Windows QuickStart
CD-R Deluxe & CD-R Pro

Packing List

The following items should be present in your CD-R bundle:

CD-R Deluxe:
- TEAC 6x24 external CDR drive (CD-R56S)
- CD-R Deluxe Software CD

CD-R Pro:
- TEAC 8x24 external CDR drive (CD-R58S)
- CD-R Pro Software CD

Both Bundles:
- SCSI Card (Adaptec 2903B)
- SCSI Cable
- SCSI Terminator
- (2) Blank CDR media
- TEAC CD-R Drive Installation Guide
- CD-R QuickStart Guide (That'd be this book.)

Installing the Software

A hardware installation booklet has been included with this package; look to it for installation of the SCSI card and CD-Recorder. Also, if you are new to installing software on your PC, be aware that you will probably have to restart the computer in between each installation.

To install the software, make sure your SCSI card and CD-Recorder are already connected. Insert the software CD into your CD-ROM or CD-R drive. There are several programs you will need to install:

SEK'D Red Roaster Lite - (CD-R Deluxe Only)
   Audio Recording, Editing, and Audio CD Authoring

SEK'D Red Roaster 24 - (CD-R Pro Only)
   Audio Recording, Editing, and Audio CD Authoring

Adaptec EZ CD Creator - Data CD Authoring

MyNetMedia SonicBurn - Burning MP3 files to
   Audio CDs on the fly

Xing AudioCatalyst - (CD-R Pro Only)
   MP3 Compression Suite

Introduction to CDR Technology

CDR (Compact Disc Recordable) media can store up to 74 minutes of stereo audio, or up to 650 megabytes of data. CDR media can only be written on once, so the CDR authoring software allows you to design your CD completely before you burn it. Since the CD must contain a directory of what is on it, and since that directory is on the write once media also, all of the information must be burned to the CD at the same time. Recording the information to the CD is done in a Session.

While audio CD players will only recognize the first session on the CD, many CD-ROMs will read multiple sessions. A CD with more than one session is called a Multi-Session CD. So, if the first session of a data CD only contained 200 megabytes of data, you could record another session after it which could contain close to 450 megabytes. (It won't be quite that big because of the extra space taken by the new directory.) Remember though, older CD-ROMs may not search for extra sessions.

With your TASCAM CD-R bundle, you have software capable of recording either data or audio CDs. Here's a brief description of the capabilities of each format:

Audio CD - This is the standard CD format you can use in your audio CD player. You can have up to 99 tracks of audio. The audio tracks must be recorded in stereo at the CD standard of 16bit, 44.1kHz. Audio players will not search for multiple sessions, so everything for the audio player must be burned in the first session of the disc. SEK'D Red Roaster is provided on your software CD so you can record, edit and process your audio, then assemble and burn your masterpiece to a CD.

ISO-9660 - Originally specified for DOS CD-ROM use, the ISO-9660 now has multiple variations for DOS, Windows 95/98, and Macintosh. While more features are available in the later Windows 95/98, the original DOS format will be compatible with machines without Windows 95/98. Since most Macintosh computers can read Windows CDs, this is also a great way to store cross platform material such as JPEGs, HTML, or even word process, spreadsheet, or graphic files. Adaptec EZ CD Creator is provided on your software CD so you can assemble data CDs to back up your important computer data, or assemble your own multimedia CDs.

So to review, CDs can either be written as an audio CD or data CD. Each time information is written to the CD, it records the directory and the target material all in one session. Audio CD players will only recognize the first session, but if you wanted to write multiple data sessions to a CD, most CD-ROMs will read them.
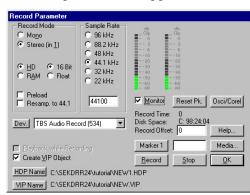
Red Roaster Tutorial:

Set-up & Acquiring Audio

There are two movies on the software CD that will walk you through many of the features of Red Roaster in a folder labeled **SEKD AVI Movies**. However, we are still providing this tutorial to help you through your first session, step-by-step.

When you first start up your program, you will see the toolbars, but no track layout yet. The first thing you need to do is create a VIP (VIrtual Project). To do that, click on the first button. A set-up menu will appear.

The main functions we need to focus on here are the number of tracks, sample rate, and the name of the VIP. Here, we want to make sure we are set to a sample rate of 44.1kHz (shown as 41000 in the menu) since we're planning to record to a CD. Also, be sure to give the project a name you'll remember.
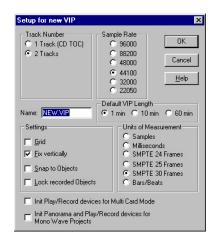
A word about the Tracks setting: It is important to know that "tracks" are actually stereo tracks, not mono. So, if you select 1 track, then you are getting stereo. Selecting 2 tracks gives you 2 stereo tracks which making more detailed editing easier, but reducing the track viewable height size once we get to the editing screen. Typically, I use the "2 Tracks" setting to give me more flexibility when fading from one track to the next.

Once you've set up your VIP, it's time to record some audio. To do this, click on the record button in the top tool bar.

This is where you will want to monitor your input levels. Click on the button labeled "Monitor" (located underneath the level meters) to hear what is coming into your sound card input, and to view the levels on the monitor level.

This screen gives you more options to customize your recording setup, although most of the settings should work fine as is.

If you have multiple sound cards in your PC, you will need to select which card the input is coming from. On the left side of this menu just below center is the sound card selector. Make sure it has the correct sound card input.

To start recording, click on Record. To stop, click on Stop. When you stop, Red Roaster will show you a screen where you can decide if you want to keep the recording, or delete it

and do it again. If you like it, click on "Yes". If you want to do it again, click on "Delete" and record again.

The Recording screen will remain there in case you want to record more tracks. This is handy for importing many individual tracks in the same sitting. If you want to record more tracks, click record and you're recording again. If you're done, click "OK".
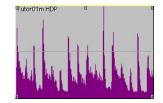
Once you've recorded your audio, the display shows the audio clips in the track screens. Now that your audio is in the VIP, it's time to start editing the audio. But before we do that, let's do the right thing and save where we're at. It's good advice for any kind of work on the computer. Save frequently and often.

Editing/Processing

Now that we have our waveforms on the screen, let's do some basic editing and processing. We're only going to get into the basic editing here... the SEK'D Red Roaster manual will take your through the advanced stuff.

The first thing you'll want to do is select Universal Mode for the cursor. This button gives you different editing functions depending on where you click on the audio. If you click in the top half of the track, you are moving the play/record cursor and selecting regions of audio to manipulate. If you click on the bottom of the audio, you can select the entire block of audio and move it wherever you wish.

Very basic edits can be made simply by selecting the block of audio by clicking in the bottom half of the audio block. Five handles appear in the corners and top of the audio block.

The handles at the bottom of the block move the starting/ending point of the audio. This is a good way to get rid of dead space before and after the tracks.

Fade ins and outs are adjusted with the top left and right handles. Drag the handles inward over the audio to create a fade. If you want to edit the type of cross fade, click on the Crossfade editor in the toolbar.

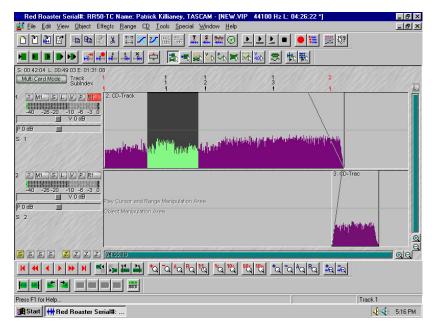Volume adjustments over the entire block are made with the top center handle.

For real time EQ and compression, the mixer section can provide quick and painless solutions. Type "M" to get to the mixer section. The layout is fairly straight forward, arranging everything in the familiar mixer setting.

CD-R Pro Only - For more advanced mastering processors, look under the Effects menu. There you will find multiband compressors, a stereo enhancer, and more. For these to be available, you may have to select the block of audio. Some effects cannot be applied to a freely selected region.

Authoring the CD

Once you have your audio sounding the way you want it, you're ready to start assembling your CD. Since the audio is all laid out in a linear fashion for the CD, all we need to do is drop in the track IDs and index IDs.

Dropping ID's in the VIP is really as simple as placing the cursor where you want the ID and clicking on the type of ID. (Remember, you place the cursor by clicking in the top half of the audio blocks.) There are separate buttons for Track ID and Sub-Index ID. There is also an Auto ID function which will place IDs at the beginning of each block of audio.
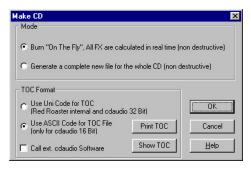
When the IDs are placed, they appear as a tick mark just above the editing screen. There are two rows of numbers which will identify the ID markers. The top number identifies the track number, and the bottom number identifies the index number within that track. (Professional CD players can usually find additional Index markers, which can be useful for sound effect CDs, or for marking particular parts of audio passages for quick reference.)

To move the ID markers, simply click on the tick mark and drag it where ever you wish. To remove ID markers, click on the ID marker and press Delete. If you add or remove markers in between two other established markers, the numbers will update.

Recording the Audio CD

Now you have your audio edited and processed, and your track numbers are all marked. To make a CD out of this, just press the Make CD button. A menu will appear with a number of options.

There are two ways to burn your CD. "On The Fly" means Red Roaster will process everything from your edit screen in real time. This includes crossfades, effects, EQ, and so on. "Generate a completely new file" actually creates a disc image on your hard drive before it will burn the CD.   In other words, it processes everything and stores that final result on your hard drive, and then records to the CD from the image. Either way, it is important to realize that your original data is untouched by either of these options. Your original source audio is not going to be overwritten or altered.

There are advantages and disadvantages to each type, depending on the speed of your CPU and the complexity of your project. Burning on the fly saves you a step, but obviously requires more processing horsepower from your computer. If your computer cannot support "Burn on the fly" for your CD, that can be compensated for by slowing the burn speed down to 4x or 2x.
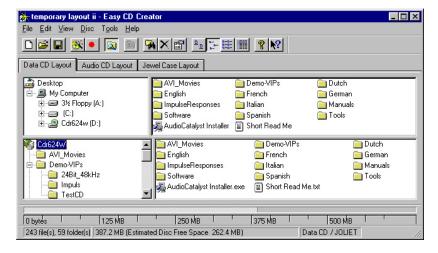
Generating the disc image, then burning from the image offers the most reliable option, however extra time is needed to create the image first. The older the computer, the more likely you will need to burn a disc image first, or slow the burn speed down to give the computer more time to process the information.

Once the computer has finished, you're done! Go ahead and put the disc into the CD player of your choice, and listen to your new masterpiece. You're on CD!

EZ CD Creator Tutorial
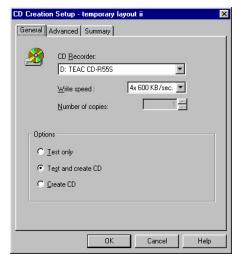
Quick Navigational Tips

Using EZ CD Creator is quite simple, and the EZ CD Creator Wizard can walk you through assembling a Data CD without a hitch. However, the data window itself can use a bit of explanation. This screen is useful if you need to re-order your files. For everything else, use the CD Creator Wizard to walk you through the process.

The top two frames are for browsing your hard drive, and the bottom two represent the CD you are assembling. You can select data from the top frame, and drag it down to the bottom frame. Files can easily be rearranged in the bottom frame to your liking.

When the CD is arranged, go ahead and press the Create CD button, or select "Create CD" from the File menu. You will be prompted to select the write speed, and whether you want to run a test burn, actually burn the CD, or both.

For the first few CDs you make, we highly recommend doing test burns first. Depending on what your source data is coming from, the drive may not be fast enough to support 6x or 8x burns. This can be even further complicated if your drive is "fragmented," meaning the data is not in a continuous block on the drive. (This happens frequently when the drive is nearing capacity.) So just to be safe, run the test before burning for a little while until you are sure the system will run properly.

If your system is having trouble keeping up with the drive, read the "Troubleshooting Underruns" section at the end of this Guide.

AudioCatalyst Tutorial
CD-R Pro Only

What is MP3?

MP3 has created quite a buzz, but what is it really? MP3 is a compression format for storing audio with excellent fidelity, yet only taking approximately 9% of the data space. MP3 is short for MPEG (Moving Picture Expert Group) type 1, layer 3. If you're curious about other types of MPEG compression, you can find their web site at:

http://drogo.cselt.stet.it/mpeg/

What MP3 offers is a way to distribute your music much easier. Currently, the main uses for MP3 are for personal players (walkman-type units) and for internet distribution of audio. You can use MP3 to put a clip of your band on the internet, or even to exchange musical ideas with someone else via email.

AudioCatalyst is an MP3 encoder/player. It can encode regular WAV files to MP3. If you already burned your audio to a CD, you can also use AudioCatalyst to encode files directly from the audio CD.
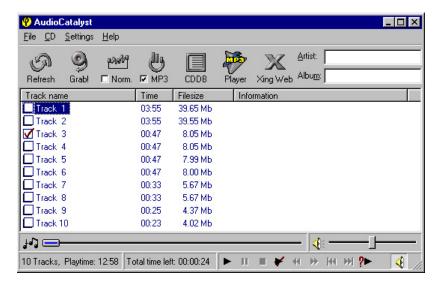
Encoding Options

There are a good deal of options when creating MP3 files. There are different data rates, CBR vs VBR, and mono vs stereo. For your first time, try doing 128kbps, CBR and stereo. That is the typical layout, and the most compatible. For reference, the terms are defined below.

data rate - Data rate simply defines how much throughput the MP3 file will take. The data rate most people use is 128kbps (kilobytes per second), but it can vary from 32kbps up to 320kbps. The higher the data rate, the higher the quality.

CBR vs VBR - In order to capture different sounds with true clarity, some sounds can take less space… other sounds are more demanding. CBR (Constant Bit Rate) was the original spec designed for MP3, and is compatible with virtually all MP3 players. VBR (Variable Bit Rate) basically adjusts the amount of data used to encode the sound according to what is needed. VBR typically sounds better, but older MP3 players may not be able to use it.

mono vs stereo - This is pretty self explanatory, but it is important to realize that a stereo signal does not necessarily take twice as much space as a mono signal. (Ain't compression skwewy?)

Encoding MP3 Files

To select a WAV file to encode, start up AudioCatalyst, go to the File menu, and select Encode Files. You will be prompted to select the WAV file you want to encode as MP3.

If you want to encode a track from a CD, the initial screen should default to the CD-ROM drive. Put the CD you wish to pull audio from in the CD-ROM drive. Then, check the boxes at the left of the track number(s) you want encoded and push the Grab button in the top toolbar.

Once your file is encoded, it can be found in MP3 format in the AudioCatalyst Folder. It will probably appear with the original name of the file, plus the .mp3 suffix. So, track 3 from an audio CD would appear as "Track 3.mp3", and a WAV file called "Pat's Smash Hit.wav" will now be called "Pat's Smash Hit.mp3".

Playing MP3 Files

Playing MP3 files is as easy as assembling your playlist. There is a separate player application called Xing MP3 Player. Boot up that program, and select the files you want to listen to. Click on the Open Files button on the right, and load in the files you want. Remember, you will probably have to go to the AudioCatalyst folder to find those MP3 files you just made.

SonicBurn Tutorial

Burn MP3 files directly to CDs

SonicBurn is a simple, but powerful tool to help you take MP3 files and burn them directly to a standard Red Book standard Audio CD. This can save a lot of time when simply trying to make a compilation of MP3 files that you can listen to anywhere. SonicBurn can also act as a powerful multimedia player/jukebox for audio CDs and MP3 files.

The main areas to focus on are the file lists at the bottom of the screen. The list on the left is your playlist, so that makes up what you are listening to. You can play the song list with the transport bar in the center of the screen.

To add songs to the playlist, click on ADD in between the lists. You will be prompted to locate the song. If you like simply dragging and dropping, just drag the song file into the playlist window.

When you want to start assembling tracks for the CD, move them to the right. You can do that by clicking on the file, and then click on the arrow that shows up in between the two lists. When you're done assembling the CD, click on Record in transport bar. That will start the burning process.

If you want to change your preferences, they can all be accessed by clicking on the box in the upper left corner. From there, you can tell the program to perform test writes, store favorite MP3 sites, change the record speed, or even just remove certain elements from the window for maximum efficiency of screen use.

Troubleshooting

Underruns

Let's start with a basic understanding of what's involved. Here are a few terms you will need to understand to navigate the world of data transfer:

Access Time - How long does it take from the time the computer asks a drive for data until the drive starts spitting it out? This is usually measured in ms (milliseconds).

Throughput (AKA Transfer Rate) - Once the drive finds the information, how fast can it transmit the data? This is usually measured in MB/sec (megabytes per second).

Fragmented or Optimized - Is the information on the drive written in one continuous data stream, or is it broken up into several pieces around the drive? If the data is in one continuous stream, it is optimized. If the data is broken up, then it is fragmented.

Once you understand the previous terms, then we're ready to troubleshoot. Let's first understand the relationship between all of these.

Think of a disk drive as a book. If you are reading a book from page one to the end, you can read a certain number of words per minute. When you read a newspaper and the story on page B1 is continued on page B14, you are spending time looking for the continuation of the story. Even worse is a Choose-Your-Own-Adventure book. With these, you can only read a few paragraphs before you have to find the next part. This slows you down considerably.

So it is with hard drives. If everything is streamlined, then the data will flow quickly. If the drive has to search for all the parts continuously, the data flow suffers.

One suggestion may be to optimize your source drive. That will put each file in one continuous data stream. You can do this with a multitude of applications, such as Norton Utilities.

Another solution is to create a **disc image** which will write (in one continuous data stream) all of the information for the CD to a disk drive, including the directories. This sometimes is necessary for slower hard disks to operate with faster CD burn speeds.

Of course, one other solution is just to reduce the recording speed of the CD-Recorder. Some source disks may just be too slow for higher speed recording (i.e. Zip, old 44meg SyQuest, etc.) Also, if you're just making one quick CD, it may be faster to simply record the CD at 4x, 2x, or 1x instead of defragmenting the drive, then burning the CD at 6x.

Other problems

I am getting nothing but loud static out of Red Roaster. - Red Roaster uses an advanced "Floating Bit" processing algorithm which some rudimentary sound cards can't handle. You probably need to switch the program over to standard 16 bit processing. With your VIP open, go to the File menu and drag down to Preferences. A menu will pop up to the side of the file menu; drag over to Internal Precision and select 16 bit Integer. That should solve your problem.

The CD-R drive is not identified by the program. - The first thing to check when the *program* is not identifying the drive is to see if your *computer* is identifying it:

1) Place the software CD in the CD-R drive so it will have something to pop up with.

2) Go under "My Computer", and see if the CD-R drive pops up. (It will probably be drive D: or drive E: if you have one hard drive and a CD-ROM drive.) If the drive does not show up, then the computer itself is not seeing the drive.

   A) Make sure your cables are securely connected, and that the SCSI terminator is also in place. If you have other SCSI devices in the chain, make sure they have different SCSI IDs than the CD-R drive has. For troubleshooting purposes, it may be wise to disconnect the other devices for now to ensure your SCSI cabling length is not too long, and that the other IDs aren't interfering. *Remember to shut your computer down before changing SCSI IDs or disconnecting SCSI devices.*

   B) Try restarting your computer with the CD-R drive on. (It must be on at boot-up, or it may not get added to the list properly.

3) If the drive is operating properly as a CD-ROM, but not as a CD-R, then check the Device Manager to make sure the SCSI card is properly installed.

I cannot extract audio from my CD-ROM. - If you are trying to extract audio from an audio CD or trying to copy from CD to CD, your CD-ROM must be capable of these functions. (Not all CD-ROMs can do that.) If necessary, your CD-R drive is capable of most of these types of functions, so you may use the CD-R drive to extract to your hard drive, then burn back to the CD.

The drive is not recording to the blank CDs. - There could be several causes for this:

1) Make sure the disc you are using is a regular CD-R media. CD-RW discs are not compatible with this drive. "For Music Only" CDs may also cause problems, as they are designed for use with consumer component CD-Recorders.

2) Make sure the CD-R media is on the list of approved media of this drive. We have tested many types of CD-R media, and the results are posted on our web site at http://www.tascam.com. The list is kept on the site so it may be kept as up to date as possible.

3) While the CD-Recorder is recording, make sure the CD-R drive is not agitated. (If you write as vigorously as I do, even writing the jewel case insert on the same table as the CD-Recorder is on could shake the unit enough.) CD Recording requires much more stability than reading. When reading a CD, players can take several passes at the data stream if the tracking is lost. However, CD-Recorders do not have this luxury. They are recording the information on the CD, and need to do so precisely the first time.

The system is testing too slow for 6x or 8x recording speeds.
- Chances are there is more processing going on than just your CD authoring software.

1) If your computer has a lot of applications running in the background, this can substantially slow the efficiency of your system. (Common culprits are likely to be anti-virus software, screen savers, or advanced network applications.) These can be temporarily disabled to dedicate more processing horsepower to the CD authoring software.

2) In recent years, large disk drives have become more and more affordable, but often the drives many stores advertise are quite slow. If the drive is too slow, then you'll have to try optimizing your drive.

3) In Red Roaster, if you are burning the disc "On The Fly", that means the program is processing your file while it is burning it. Fades, EQ, compression… everything. Of course, we don't want to take out the processing we worked so hard to perfect, so it may be best to create an image to burn from if you are planning on making multiple copies of the CD. If not, it may be best to simply slow the CD-Recording process down. See the section on Underruns at the beginning of this troubleshooting section.

Technical Support

If you are still experiencing problems with the unit after reading the previous troubleshooting section, you can check for more up to date FAQ documents at TASCAM's web site at:

http://www.tascam.com

or contact TASCAM Technical Support at:

(323) 726-0303
custser@teac.com