AVR 525, AVR 7200, DPR 1001 and DPR 2001 receivers can recognize and decode an MP3 bitstream when the output of a compatible computer sound card is connected to one of the AVR's optical or coaxial digital inputs. In the future, more computers and sound cards are expected to include this capability.

Although computers equipped with CD-R/RW drives may create "MP3 CDs," most existing CD and DVD players reject those discs, recognizing them as data, not music, discs. However, both the DVD 25 and DVD 101 are capable of recognizing and playing MP3 audio files from compatible discs. Both models decode MP3 files and play them through the unit's analog outputs for easy connection to ANY audio system.

With a single MP3 disc able to hold about 10 hours of music in the MP3 format, the DVD 25 and DVD 101 can keep the party going all night with just one button press.

## Benefits

While the MP3 format has helped increase the availability of audio selections, until now it has been limited to playback through computer audio systems and portable devices. Now, Harman Kardon allows you to benefit from the high storage capacity and wide variety of material made possible by MP3 through the high-quality amplifiers and speakers in your home entertainment system. From direct connection to a compatible computer sound card or MP3 player, to playback of prerecorded MP3 CDs, to recording of MP3 tracks in standard CD-format mix discs, Harman Kardon is the leader in expanding applications of MP3 for use throughout the home.

Visit the Harman Kardon Web site at  
[www.harmankardon.com](http://www.harmankardon.com).

Harman Kardon, Power for the Digital Revolution and Logic 7 are registered trademarks of Harman International Industries, Incorporated.

\*Trademark of Dolby Laboratories. VMAX is a registered trademark of Harman International Industries, Incorporated, and is an implementation of Cooper Bauck Transaural Stereo under patent license. Windows is a registered trademark of Microsoft Corporation. Part No. MP3DECTSREV1