

Factors that affect writing to or reading from optical media

This document discusses things that can affect your computer's ability to write CD and DVD discs, and what can potentially affect their being read by other computers and consumer electronics equipment.

Several things can affect the mastering of recordable media and the ability to read them by other devices. These factors equally apply to CD-R, CD-RW, DVD-R, and DVD-RW media.

To consistently achieve successful burns, be aware of these factors

The source for the media

Third-party discs that conform to the specifications of the drive should operate as expected. However, since Apple has not physically tested these discs, you should contact the manufacturer if full compatibility cannot be achieved.

Take special care with media that's rated at higher burn speeds than what the drive supports. Example – using 16x DVD-R media with a drive that's only rated to burn up to 4x or 8x speeds. Generally, you can use such newer/higher-speed media in older drives – in some cases, this newer media can't be recognized consistently, and will either burn at a speed slower than the maximum rated for the drive, may result in media that completes the burn but performs poorly afterwards, or may not be recognized at all. When in doubt, use Apple media, or 3rd party media that's designed specifically for the capabilities of your optical drive. Apple-brand discs are tested and qualified for use with Apple-installed optical drives and are fully compatible.

The optical drive used to master the media

Earlier optical drives may have issues reading modern media. Early DVD-ROM drives, for example, may not read burned DVD-R or DVD-RW discs. Some may read DVD-R, but not DVD-RW. This is true for consumer audio CD players, car audio players, and DVD-Video players, too. Depending on when the drive was manufactured, it may or may not be compatible with certain burned media. SuperDrives may have issues reading particular brands of media, or newer/high-speed DVD-R/DVD+R/DVD-RW media that was not available when the drive was introduced. Check the documentation that came with the player, or check with the manufacturer for more information.

A firmware update may be available that improves compatibility. Even if it is considered "compatible" with certain media, you may encounter issues with some brands of media, or issues with media burned at certain speeds

The software used to master the media

Make sure the application software you use to master the discs is up to date. Make sure the options you choose in the application, such as the burn speed, work with the drive and the media you are using. Varying the burn speed may affect the compatibility of the media in the playback device. This may make a difference in the accuracy of the mastering of an audio CD or DVD. Burning applications often perform a verification after the burning process is complete. This ensures that the final disc is ready for playback. If the verification fails, try choosing a slower burn speed.

The connection method for your optical drive

If your burner is connected via USB, you may not be able to burn at the highest speed the drive is capable of using. Trying to burn at too high of a speed may lead to a failed burn because there is not enough bandwidth on the bus.

If you have a SCSI burner, make sure the SCSI cabling is configured correctly, and that the SCSI chain is properly terminated. Issues may result from improper termination. Also, make sure you use properly-shielded cables to connect the burner to the computer.

To successfully use your burned media, be aware of these factors

The source of the media

In general, if you are able to successfully burn discs in a drive, that drive should

be able to read the same discs without an issue.

Note: Apple optical drives work with standard 650 MB-capacity discs, but not all drives work with 700 MB-capacity (80 or 90 minute) discs.

The optical drive used to read the media

Earlier optical drives may have issues reading modern media. Early DVD-ROM drives, for example, may not read burned DVD-R or DVD-RW discs. Some may read DVD-R, but not DVD-RW. This is true for consumer audio CD players, car audio players, and DVD-Video players, too. Depending on when the drive was manufactured, it may or may not be compatible with certain burned media. Check the documentation that came with the player, or check with the manufacturer for more information. A firmware update may be available that improves compatibility. Even if it is considered "compatible" with certain media, you may encounter issues with some brands of media, or issues with media burned at certain speeds.

The software used to read the media

You may find that software designed to copy data to discs cannot successfully copy video or audio to discs. Make sure you are using a current version of the application, and that the software can copy the kind of data you are working with.

For best success in reading media, use the latest version of the Mac OS. Also, make sure that you burn the disc in a format that can be used by the operating system that will read the disc. For example, a CD burned in Mac OS Extended (HFS Plus) format may not work with a Microsoft Windows-based computer.

If a disc's format is not normally recognized by the computer's operating system, you may need to install software that allows the computer to recognize it.