# General information

**Does MasterLink connect to a computer?**
No. While it does not have a SCSI, FireWire, RS-232, USB or other computer port, the Red Book CDs and CD24s that it "burns" can be read by PC or Mac CD-ROM drives so you can export any audio recorded on the MasterLink to a computer.

**What is a "Red Book" CD?**
A standard audio Compact Disc, meeting the standard set by Sony and Philips, that can be played in any consumer CD player. Red Book CDs feature 16-bit audio at the 44.1 kHz sampling rate only.

**What is a "CD24"?**
A CD24 is a special kind of Compact Disc that can be made and played by the Alesis MasterLink. It allows you to store audio at higher sample rates and word lengths than is allowed by the standard consumer "Red Book" CD format. A CD24 can also be played in a computer's CD-ROM drive.

**How can CD24s be read by a computer?**
Alesis CD24s follow the common PC and Mac-compatible CD-ROM standard ISO 9660, and the audio files on the disc follow the AIFF format readable by almost all audio software.

**Can computer files be read by MasterLink? Can it duplicate CD-ROMs?**
No. MasterLink's CD drive can only read audio CDs and CD24s.

**Can I play a CD24 in a regular CD player?**
No. But a CD24 can be placed into a computer's CD-ROM drive and read by any audio software capable of reading AIFF files in that resolution. And, of course a CD24 can be played back in any MasterLink as if it were a standard audio CD, without having to be downloaded to hard disk.

**I heard that there's a new version of software for MasterLink. Does it cost anything? How do I get it?**
New Version 2.0 operating system software for the Alesis MasterLink is now available at no charge. The MasterLink's internal software is in Flash RAM, so you don't need to take your unit to a service center or install a chip to upgrade your unit. You simply obtain a CD with the new system on it (from your Alesis dealer, Alesis Parts Department, or by download to a computer with CD burning capability) and place it into the MasterLink's CD tray. It will reformat the hard drive on your MasterLink, so backup all important data by making CDs of all your playlists before upgrading your unit.

**What does Version 2.0 add to the features?**
Primarily, it makes editing more versatile. You can now:

- Split a single track into several tracks, or join multiple tracks into one
- Make a copy of an audio file (so you can "chop up" the copy without affecting the original file)
- Quickly import an entire CD to the hard drive, in one operation
- Copy and paste DSP settings from track to track
- Copy playlist information and DSP information to a CD24
- Set start and end points more easily
- Render the DSP to the audio file, making it permanent if desired
- Add a start and end offset time, to keep sections of a track from being "cut off" when played in slow-access CD players
- Loop a song, CD, or playlist for continuous playback.

**Will the hard drive lose any sound quality after using it for a long time from constantly recording onto it and then erasing it to record new music?**
No, the sound quality will remain consistent.

**How can MasterLink help me make the transition to DVD? Why not just buy a DVD burner for my computer?**
There are DVD-RAM peripherals available for computers now, but do not confuse these with DVD-Audio drives. Authoring a true DVD-Audio disc still requires specialized and expensive software and hardware, presently costing many thousands of dollars. Plus, blank DVD-RAM media is much more expensive than CD-R.
DVD-Audio discs will be able to deliver much higher sample rates and word lengths than CD-Audio can. MasterLink allows you to mix down at these higher rates now, and deliver the project on several CD24s to a DVD mastering facility. Their authoring software, in a computer, can read the high-resolution audio files from the CD24s and assemble the tracks into a single DVD. If you have particular processing or arrangements you'd like to suggest to the mastering facility, you can include a Red Book CD with all the songs on it as a guide for the engineer.

# Recording audio on MasterLink

**What sample rates and word lengths are available on MasterLink?**
Sample rates of 44.1, 48, 88.2, and 96 kHz are available. Word lengths of 16, 20, and 24 bits are available. Any combination of sample rate and word length can be used.

**Do I need to purchase an external converter box to record or play back at high sample rates?**
No. The MasterLink has extremely high-quality internal A/D and D/A converters (the AKM 5393 and 4393) that can sample at 96 kHz and have 24-bit resolution. In the opinion of many professionals, these converters and the circuitry around them sound as good as some external converters costing as much as the MasterLink itself.

**Can I record directly to CD?**
No, MasterLink always records to its built-in hard drive first. This allows you to do all the things you couldn't do if you went straight to CD, such as set precise start and end times, add space between songs, and adjust levels and signal processing for each song (not to mention cutting off the noises before and after songs).

**How much recording time does MasterLink have?**
It depends on the sample rate and word length you've chosen. With a totally empty audio file stack, the time available for recording onto the hard disc is (in hours):

| **Sampling rate** | 16-bit | 20-bit | 24-bit |
|---|---|---|---|
| 44.1 kHz | 5.3 | 4.3 | 3.5 |
| 48 kHz | 4.9 | 3.9 | 3.3 |
| 88.1 kHz | 2.6 | 2.1 | 1.7 |
| 96 kHz | 2.4 | 1.9 | 1.6 |

There's an "HD Free Space" counter on the right hand side of the display that will continuously show you how much time is left at the rate you've selected.

**Can you have songs of different resolutions in the same playlist?**
Yes.

**What is a Playlist?**
Playlists are the basic structures that the ML-9600 uses to organize tracks before creating CDs. Each of the sixteen playlists is like a "CD in waiting" on the hard drive: a list of the songs that you want to have on your CD plus instructions for how each song should be processed. Within a playlist, you choose the order you want your songs to appear on the final CD, the amount of time between songs, the relative volume between the songs, what kind of DSP (compression, EQ, limiting) each track should have, and how long fade-ins and fade-outs will be. Playlists allow you to be in charge of exactly how your CD will sound.
Each Playlist can contain up to 99 tracks, which is the Redbook spec. Keep in mind that the tracks in a Playlist are merely *pointers* that point to the Audio File stack on the hard drive. This is why you can change the order of songs and add DSP, etc. without affecting the Audio File itself.

**Is it possible to upgrade the hard drive to a higher-capacity hard disk drive?**

It is theoretically possible–the operating software can handle larger EIDE drives–but changing the hard drive is not suggested by Alesis and any hardware changes to MasterLink will void the warranty.

**What do I do when the drive is full?**
The same thing you'd do on a computer: copy files you're not using anymore onto CD—Rs and then delete those files to free up space.

**After I've deleted a project from the hard drive, how can I restore it?**
Very simple: insert the CD of the previous project, and perform a PLAYLIST RESTORE operation. New Version 2.0 software allows you to move a full CD to the hard disc in a single operation, and even restores playlist data (DSP settings, etc.) if you saved it to the CD24 using the PLAYLIST BACKUP utility. (In the original software, you had to do it one track at a time at 4X speed.)

**What is Playlist Backup? When I restore files, are all my settings restored, or just the audio?**
Each playlist can be saved as a CD in either the Red Book or CD24 format. In CD24 mode with Version 2.0 software, you have a choice: the audio can be rendered through the DSP engine, or you can use Utility #3 to make a Playlist Backup disc.
A Playlist Backup is a special kind of CD24 that saves the audio as original, un-rendered AIFF files, and separately saves all the Track DSP settings as a file that MasterLink can read. This is the method to use if you consider the Playlist a "work in progress". You use the Playlist Restore utility to put the material back on the hard disc just as it was.
The other way to save and restore files is to burn a CD in the usual way. In this case, the audio will be processed as it goes to the CD. Use CD MOVE (a feature of the TRACK MOVE key) to move all the processed tracks on the CD back to a playlist on the hard drive. This is the method to use if you don't anticipate any changes to fade times, EQ, compression, limiting, levels, etc.

**Can I record "live" and mark tracks without stopping?**
Now, with Version 2.0 software, you can. Instead of having to stop the unit, you can press NEW TRACK at any time, and recording will continue with a new track number.

**Can I record one long track, then divide it into separate tracks later?**
Yes, again that's a feature of Version 2.0 software. You can "scrub" to an exact point using TRACK START. Or, simply press PAUSE at the location where you want to split. In either case, hold PLAYLIST EDIT and press NEW TRACK to perform the split.

**Does the ML9600 do sample rate and word length conversion?**
Yes. If you burn a Red Book CD from a playlist containing tracks burned at sample rates other than 44.1 kHz or word lengths higher than 16-bit, it will automatically convert them using a proprietary high-quality dithered process that results in tracks that sound almost identical to the high-resolution originals.

**I don't see a word clock connector on the rear panel. Can I clock the MasterLink from an external source?**
Yes. If you have a valid AES or SPDIF source connected, and select DIGITAL INPUT, MasterLink will automatically switch to External Clock . (Note however that MasterLink always "sees" both digital inputs. If you have *both* formats connected, you will need to power down the source you are not using to avoid a clock conflict.)

**Can MasterLink be a clock slave during recording and playback?**
Absolutely. Keep in mind however that during playback, your MasterLink will play back at the speed of your clock source. For example, if you are playing a 44.1 kHz file from MasterLink's hard drive, but your clock source is set at 48kHz, your file will play back too fast.

**What is the jitter on the MasterLink's internal clock?**
Jitter is a speed variation of the sampling frequency in a digital device, which can cause distortion. MasterLink uses a high-quality internal crystal for very low jitter.

**I am using CONTINUOUS PEAK HOLD for the meters. How do I clear the peak?**
Just press the CURSOR LEFT and RIGHT buttons simultaneously.

**How can I use my DAT with the ML9600?**

Digitally transfer your existing songs on DATs into the ML9600 using standard AES/EBU cables. Then, you can assemble and duplicate your own CDs.

**Will the Start IDs from the DAT be transferred to the MasterLink, automatically creating tracks?**
No, you'll need to press NEW TRACK during recording to increment the track number.

**How can I transfer audio from my computer or ADAT to MasterLink?**
Play the audio via an AES/EBU interface into the digital input of the MasterLink in record mode. (The MasterLink does not have an ADAT Optical input, and cannot read CD-ROMs that are not in the CD-24 format.)

**What is the difference between "S/PDIF" and the "IEC958 Type 1" digital interface that's on the back panel of MasterLink?**
It's a minor technicality. Generally, any product with an RCA/phono type digital connector (usually called "S/PDIF" or "coaxial") is compatible with MasterLink. Few professional products actually use a true S/PDIF protocol, which was developed by Sony and Philips (hence "S/P Digital Interface Format"). S/PDIF's maximum word length is 20 bits, it includes the Serial Copy Management System (SCMS) copy protection bits, and it can carry index markers and start IDs in its subcode. IEC958 is basically the same data stream as AES/EBU, but electronically is unbalanced, at a lower voltage, and on a coaxial connector.

# Mastering, processing, editing

**Once I've recorded audio, how can I edit it?**
MasterLink lets you *crop* the head and tail of a mix (to eliminate noises before or after a mix). You do it by listening to the audio, which MasterLink can play forward or backward at very slow speeds, just like "rocking the reels" on a 2-track analog tape or digital editor, and electronically marking a new start and end point for the file.

**Can MasterLink perform a fadeout at the end of a song?**
Yes, over any period you specify, with three different fade curves.

**Can it crossfade between two songs?**
No.

**Is there DSP (Digital Signal Processing) on board?**
Yes. There is 40-bit floating point DSP. EQ (4 bands, all 20-20kHz, with Hi- and Lo-Shelving), Compression, look-ahead Peak Limiting, Normalizing, Fade In, Fade Out, and Track Gain are available.

**How do I get the hottest signal onto my CDs?**
First, record the signal as hot as possible onto the MasterLink, without going above the 0 dB mark. Then, you can use the MasterLink's built-in DSP compression and look-ahead peak limiting to maximize the apparent loudness of a track. If you still have some headroom left, you can use the Normalizing DSP feature to raise the gain to the highest level possible on a CD.

**What are the correct settings for compression and limiting?**
That's a matter of artistic choice–there is no "correct" setting. But most professional mastering engineers use very subtle amounts of compression, sometimes taking only 1 or 2 dB off the peaks. To find out what you prefer, you can put the same songs into different playlists with different DSP settings, and listen to the resulting CDs for a few days through different systems. It's a great evaluation tool.

**Is the DSP destructive?**
No. Normally, the audio is played "through" the DSP on its way to the CD-R, just as if it were a signal processor patched between two recorders. In Version 2.0 software, you are able to render your DSP and make it part of the actual audio file, if you so choose. The only editing features that are destructive to the basic audio file are Cropping and Splitting (and the latter can be "undone" by Joining).

**Can I quickly get my DSP values back to their default setting?**
Yes, just set the cursor under the value and press the UP/YES and DOWN/NO buttons simultaneously.

**Can I rearrange sections within a song?**
If your MasterLink has Version 2.0 software, you can make copies of any audio file in the "file pile" on the hard disk. You can then "cut up" the copy without changing the original. The Track Split feature allows you to divide a track at precise points. You can then take the segments and place them as elements in a playlist (they will play seamlessly with no space between them), and then, if you wish, use the Track Join feature to "glue" the elements back into a single, new track.

**Does it have a multiband compressor?**
No, the compressor and limiter in MasterLink are the standard fullband type.

# Making your own CDs

**What kind of blank discs does MasterLink use?**
It uses the same low-cost blank CD-Rs that can be found at any computer or office supply store, often costing less than $1 apiece (in quantity). All major brands are compatible and work satisfactorily. It is NOT necessary to purchase the "CD-R Audio" discs required by consumer CD recorders. It does not use "CD-RW" (rewritable) discs.

**Can it use the extended-length 80-minute CDs?**
MasterLink does support 80-minute (700 MB) CDs but be aware that many consumer CD players may not handle playback of the last couple of tracks of a full 80-minute CD. Some players may not even recognize the 80-minute CD when you insert it.

**Can I record at high resolution and still make standard CDs to send out?**
Yes, you can make 24-bit/96 kHz mixes that are DVD-ready, and still create standard Red Book CDs from that playlist. MasterLink will use its state-of-the-art internal sampling rate converter and dithering algorithm to make a standard audio CD that sounds almost as good as the high-resolution originals, even though it's 16-bit/44.1 kHz.

**How long does it take to make CD copies?**
It's pretty fast, but it depends on what your playlist is like. If you have high-resolution files with lots of DSP, the MasterLink takes anywhere from slightly less than real time to 2x-4x speed to either burn a CD24 or, if you are making a Red Book CD, to process the files back to a *rendered image* on the hard disk. Once this rendered image is on the disk, the process is very fast: a 45-minute Red Book CD can be "burned" about every ten minutes.

**Can I send a CD from MasterLink to a duplication plant?**
Yes. If you send them a Red Book CD made by MasterLink, most are able to extract the P and Q codes from the CD's Table of Contents (TOC) and make a "glass master" and make thousands of copies from that master. Some plants are better than others in preserving the spacing and other data, so ask for a reference CD.

**What if I'm using a professional mastering house?**
Most professional mastering engineers want to receive your material in the highest possible resolution, and many of them now have a MasterLink or a digital workstation that can read CD24 disks directly. If they're using analog processing, send your material as 24-bit, 96 kHz files. If they're using digital processing, they'd prefer 24/88.2 files (because then there will be a simpler sample-rate conversion to make a 44.1 kHz CD). For a complete album, you'll send several discs, since at these high rates a blank CD holds no more than 19 to 21 minutes of audio. To show the mastering engineer how you want to assemble the CD master, send written notes and a Red Book version of the CD sequenced the way you envision it.

**Does MasterLink always need to render an image before burning the CD?**
No, rendering is only necessary when you are going to burn a Red Book CD, and you are using DSP and/or sample rate conversion and/or bit reduction. If your tracks are 44.1 kHz/16 bit, with no DSP applied other than Track Gain, no rendering is necessary, and MasterLink will burn the CD directly.

**Is the Rendered Image saved?**
The Rendered Image is saved into a 17th Playlist. This means you can make multiple CD copies of a playlist at 4x speed, without having to wait for the processing. It is then overwritten the next time you need to render a different Playlist.

**Can I slow down the CD recording to 2x or 1x?**
Some people want to do this, under the impression that there will be fewer errors in the disc at slower speed. That may have been true several years ago, but with today's generation of CD-Rs, 4x is just as reliable as slower speeds. In fact, the wow and flutter is less and the drive is more stable at higher speeds.

**When I am burning a CD24, it seems to be slower than real time, although it is supposed to burn at 4X. Why?**
This is due to a common misconception. "4X, 8X," etc. in CD drive specs refer to the data transfer rate of a drive that is spinning at the same speed as a Red Book CD (this is because CD-ROMs are an offshoot of CD-Audio technology). It does not refer to "clock on the wall" time. If you're burning high-resolution files to a CD24, they take longer; for example, a 1-minute standard 16/44.1 file will burn in about 15 seconds, but a 1-minute long 16/88.2 file will take about 30 seconds to burn. The rate of data transfer in each case is in fact 4X, but the larger amount of data will make the second burn appear slower by the counter. For a more detailed explanation of this, please refer to the Owner's Manual section on "Creating a CD".

**I burned a Red Book CD, but when I tried to burn a CD24 as a backup, MasterLink tells me that the Playlist exceeds the disc capacity. What's up?**
If the playlist files are high-resolution, they may exceed the 650 MB capacity of a CD-R even though the total playing time of the playlist is less than the 72 minutes of a standard CD. In addition, CD24 discs are ISO9660 discs that incorporate better error correction than a standard Red Book audio disc. The error correction data takes up some space on the disc, so what fits on a Red Book CD may not fit onto a CD24. Please check the Owner's Manual for a comparison of Red Book vs. CD24 disc capacities.

**When I am burning or test burning a CD, my remote control does not work. Why?**
In order to ensure a perfect "burn", all resources are reserved for the burn process. The remote is therefore disabled during the burn process. However, you can still use the front panel buttons, e.g. for changing the TIME DISPLAY.

**When I use the Limiter, I get the levels right up to 0 dBfs. In my Rendered Image, however, I am getting occasional MAX LEDs. Why? Am I distorting?**
No, your audio is not affected. This is a display-only issue. The Playlist metering works from the 24-bit processing in MasterLink. The Rendered Image is always a 16-bit file. The difference in bit resolution is what is causing the false "Over" displays on the meter.

**Is it possible to take a CD mastered on the unit at 24/96 and download it back on the internal hard drive? Then turn around and cut another CD at 16/44.1?**
Yes, you can perform a Move CD operation from the 24/96 CD-24 disk and burn a Red Book 16/44.1 CD. The unit will Render the image to the drive then burn the CD.

**The Red Book CD I create on the ML-9600 plays fine on other CD players but won't play on my consumer DVD player, Why?**
Because of the difference in DVD laser operation, most consumer DVD players can not read CD-R disks, no matter what drive recorded them. Check you DVD player's documentation for compatibility information. Computer DVD drives do support CD-R playback.