



CharisMac Engineering, Inc.



MICROBOARDS[®]
Technology

CharisMac Discribe

for

Microboards Disc Publishers

For Mac OS X

Users Manual

Discribe User Guide for Microboards GX-1 Disc Publisher

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Discribe and Driver Installation

If you have not already done so, Discribe and the Microboards GX-1 Drivers must be installed on a hard disk. Once you have installed the software, store the original installer disc in a safe place. Please refer to the GX-1 User's Manual for additional hardware installation information.

1. Insert the Microboards Installation CD in your system's disc drive.
2. Open either the **Microboards PowerPC** or **Microboards Intel** directory, depending on which processor your Mac has. If you are not sure, do not guess! Click the Apple icon in the menu bar and select **About This Mac**; the **Processor** will be listed.
3. Double-click the **Microboards Installer.mpkg** icon in the appropriate directory. Follow the on-screen instructions, read and agree to the end user license agreement.
4. When prompted, enter your administrator password.
5. When prompted, click **Install**.
6. Once the installation has completed, click **Restart**.
7. Restart your Macintosh to complete the installation.

Discribe and the Microboards GX-1 Drivers are now installed!

Getting Started

Open the Discribe application. You will be greeted with the Discribe Quick Start menu which allows access to the three most commonly used functions of the software, Data CD (Build A Mac HFS), Audio CD and CD/DVD Copy. You can disable the Discribe ability to show this window at launch from within the Discribe Preferences. Just open the Discribe Preferences and uncheck the Show Quick Start option and click OK.

You will be viewing the Discribe Quick Start menu. Choose from one of the main functions, Data CD, Audio CD, Copy a CD/DVD, or just drag data directly to this window to create a new project using the Build-A-Mac HFS format. Alternatively you can click the close window button to get to the Discribe main interface which you'll see below.

Choose one of the formats you wish to use on the discs to be written by Discribe in your CD/DVD duplicator. For more information on the specific formats please see below.

Page Setup

When printing using the GX-1 Disc Publisher, you should always select **GX Series** and **120mm disc** in the **Format For** and **Paper Size** Page Setup settings, respectively.

About Disc Formats

Discribe allows the creation of discs in a variety of formats.

- **Macintosh HFS** – Takes a volume that is mounted on the Mac Desktop and copies its contents to a CD or DVD preserving the layout. The disc format is HFS (Hierarchical File System), the standard Mac OS disk format.
- **ISO 9660** – Creates a standard ISO type disc for use with windows based PCs. A good choice if you intend to distribute discs to users in the Windows environment.
- **ISO 9660 XA** – Creates an extended architecture ISO disc better suited for multimedia type files. Excellent choice for disks that will be used in Windows environments, additionally this format works well for the Mac as well. If you don't need to hide Windows files from Mac users or Mac files from Windows users then this is a good cross platform format choice that is easy to create.
- **Audio CD** – Builds a Red Book standard audio CD that can be played back in any CD player which supports the media that you've written to.
- **Build-A-Mac HFS** – For Mac users this is the preferred method for writing discs. This format creates an HFS volume out of files and folders added to the HFS Picker. Also, this is the default format when clicking the "Data CD" button or dragging data to the Discribe Quick Start menu. This is not the preferred method of writing discs if you intend to distribute discs to PC users.
- **Mac/ISO Hybrid** – Creates a disk that is readable natively on the Mac and a Windows PC at the same time. The Mac portion of the disk is written from a mounted volume that contains only the data you want written to the disc in the HFS format. The Windows portion of the disc is created using the ISO picker. Files can be shared among both sides of the disc by including them in the Mac volume and also adding those same files to the ISO Picker window. Shared files will show up with blue text for the filename in the ISO Picker window. The main Benefit of this disc type is that the HFS (Mac) and ISO portions of the disc are kept hidden from each other, so Mac users won't see Windows files and Windows users won't see Mac files (unless files are shared as stated above). This format takes a bit more effort to create than using ISO 9660 XA so if you don't need to "hide" files from the other platform then using ISO 9660 XA would be a better choice.
- **Disc Copy Image** – Uses an image saved by Discribe (and some other disk image types) to write discs.
- **CD/DVD Copy** – Allows you to copy from a disc to blank discs either directly or via a cache file on the hard disc. If the source is one of your writers then Discribe will always cache the disc to a temporary file on your hard disk.
- **CD Extra** – A multi-session disc that contains Audio tracks in the first session and data in the second session. Data session is in the ISO 9660 format.
- **Video CD** – Builds a disc with video from pre-formatted MPEG movie files. Finished disks are playable in any Video CD capable player.
- **DVD Video/Audio** – Format allows you to add any pre-encoded DVD Video files (in a VIDEO_TS folder) to the job for burning a final DVD Video disc.
- **Universal Disc Format (UDF)** – Creates a disc which utilizes the Universal Disc Format (UDF) and is intended for general file mastering. Because the disc is UDF it will be readable in any OS which supports reading UDF discs (Mac and Windows XP included).
- **Stream** – This format is more of a process than a disc format. It sets your robotic duplicator up to be a master disc copying station. In the robot's input bin you would put the desired number of blanks with the master on top. When the process is started Discribe determines that there is a master on top, caches it's contents to a temporary file on your hard disk and proceeds to write to as many blank disks as it finds. You can stack as many masters and blanks as your input spindle will hold continuing the pattern from the bottom; blanks, master, blanks master, blanks, master and so on. Print images can even be queued up so that each set of blanks get a desired printed image.

For the most part, the building of a job within Discribe follows the same basic procedure for each disc format:

1. Select the format from the pop-up menu.
2. Add the desired data (files, audio tracks, volume, etc.) to the job via the appropriate button (Data..., Audio..., CD/DVD Copy from the Quick Start menu) or by picking the specific format from the format pop-up menu in the Discribe Main Window.
3. Click **Burn...** to set specific write options in the Write Options window, like how many discs to write, what label to print (if any), how many rejects are acceptable, etc.
4. Click **Start** to begin the duplication process.

Creating Projects

Build-A-Mac HFS

The default job format is Build-A-Mac HFS (Hierarchical File System). This is a Mac specific data format and should not be used if you intend finished discs to be used in a cross-platform environment.

This format is used when clicking the **Data CD** button from the Discribe Quick Start menu, when dragging files or folders to the Quick Start menu or by just closing the Quick Start menu to reveal the Discribe Main Window.

To perform a Build-A-Mac HFS Project:

1. Open Discribe.
2. Click the **Data CD** button in the Discribe Quick Start menu or drag data from your hard disk directly into the Quick Start Menu.
3. To add data to the project you can drag data directly to the Discribe window, or you can click the **Data...** button to see the HFS Picker window where data can also be dragged.
 - a. The Macintosh HFS Picker window allows you to move, add, rename or remove folders and files as well as name your disc to something more useful than the default of, "Untitled."
 - b. Once finished Click **OK** to return to the Discribe Main Window.
4. You are also able to add audio tracks to your project. To add audio tracks:
 - a. Drag the tracks to the main window. Discribe will add them as Audio tracks rather than Build-A-Mac HFS data converting them where needed, or by clicking **Audio...** to add tracks to the Audio Picker window. The Audio Picker window allows you to sequence, add, and remove tracks.

Note: If you want to add Audio tracks to your project as data instead of audio tracks then click the **Data...** button and add them to the Macintosh HFS Picker window instead of the Audio Picker.
5. When satisfied with the data in your project click the **Burn...** button and you will be presented with the Write Options window.
6. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

ISO 9660 and ISO 9660 XA

Both the ISO 9660 and ISO 9660 XA formats are Windows specific formats. However, both will mount and be usable on the Macintosh. Of the two formats, the ISO 9660 XA format (which stands for Extended Architecture) is more useable on the Mac as it preserves icons better when used on a Mac. ISO 9660 XA is a formidable choice if you want to create a good cross platform disc.

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then just click the close window button in the top left corner.
3. From the format pop-up menu in the Discribe Main Window choose either **ISO 9660** or **ISO 9660 XA**.
4. Once the format has been selected, click the **Data...** button to open the ISO 9660 Picker window.
5. The ISO 9660 Picker window allows you to move, add, rename or remove folders and files as well as name your disc to something more useful than the default of, "Untitled."
6. Once finished Click **OK** to return to the Discribe Main Window.
7. You are also able to add audio tracks to your project. To add audio tracks:

Drag the tracks to the main window. Discribe will add them as Audio tracks rather than ISO 9660 data converting them where needed, or by clicking Audio... to add tracks to the Audio Picker window. The Audio Picker window allows you to sequence, add and remove tracks.

Note: If you want to add Audio tracks to your project as data instead of audio tracks then click the Data... button and add them to the ISO 9660 window instead of the Audio Picker.

8. When satisfied with the data in your new job click the **Burn...** button and you will be presented with the Write Options window.
9. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

Audio CDs

Use this format to create Disk-At-Once (DAO) Red Book Standard Audio CDs playable in any CD player which supports your media type. Discribe requires AIFF audio files to be used for Audio CDs. Tracks of other types will attempt to be converted into AIFF tracks when added to the Audio Picker window.

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then click the **Audio CD** button or drag audio tracks to the Quick Start menu to begin.
3. Once selected click the **Audio...** button to reveal the Audio Picker window.
4. The Audio Picker window allows you to add, sequence, or remove audio tracks. Selection of any track reveals a Quicktime player which will allow you to preview the track.
 - a. Next to each track there is a column which shows pre-gap settings. Gaps can be set from 0 to 9 seconds for each track. You can also set a default pre-gap setting in the Discribe Preferences.
5. Once finished Click **OK** to return to the Discribe Main Window.
6. When satisfied with the data in your new job click the **Burn...** button and you will be presented with the Write Options window.
7. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

Mac/ISO Hybrid

Use this format to create a true Mac and Windows Hybrid CD. This disc is compartmentalized with a Mac portion of the disc (which is not seen by Windows users) and an ISO 9660 portion of the disc (which, subsequently, cannot be seen when used on the Mac). One of the benefits of this disc is “Shared Data” between the Mac and ISO portion of the disc, which means that you can specify specific files and folders to be shared by both sides of the disc while only being written to the disc once.

Hybrid Data Preparation

A hybrid disc is built using two different methods for the Mac and ISO portions of the disc. The Mac data portion needs to reside on it's own volume, in other words, the Mac data needs to be on it's own mounted hard disk or on it's own mounted disk image (created using Apple's Disk Utility application). The ISO 9660 portion of the disk just needs to reside somewhere on a hard disk. However, to share data between the two formats you need to ensure that the data to be shared resides on the Mac volume.

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then click the red window closure button to reveal the Discribe main interface.
3. From the formats pop-up menu choose **Mac/ISO Hybrid**. Discribe will immediately ask you to choose a volume. This volume is the disk where your Mac data and your shared data reside already. Select your volume from the list and click **Choose**.
4. Next you will set up your ISO portion of the disc, do this by clicking the **Data...** button.
 - a. The ISO 9660 Picker window allows you to move, add, rename or remove folders and files as well as name your disc.
 - b. Before clicking **OK**, we need to ensure that we've also added our shared data (if desired). Select, from the volume which is where your Mac data is coming, the desired data into your window which you would like to share and drag it into the ISO 9660 Picker window. Take note that shared items show up in the Picker window using blue text to indicate it is a shared item.
5. Once finished, click **OK** to return to the Discribe Main Window.
6. You are also able to add audio tracks to your job by dragging them to the main window (Discribe will add them as Audio tracks rather than ISO 9660/XA data, if you want to add Audio tracks to the data portion click the **Data...** button and add them to the ISO 9660 Picker window instead) or by clicking **Audio...** to add tracks to the Audio Picker window. The Audio Picker window allows you to sequence, add, and remove tracks.
7. Once finished Click **OK** to return to the Discribe Main Window.
8. When satisfied with the data in your new job click the **Burn...** button and you will be presented with the Write Options window.
9. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

CD/DVD Copy

A very useful function is the Discribe direct CD to CD or DVD to DVD copy function. This function allows you to use another CD or DVD reader or writer to be selected as your read device and then write the data directly from that drive to the CD or DVD writer of your choice.

1. Launch Discribe.
2. From the Discribe Quick Start menu select **Copy a CD/DVD**.
3. Select your Source drive; this is the drive that will contain your master disc. This can be any drive attached to your Mac, even one of the drives built into your robot. If the source disc is in your robot, Discribe will copy the source disc to a temporary file if necessary.
4. Click the **Burn...** button and you will be presented with the Write Options window.
5. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

CD Extra

CD Extra CD-ROMs are CDs which contain Audio and Data on the same CD. It is essentially a two session CD-ROM, on which Discribe writes the Audio tracks first, then the data second. This prevents Audio CD players from mistakenly reading a data track first and potentially damaging your speakers.

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then just click the close window button in the top left corner.
3. From the format pop-up menu in the Discribe Main Window choose **CD Extra** from the format pop-up menu.
4. Once the format has been selected, click the **Data...** button to open the ISO 9660 Picker window.
5. The ISO 9660 Picker window allows you to move, add, rename or remove folders and files as well as name your disc to something more useful than the default of, "Untitled."
6. Once finished Click **OK** to return to the Discribe Main Window.
7. Click the **Audio...** button to reveal the Audio Picker window.
8. The Audio Picker window allows you to add, sequence, or remove audio tracks. Selection of any track reveals a Quicktime player which will allow you to preview the track.
9. Once finished Click **OK** to return to the Discribe Main Window.
10. When satisfied with the data in your new job click the **Burn...** button and you will be presented with the Write Options window.
11. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

Video CD

A Video CD is a CD that contains MPEG 1 data that can be watched on your computer and/or many commercial DVD players). Discribe can create a Video CD using properly formatted MPEG 1 streams. The MPEG-1 streams that Discribe can handle must meet the following criteria:

Resolution: 352x288 (PAL), 352x240 ("FILM"), or 320x240 (NTSC)

Frame Rate: 25fps (PAL), 30 or 29.97fps (NTSC) and 24 or 23.976fps ("FILM")

Video Data Rate: 1152Kbit/sec (some software rounds it to 1150Kbit/sec) or 1.125Mbit/sec

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then just click the close window button in the top left corner.
3. From the format pop-up menu in the Discribe Main Window choose **Video CD** from the format pop-up menu.
4. Once the format has been selected, click the **Video...** button to open the MPEG Picker window.
5. The MPEG Picker window allows you to add, sequence move, add or remove compatible MPEG files as well as title your disc to something more useful than the default of, "VIDEO_CD."
6. Once finished Click **OK** to return to the Discribe Main Window.
7. If desired, click the **Audio...** button to reveal the Audio Picker window.
8. The Audio Picker window allows you to add, sequence, or remove audio tracks.
9. Once finished Click **OK** to return to the Discribe Main Window.
10. When satisfied with the data in your new job click the **Burn...** button and you will be presented with the Write Options window.
11. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

Disc Copy Image

Copies a disc image previously saved to your hard disk by Discribe using the **Write Physical Image...** function under the Utilities pull-down menu.

Creating an Image

1. Launch Discribe.
2. Create a project as describe using one of the other available formats (Build-A-Mac HFS, ISO 9660/XA, UDF, etc.)
3. Once your project has been created choose **Write Physical Image** from the Discribe Utilities pull-down menu. Enter a name for the image and save location and click **Save**.

Writing the Image

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then click the red window closure button to reveal the Discribe main interface.
3. From the formats pop-up menu choose **Disc Copy Image**. Discribe will immediately ask you to choose an available image. Select the desired image from the list and click **Choose**.
4. Click the **Burn...** button and you will be presented with the Write Options window.
5. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

DVD Video/Audio

The Discribe DVD (Digital Versatile Disc) Video/Audio function allows you to write DVD video and audio as well as data to CD-R, CD-RW, DVD-R, DVD-RW, DVD+R, and DVD+RW media. Please note that in order to write to DVD-R, DVD-RW, DVD+R and DVD+RW you will need a DVD drive capable of handling each type of media.

The data is written in the UDF Format (Universal Disc Format) and is cross-platform compatible working on any platform that supports reading UDF discs. In theory, any disc written in this format with video data will be readable in a DVD set-top reader for playback. Limitations will include the set-top reader's ability to work with the individual disc itself. The set-top reader's ability to handle different media types (CD-R, CD-RW, DVD-R, DVD-RW, DVD+R and DVD+RW) is dependent upon several factors. Please check with the manufacturer of your DVD player to see if it is compatible with newer media types. DV Audio/Video discs can be written by any CD-RW and DVD-R/RW drive and on any of the following media types: CD-R, CD-RW, DVD-R, DVD-RW, DVD+R and DVD+RW.

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then just click the close window button in the top left corner.
3. From the format pop-up menu in the Discribe Main Window choose **DVD Audio/Video**.
4. Once the format has been selected, click the **Data...** button to open the DVD Picker window.
 - a. The DVD Picker window allows you to move, add, rename or remove folders and files as well as name your disc.
 - b. If you are writing a DVD Video Disc, make sure there is one folder named VIDEO_TS at the root of the disc, which contains your video object files (.IFO, .VOB, and .BUP files).
5. Once finished Click **OK** to return to the Discribe Main Window.
6. Click **Disc Info...** to edit the disc's ISO 9660 Volume Descriptor if desired.
7. When satisfied with the data in your new job click the **Burn...** button and you will be presented with the Write Options window.
8. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

Universal Disk Format (UDF)

This format allows data to be written in the UDF Format (Universal Disc Format) and is cross-platform compatible working on any platform that supports reading UDF discs.

In theory, any disc written in this format with video data will be readable in a DVD set-top reader for playback. Limitations will include the set-top reader's ability to work with the individual disc itself. The set-top reader's ability to handle different media types (CD-R, CD-RW, DVD-R, DVD-RW, DVD+R and DVD+RW) is dependant upon several factors. Please check with the manufacturer of your DVD player to see if it is compatible with newer media types. UDF discs can be written by any CD-RW and DVD-R/RW drive and on any of the following media types: CD-R, CD-RW, DVD-R, DVD-RW, DVD+R and DVD+RW.

1. Launch Discribe.
2. If starting from the Discribe Quick Start menu then just click the close window button in the top left corner.
3. From the format pop-up menu in the Discribe Main Window choose **DVD Audio/Video**.
4. Once the format has been selected, click the **Data...** button to open the DVD Picker window.
 - a. The DVD Picker window allows you to move, add, rename or remove folders and files as well as name your disc to something more useful than the default of, "Untitled."
5. Once finished Click **OK** to return to the Discribe Main Window.
6. Click **Disc Info...** to edit the disc's ISO 9660 Volume Descriptor if desired.
7. When satisfied with the data in your new job click the **Burn...** button and you will be presented with the Write Options window.
8. The Write Options window lets you choose what print image you want your job to have, how many discs to write, etc. Set your options and click **Start** to begin the write process.

Stream

Stream is a feature that allows you to stack master disks followed by blank disc(s) in the robot's input bin. Discribe will analyze each disc and determine whether the disk is blank or if it contains data. If Discribe encounters a master disc (a disc with data on it) it will read or cache the disc's contents and then write that cached data to the following blank discs.

Print images can also be selected for as many masters as have been placed in the input spindle. The first print image in the print images list will be used for the first master's blanks, the second image for the second master's blanks and so on.

Queuing Jobs

Discribe features the ability to queue several jobs for a combined production run. Queuing is very useful for unattended production runs.

Queuing is done as follows:

1. Launch Discribe.
2. Select the appropriate format and create your project according to the instructions for that project type.
3. Click the **Queue Job** button instead of Robot Write when the job is ready to be queued.
4. You will be prompted to save the job. Click **Save**. Name your job. Click **Save**.
5. Once you have saved your job, you will see the Job Details Pane. If you would like to print an image on the disc, check the **Print Image on Discs** box to enable printing, otherwise skip ahead to the next step. This will enable other buttons in this pane.
 - a. Press the **Choose Image** button to select an image to print.
 - b. Click the **Page Setup** button and set format for your printer.
 - c. **Print Settings** will launch the Printer Driver settings when clicked. Set the number of discs you would like to write.

6. Once you have selected your image and chosen your preferred settings in the Job Details Pane, click **OK** and your job will be submitted in the Queue.
7. Return to the Discribe main menu by clicking on the Discribe pane, bringing it to the foreground. Repeat the steps 3-10 for each individual job to be queued.
8. Once all the jobs have been queued, review the job queue settings window before starting the jobs. The job name, print file and number of copies are displayed.
9. Click **Edit** to edit the number of copies or print file associated with any job. **Stop Job after Number of Writes Fail** allows you to decide how many write failures to allow in the job.
10. Click **Start Jobs** to start all jobs.

Print Discs

Because duplicators integrate printers with their robotics we've incorporated a Print Discs functionality into Discribe. This allows you to print discs using the robotics of the unit to move the disc to the printer and print the desired image.

1. Launch Discribe.
2. Click the close window button in the Quick Start menu.
3. Go to Utilities -> **Print Discs...**
4. In the Print Discs dialog click the **Choose Image...** button and select the desired image.
5. Click **Page Setup** and choose the appropriate printer and page size for your print job.
6. Choose whether or not to clear the robot before printing. You would do this if you knew there was a disc left in the printer for some reason or if you just want to make sure that no discs are in the printer prior to sending the print job.
7. Click **Print** to print the image.

Utilities menu features:

Extract Audio

Allows you to extract audio from a source you select such as an audio CD.

Write Physical Image

Writes a physical image to hard disk of the data in your current project.

Test Robotics

Allows you to cycle discs in duplicator to make sure it's operating properly. This is useful when trouble shooting the duplicator.

Show Job Queue Window

Opens the Job Queue and shows the jobs that have been queued up using the Queue Job feature.

Print Discs

This allows you to print discs using the robotics of the unit to move the disc to the printer and print the desired image.



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