



Saber

Hand Wind Audio Player



User Guide

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<http://globalrecordings.net/saber>

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1. Introduction

The Saber player is an MP3/WMA player with amplifier and speaker. The internal battery can be recharged by turning the handle, or by plugging in an external power source such as a solar panel or power pack. The player is operated from the keypad.

The Saber's on board memory contains documentation and software relating to various aspects of the player's operation. Connect the Saber to a computer using a USB cable to view the documents and run the utility setup program.

This User Guide describes how to operate the player, how to use the various power options, and what to consider when loading new material onto the player.

1.1 *Before You Start*

It is recommended that the Saber be fully charged prior to first use.

1.2 *Other information available*

- Introduction to the Saber card
- SaberCopy Instructions
- Saber Maintenance Guide

The latest versions of all documents and software can be downloaded from <http://globalrecordings.net/saber>.

1.3 *Contact Details*

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 Castle Hill NSW 1765
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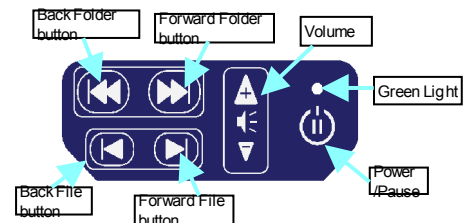
2. Operating the Saber







2.1 The Keypad

The Saber keypad controls all functions of the device.

The buttons are raised, and of different sizes, so that the player can be used in low light or by vision impaired users.

The buttons perform the following functions:



Power /Pause		<p>Before turning on the machine, first turn the handle clockwise for 30 seconds. Then press and hold this button until the green light flashes. (It will take 6-20 seconds to power on.) Continue to turn the handle until the machine starts to play.</p> <p>To pause during play press this button once. The green light will flash slowly. To resume play press this button once again.</p> <p>To turn off the machine, press and hold this button until the green light turns off.</p>
Forward File		<p>Press once to go on to the next file, which may represent an individual message, chapter or song.</p> <p>Press and hold to go fast forward (cue).</p>
Back File		<p>Press once to go back to the previous file, which may represent an individual message, chapter or song.</p> <p>Press and hold to rewind (review).</p>
Forward Folder		<p>Press once to go on to the next folder, which may represent a whole program, book or album.</p> <p>Press and hold to go to the last folder.</p>
Back Folder		<p>Press once to go back to the previous folder, which may represent a whole program, book or album.</p> <p>Press and hold to go to the first folder.</p>
Volume		<p>Press the top button (+) to make the sound louder.</p> <p>Press the bottom button (-) to make the sound softer.</p>

2.2 Indicator lights

The Saber has two lights, one green and one red. The lights indicate the state of the player and battery.

Indicator	Meaning	Action
Green light flashing quickly	The player is getting starting up	Wait until player starts playing
Green light on steady	The player is playing normally	Press buttons on keypad to pause, skip, adjust volume or stop
Green light flashing slowly	The player is paused	Press Power/Pause button briefly to resume playing
Red light on steady	The player is charging	Continue to charge until the red light goes out
Red light flashing	The battery is getting low	Recharge the player by turning the handle or plug in an external power device

2.3 The Internal Battery

Fully charged, the internal battery should allow the Saber to player for 10 hours or more, although this maximum playing time will decrease

When the built-in battery is nearly flat, the red light will start flashing.

To charge the battery

- Turn the crank handle in a clockwise direction.
- Optionally connect a 7.2V 500mA AC adapter, solar panel or battery pack. (The DC socket is 2.1mm, centre pin positive.)

When the unit is charging, the red light will be on. The unit is fully charged when the red light turns off. Remove the power supply when fully charged.

2.4 Caring for the Internal Battery

All batteries have a limited shelf life. Follow these instructions to maximize the Saber's battery life, and minimize the possibility of other problems.

2.4.1 Before First Use: Fully charge the batteries

Batteries lose charge during shipping. Where possible, use the AC/DC Adapter or other external power source to fully charge the batteries before using the Saber for the first time.

2.4.2 Every Time: Ensure the batteries have charge

Turning the Saber on with minimal charge in the batteries can corrupt the files on the player. Unless you are running from an external power source, or you are sure the batteries are already charged, then it is important to follow these steps whenever you use the player:

1. Wind the handle for at least 1 minute
2. Turn on the player
3. Continue to wind the handle at least until the green light stops flashing
4. During playback, wind the handle regularly to maintain charge to the battery

2.4.3 Every Month: Fully charge the batteries

After three months without use, the batteries can reach a critically low charge and may be permanently damaged. Where possible, use an external power source to completely charge the player each month.

Fully charging the Saber from an external power source may take up to 4 hours. (Charging from the Solar Panel takes longer). If the Saber batteries are nearly discharged, but the recharge takes less than 1 hour, then the batteries will not be fully charged. In this case disconnect the external power source, turn the Saber on and play it until the batteries are fully discharged, then reconnect the external power source to charge the player again.

2.5 Power Saving Functions

2.5.1 Volume reduction

When the battery begins to lose charge, the volume of playback is automatically reduced. This reduces the maximum load on the battery, and significantly extends the playback time before the machine shuts down due to low power.

2.5.2 Auto shut down

When the battery power becomes too low to continue playing, the Saber will automatically turn itself off.

When the player has been left on pause for 30 minutes it will turn itself off.

2.6 SD Memory Cards

SD memory cards up to 2GB in size can be used in the Saber's SD memory card slot.

When a SD card is inserted into the player, the onboard internal memory will be disconnected and not able to be used for playing.

It is recommended that SD are only inserted and withdrawn when the player is turned off.

3. Optional Accessories

A range of accessories are available for the Saber for copying files, increasing capacity, recharging the battery, and maintaining the players.

<p>USB Cable</p>		<p>Allows the contents of the Saber to be updated from a computer.</p> <p>The cable is 1m (40 inches) in length, with 5 pin mini USB series B plug at one end, and standard computer style flat USB type A plug at the other.</p>
<p>2GB SD Memory Card</p>		<p>Doubles the Saber's storage capacity, and allows content to be easily exchanged.</p> <p>This is a standard SD memory card.</p>
<p>AC to DC Adapter</p>		<p>Allows the Saber to be recharged from mains power.</p> <p>Input is from 110 volts to 240 volts AC. Output is 7.2 volts DC.</p> <p>Includes four interchangeable power sockets (US, UK, European and Australian) to suit most countries of the world.</p>
<p>12 Volt Adapter</p>		<p>Allows the Saber to be powered from a 12 volt power supply such as a car battery.</p> <p>The cable has a "cigar lighter" plug at one end and 2.1mm DC power plug at the other. Also included is a battery clamp for connecting directly to the terminals of a car battery.</p>
<p>Solar Panel</p>		<p>Allows the Saber to be recharged from sunlight, or even strong fluorescent lights.</p> <p>Coming later in 2009 is a rechargeable battery for the solar panel, which can be charged from sunlight during the day, and then used to recharge the Saber at night.</p>

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Battery Holder		<p>Allows the Saber to be recharged from batteries. Holds 4 "D" cells. Batteries are not included.</p>
Copy Pack		<p>This kit facilitates copying content from computer to up to 7 Saber players at once. Contains a 7 port USB hub, 7 USB cables, and software.</p>
Lock Pack		<p>Enables Saber players to be locked to prevent alteration. Includes tamper-proof screws (sufficient for 50 players) to hinder the opening of the case, and special firmware to lock access to the USB port and/or SD memory card reader.</p>
Maintenance Pack		<p>Contains a range of parts sufficient to make repairs to multiple Saber players. Includes a quantity of replacement belts, screws, side covers and other spare parts, plus documentation and software.</p>

4. Managing Audio Content

4.1 File Structure

The Saber can play MP3 and WMA audio files.

The file system is structured in two levels: files within folders. Each folder represents an album, book or program. Each file in a folder is one track. The Saber has buttons to go forward and backward between tracks, and forward and backward between folders.

Content should be logically grouped into folders and tracks to enable users to quickly jump to the desired content.

4.1.1 The Playlist

The player creates an internal playlist which it uses to manage the structure and sequence of playback.

The playlist is created automatically when the unit is first powered on after changes are made by the computer.

It is recommended that 20Mb of space is left available for the playlist on the internal memory and SD cards. If there is insufficient space to create the playlist, the player will turn on, and the green light flashes at high speed, but will then turn off.

4.2 Navigation

The Saber does not have any kind of visual display to show which folder and track is being played, as these can be unreliable and/or unreadable to the users for which this player has been primarily developed. Therefore it is important to have appropriate audio signals to tell the listener where they are within the whole playlist.

4.2.1 Audio Titles

Audio titles should be included at the beginning of each program, and possibly even each track. These audio titles would announce the name and/or number of the book, chapter or message.

Audio titles should be in the vernacular of the people who will be using the machine. Optionally they could also be in a second language such as a local trade language.

The audio title should be the very first thing heard at the beginning of each track, even before any introductory music. It can even be in a very short track by itself (however care must be taken, as tracks less than 2 seconds long can cause problems on some kinds of players). Either approach allows the user to jump to each track and immediately hear the audio title. This allows specific programs and tracks to be located quickly.

4.2.2 Examples

Recording the Bible: Use a folder for each book, and a track for each chapter or passage. The audio title for each folder would be the name of the book, eg "Genesis". The audio title for each

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track could be in the form "Chapter 1" or "Genesis 1" or "Genesis chapter 1".

Recording Audio Visuals: For programs such as GRN's "Good News" or "Look, Listen and Live" series use a folder for each book, and a track for each picture. The audio title for each folder would be the full name and number of the book, eg "Look, Listen and Live Book 1 - Beginning with God". The audio title for each track would be the full name and number of the picture, eg "Picture 1 - Adam and the Animals". Tracks for introductions and conclusions usually would not require additional audio titles.

Recording a Teaching Series: Use a folder for each topic or sermon, and a track for each individual message or point. Each folder should have an appropriate audio title. Individual tracks may need audio titles if they are separate messages.

Whatever is the nature of material on the Saber, care should be taken if the audio titles rely on a number system, as some users may not be able to count.

4.2.3 If you already have the recording

Recording audio titles can be done easily while the rest of the program is being recorded. But what if you're using a preexisting recording that does not have suitable audio titles?

If you are working with the people group, then it may be possible to record these audio titles separately in the same language.

If it's not possible to record specific audio titles, then another option is to add generic audio titles to each folder and/or track. These generic titles could be in the form "Book 1", "Book 2", or "Item 1", "Item 2", or even just numbers by themselves. Even if these audio titles are not in the vernacular language, they may still be recognizable to people using the player.

GRN plans to release several sets of generic audio titles over time, in various forms and in a number of major languages. GRN's SaberCopy program has the option of adding these type of generic audio titles automatically during the copying process.

4.2.4 Indicating the end of a folder

With many kinds of material, it may also be helpful to give an audio signal for the end of a folder. Otherwise the listener may have to wait until the next program begins to play before knowing when to stop.

There are two ways to indicate the end of a folder: the first is with a clear musical finale, and the second is with a period of silence. It is probably best to use both: a sound or music followed by several seconds of silence.

The SaberCopy utility also has the option to add these kinds of short audio files to the end of every folder. GRN will provide a few different files to choose from. Alternatively you can create and use your own to suit a particular cultural context.

4.3 File Sequence

It is important that the audio files are structured in the correct order so that the Forward File, Back File, Forward Folder and Back Folder buttons work as expected.

The playback sequence of tracks is controlled by the Title tag and short filename of each audio file. Operation of the Forward Folder and Back Folder buttons are controlled by the folder names.

It is recommended that the SaberCopy utility is used where possible, as this can help manage the Title tags and filenames to achieve the desired playing order. (See below for more information.)

4.3.1 ID3 Title Tags

As use of the Title tag for sequencing is very difficult, it is recommended that the Title tags be completely removed from all audio files, and just the filenames be used for sequencing.

There are different ways of editing mp3 audio file tags. It is possible inside the Windows XP and Vista operating systems to right click on the file, select "Properties", select "Summary" tab, select "Advanced >>" and change the Title description. There are also free utilities can can do this, such as <http://www.mp3tag.de>

4.3.2 Folder and File Names

Folders and files must be named in such a way that the short filename is in the correct sequence. This means only the first 6 characters of the filename should be regarded as significant.

Furthermore, the filenames must be sequential within each folder, and overall on the whole drive. In other words, the name of the first file in the second folder must be higher than the name of the last file in the first folder, and this must be true for every subsequent folder as well.

One simple way to achieve this is to add a six digit number to the front of every folder name and every file name. The first three digits should represent the folder, and the second three digits should represent the file. (This assumes there will be no more than 999 folders and 999 files in any folder. If you expect more than this, then you may need to reconsider your file structure.)

Folder names would therefore be in this format:

001000_first folder
002000_second folder
003000_third folder

File names within the first folder would look like this

001001_first file in first folder
001002_second file in first folder
001003_third file in first folder

The file and folder names after the first six digits can be anything at all, as they won't effect the playback sequence. Meaningful filenames are recommended, as this will help when making subsequent modification of the contents of the Saber.

4.4 Loading files onto the Saber

4.4.1 Using the SaberCopy utility

The SaberCopy utility, freely available from GRN, is a Windows based program that assists with the correct sequencing and copying of audio files on to the Saber. Capabilities of SaberCopy include

- stripping the Title tags from MP3 files,
- adding sequence numbers to folder and file names,

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- option to delete existing contents from the Saber before copying,
- checking the total size prior to copying, and reserving space for the playlist
- copying to multiple Sabers or other removable drives at the same time.

Read the SaberCopy User Guide for more information. The latest version of SaberCopy is available on the GRN website at <http://globalrecordings.net/saber>

4.4.2 Transferring files from computer

Follow this procedure to copy files onto the Saber.

- 1) Turn the player off (before connection is made to the computer)
- 2) On the computer start Windows Explorer and view “My Computer”. Identify the existing drives on the computer.
- 3) Connect the player to the computer using a 5 pin Mini B USB cable.
 - * If the USB security firmware has been installed on the player, please refer to security documentation for advice on the connection to the computer.
- 4) About 5 to 50 seconds after the USB connection is made, 2 new removable disk drives will appear in the “My Computer” window (and in SaberCopy if this is running). The first of these new drives will be the internal onboard memory inside the player. The second drive will be the SD Card on the Saber player.
- 5) Use SaberCopy or a manual procedure to remove existing content and/or copy new files to the onboard memory and/or any attached SD card.
- 6) When completed, disconnect the USB cable from the player and computer.
- 7) Turn on the player, and confirm that the audio files play as expected.

5. Troubleshooting

5.1 Player will not charge

Batteries that reach critically low charge may stop accepting a charge from an external power source. In this case, wind the handle for at least 5 minutes so the built in generator can supply a small amount of charge, and then try charging from the external power source again. Alternately, use an external power source with a lower voltage rating (around 5 – 5.5 volts) to apply a slow charge over a longer period of time.

IMPORTANT: It is recommended that you keep winding the handle during playback. This will maintain a good charge in the battery, and extend the battery life.

5.2 Files become corrupted

In some circumstances it is possible for file corruption to occur on the Saber player, preventing the player from playing audio. This problem is primarily caused by the player being started without the crank handle being turned before or during the start of a Saber player.

The following information will assist with identifying to see if the player has the problem, and provide a method to resolve the issue.

5.2.1 Identifying the problem

File corruption can be identified by following these steps:

1. The Saber is charged correctly using an ACX adapter, solar panel or by turning the crank handle for at least 5 minutes.
2. Start Saber. (press and hold the power button until green light starts flashing)
3. The Saber player green light flashes at high speed, and then turns off without playing audio.

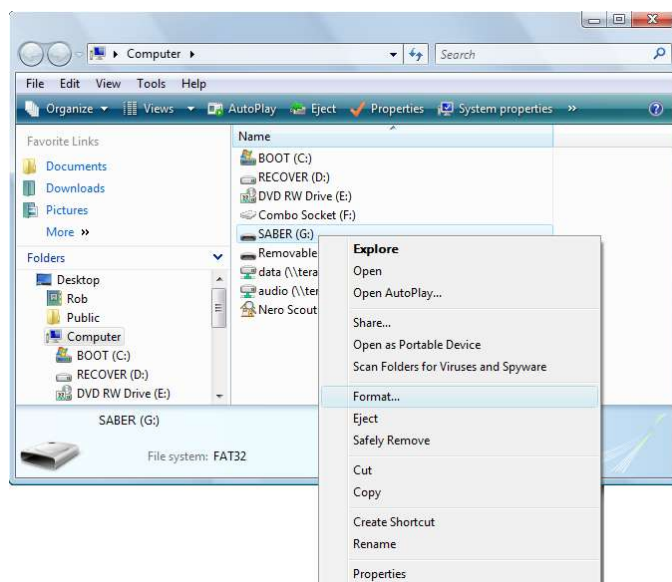
5.2.2 Fixing the problem

The recommended fix is to format the internal Saber drive inside the player to FAT32, and then copy the audio files back on to the player.

Make sure you have a copy of the audio files before formatting. The formatting process will delete all audio files from the player.

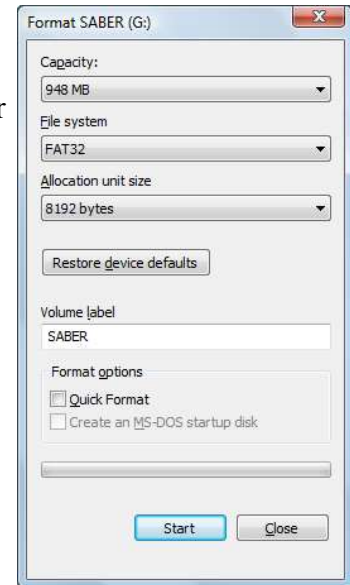
To format the internal Saber drive on a Windows based computer, follow these steps:

1. Close the SaberCopy utility and any other window accessing the Saber drive, if any.



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2. Connect the Saber to the computer using the USB cable.
3. Open “My Computer”.
4. Select the first removable drive which corresponds with the internal Saber drive. This drive may be called either “SABER” or “Removable Disk”.
5. Right click on the drive, and select “Format”. The Format dialog box will be displayed.
6. Confirm capacity is “948Mb”. If this is incorrect, click on “cancel” and reselect the correct drive.
7. Select File system “FAT32”.
8. Ensure the “Quick Format” option is off.
9. Click on “Start”. The computer will take about 30 seconds to format the Saber player.



To copy audio files back onto the player follow the instructions included with the SaberCopy utility available from GRN. This program be downloaded from www.globalrecordings.net/topic/sabersupport.

5.3 Further help

If you are unable to successfully identify or rectify a problem with the player, please contact us at the email below. To assist us in helping you, please be as specific as possible with the problem you are having.

Please include the serial number of the unit, problem description, when the problem started to occur, and any other specific information describing the fault and how it occurred.

Our email address is: saber@globalrecordings.net

6. Saber Specifications

Audio file formats: MP3 or WMA

Onboard memory: 1GB

Memory expansion: Slot for SD memory card up to 2GB

File system: 2 level FAT16 folders and files

File transfer: USB 2.0 through five-pin Mini-USB Series B socket

Built in amplifier: Mono, 400mW typical, 8 ohm speaker

Stereo 1/8" headphone socket, 32 ohm

Internal battery: 3.6V 750mAH rechargeable NiMH

Battery life: Each full charge cycle of the rechargeable battery provides approximately 10 hours at high volume

Hand wind generator requiring about 1 minute winding for every 4 minutes of playing

External power: 2.1mm DC power socket centre pin positive (+) . 6-8Volt input, 320mA.

Display: Green LED for player state, and Red LED for battery condition

Dimensions: 180mm x 123mm x 51mm

Weight: 630g