

Recording and Mastering Q & A

How long does it take to burn a CD-R?

The time it takes to burn a CD-R depends on 2 things; how fast are you burning and how much information are you burning. Assuming you are burning a full disc, which would be either 650MB or 700MB, your burn time will depend on your speed. At 1X, it would take 74 minutes to burn a 74 minute / 650MB disc. At 2X, it will take 37 minutes; at 4X it will take 19 minutes. These numbers are rounded of course, but you will be right in there, give or take a minute. If you are only using half of the disc's space, it will take you half the time.

What is the difference between track-at-once and disc-at-once?

Track-at-once is when the CD burner writes the disc one track at a time. This creates a gap in between tracks. This is caused due to the laser turning on and off during the process. This feature is best used when you know you need gaps in between the tracks. These gaps are 2 seconds in length.

Disc-at-once means you write the entire disc at one time. The laser does not turn on and off for multiple tracks. You will still have multiple tracks, but the space between the tracks will be as long or as short as you make them to be within your recording software. If you have tracks that flow into each other, you will want to write disc-at-once. A good rule of thumb most in playing of chances best the you give will This disc-at-once. session record audio, recording or disc a copying are anytime is>

What is the difference between recording on-the-fly and from an image?

When you record on the fly, the information is being read and burned at the same time. The information is stored in a buffer and then burned to the disc from the buffer. The buffer is being filled with new information while the old is being burned to the disc. The benefit of recording on the fly is it requires less hard drive space because you are not storing the information.

Recording from an image can only be done when you save the information as an image file. You will need enough hard drive space to store the information. Image files are complete copies of the data that will appear on the disc.

What does the term "jitter" mean?

Jitter is defined as "a time-based error caused when digital samples are converted back into an analog signal." Audio data consists of the data, as well as the address information for the audio blocks. When the audio data is fed into the buffer, the address information is fed into a different part of the controller. Thus, the data and the address info are separated. Jitter comes into play when the two are inaccurately put back together. This glitch sounds like tiny, repeated clicks. This usually occurs only with audio extraction. To compensate for this, you will want to use jitter correction software, which is performed by most digital audio extraction programs.

What is finalizing and what does it do?

When you burn a CD-R, you have a choice to either burn the disc as an open session or a closed session. As an open session, you are able to add to the disc at a later time. However, open session discs cannot be played on an audio CD player. For playable audio, you need to close the disc, a process that is called "Finalizing." Once closed or finalized, you cannot add any more information to the disc. When you finalize, you are creating the TOC (table of contents) within the lead in. The lead out is also created, thus closing the disc. You are also finalizing the disc when you use disc-at-once recording.

How many files and tracks can I fit on a disc?

A CD can fit up to 99 tracks. This is because track numbers are stored as two-digit number, so it cannot exceed this. As for files, you can fit as many files as you like on a disc, providing that you not exceed the capacity of the disc.

What is SCMS?

SCMS stands for Serial Copy Management System. This is used for consumers to make a copy of an original, but not of the copy. This copy protection is commonly found in consumer brand CD-R recorders. Professional level recorders and computer recorders do not have this restriction.

What is "buffer underrun"?

In order for a CD to burn correctly, the laser must be on and writing to the disc at all times. It cannot stop during the process or it will create a gap on the disc, which may not be read by a CD reader or player. Because of this, CD recorders have what is called a write buffer, which is designed to hold the information pulled from the hard drive, or another CD, and the writer takes the information from the buffer as needed. If there is no information in the buffer when the recorder requests it, you get a "buffer underrun." Since there is no data, the writing process is aborted.

What is "BURN-Proof"?

BURN-Proof is short for "Buffer -Under -Run Proof." What this allows you to do is avoid buffer underruns by suspending and restarting the write process when the recorder's buffer is almost empty.

Can you copy DTS encoded CDs?

Yes you can. Writers will copy CDs with DTS encoding the same as they would copy regular 16 bit stereo audio. But in order to play the CD correctly, you will need to play them in a player that is hooked up to a DTS receiver. Most DVD players currently will play these discs.

Is it possible to create new audio and data CDs?

Yes. With CD-Rs, you are capable of creating new data CDs from the data on your hard drive, or you can create new audio CDs by writing .wav files and .aiff files to the disc. In either case, these finished CDs will work in computers and players, making them fully functional. You cannot make new CDs from a pressed CD that you would buy in a store, or from a used CD-R.

Am I able to copy my CDs?

Yes, for the most part, CDs can be copied or duplicated. In the audio world, most of the CDs you can purchase in a store do not have copy protection written to them. Many CD-ROM's are free of copy protection as well, though the PC game market is starting to implement more copy protection on their new releases. Remember, CDs that you purchase, whether audio or data, are protected by copyright laws.

How can I copy a CD?

When you purchase a CD burner, the software that accompanies it usually has a selection for CD-to-CD copying. The master disc is placed into the CD-ROM drive and the blank is placed into the burner. Hit start and the copy process begins. Another way to copy CDs is to purchase a duplicator. This is designed for people that need to make copies and can't afford to use their computers to make the copies. It is also for people that need a certain quantity of discs that would take too long to do on a traditional computer. Either way will work for you.

Is it possible to write more than disc capacity allows?

Strangely enough, it is possible to write more than capacity. When a CD-R is burned, it places about 90 seconds of digital silence on the end of the disc. This is called the lead out. With some burning software, you are able to record beyond the capacity and use that 90 seconds of lead out time. You are not gaining huge amounts of time, but it may help you get that last piece of information on the disc. Remember, this is not fool proof. This may lead to many failed burns, thus creating a large pile of coasters. Before committing to writing beyond the disc space, experiment with different discs and different software to see if you can get it to work. Another thing to keep in mind is by burning in this fashion, your CD may not be well read by other CD players.

Can I put my photos on a CD-R?

Yes. This is done quite frequently I might add. The first step to putting your pictures on a disc is to get them onto your computer. This can be done by scanning the pictures using a computer scanner, or if you use a digital camera, you can send the pictures directly to the computer, thus keeping the digital quality. Once the pictures are on the computer, you may need to touch them up. There are many photo editing software packages on the market in all price ranges.

When the picture is ready, the easiest way is to save them as a JPEG or a TIFF. Then you can burn these files to a disc and show them to anyone using a computer. Some burning software programs contain photo album features that allow you to set up your pictures, add features like music, and the program will create features like slide shows, video postcards, and web albums.

Can I make an audio CD from MP3 files?

Yes you can. Just select the mp3 files as you would .wav files and burn them to a disc. Then, just play the disc in any player that has an mp3 decoder. Many current CD players have these decoders. If you do not have one, you can buy software that will convert your mp3 files into .wav files. Once the .wav files are burned to a disc, the disc will play on almost every CD player.

How can I make a pressed disc from a CD-R?

You will need to contact a replication facility and see what they will take. In most cases, if your disc is Red Book standard and everything is working correctly, they will replicate your disc for a fee depending on amount of CDs, printing, jewel cases, etc.

Is it illegal to copy CDs?

The laws differ from country to country. In the United States, you are allowed to make an archival backup of software. In regards to music CDs, you are allowed to create a copy of a CD that you own, following certain guidelines. This right is stated in the Home Rights Recording Act. There are many rules to follow under this act, which I encourage you to follow up on if you are not sure if your situation applies.