SGSCopy Utility

SOLAR GROVE
SOLUTIONS

Using SGSCopy to Program Solar Grove Players

Introduction

SGSCopy is a free software program provided free from Solar Grove Solutions (SGS).

SGSCopy makes it easy for you to load audio messages to any of the currently available line of Solar Grove players (and practically any USB mass storage device). Since many SGS players include a microSD card reader, SGSCopy is also a simple way to prepare microSD cards with audio for distribution with those players.

With SGSCopy, you can…

- Copy the contents of an audio message on disk to multiple players concurrently
- Copy the contents of an audio player to multiple microSD cards or USB thumb drives concurrently
- Duplicate the contents of one player to others
- Load a player by aggregating a new audio message "on the fly" from existing folders
- Compare player(s) contents to an audio folder on disk
- Compare a project or specific player's contents against other players or devices.
  Compare two audio folders on disk
- Quickly load batches of players using *Fast Copy Mode* with minimal user intervention
- Append audio to player(s) without overwriting their current contents
- Aggregate files from multiple folders (sources) on disk into a new folder (disk-to-disk)
  Replicate microSD cards faster, cheaper and more accurately than a hardware device
- And much more…

SGSCopy is supported in the following environments: Windows (8.x, 10 and 11). SGSCopy should work on XP and 7 but it is not recommended, as Microsoft no longer supports either platform.

For details on how SGSCopy can be implemented on Mac OSX, please see here.

This guide focuses on the specifics of using SGSCopy with Solar Grove players and typical needs of SGS customers.

Download the installation package

The currently supported version of SGSCopy is **6.1.0.5.**

Click here to download that version of SGSCopy.

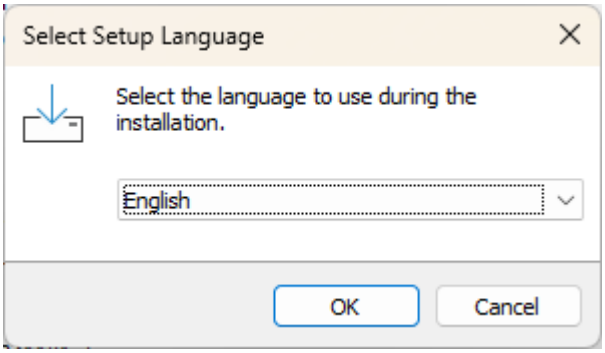
Save the file to your PC. It is recommended to use the default "Downloads" folder.

Install SGSCopy

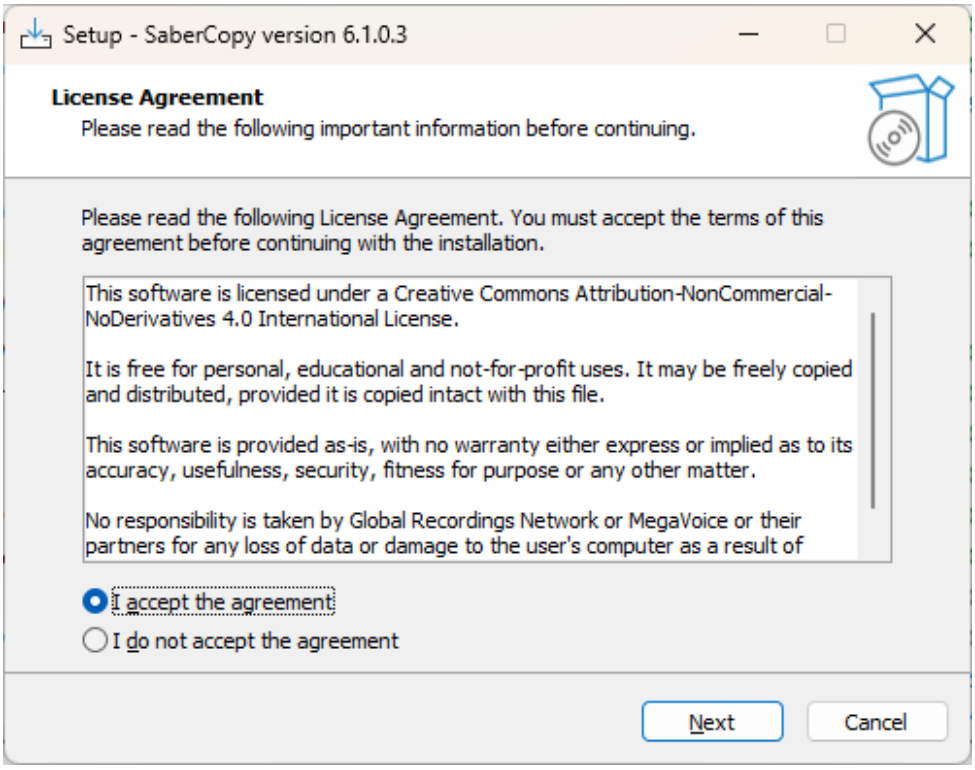
Recently, SGSCopy was converted to a 64-bit application. This will lay the framework for more robust enhancements in the future.
To facilitate the conversion, the installation must recreate the C:\ProgramData\SGSCopy folder. If your currently installed version is pre-6.0.x, and you have any custom templates or player images in that folder, you should back them up before executing the installation and restore them afterwards!

When the installation download completes, navigate to the location where the program was saved and double-click on it.

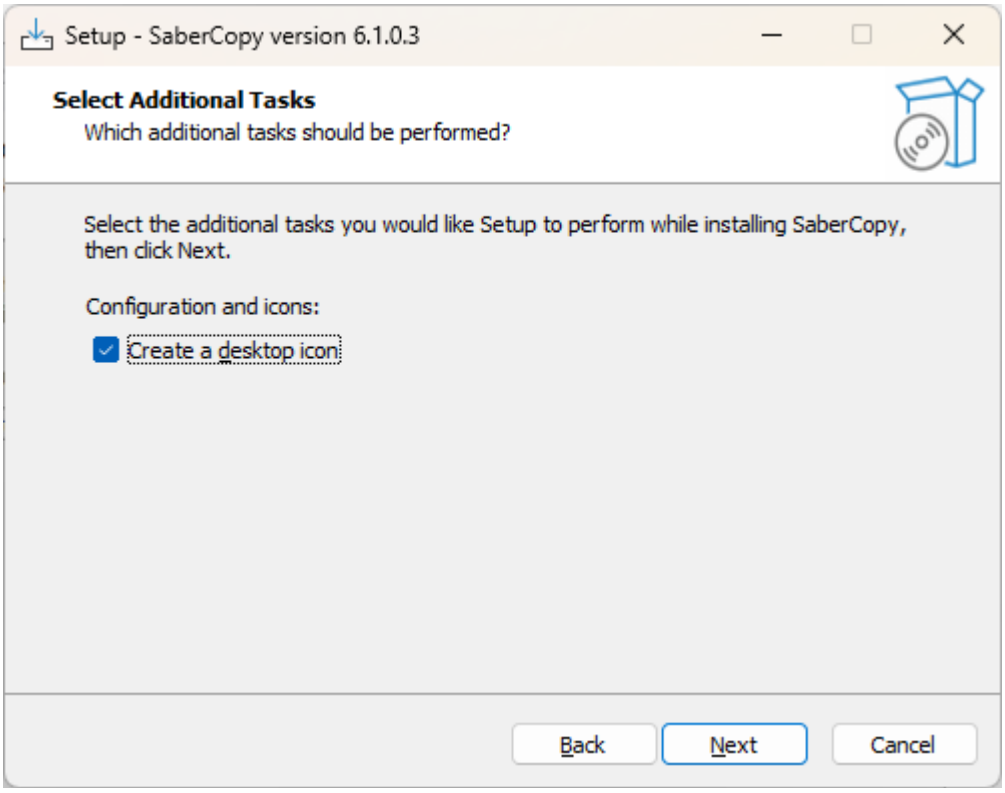
The application includes a language option. This also applies to the installation process. Choose the language you wish to use and click "OK". If this is a first-time installation this will also set that language as the default for normal SGSCopy operation but can be changed at any time. See Language option for more details.



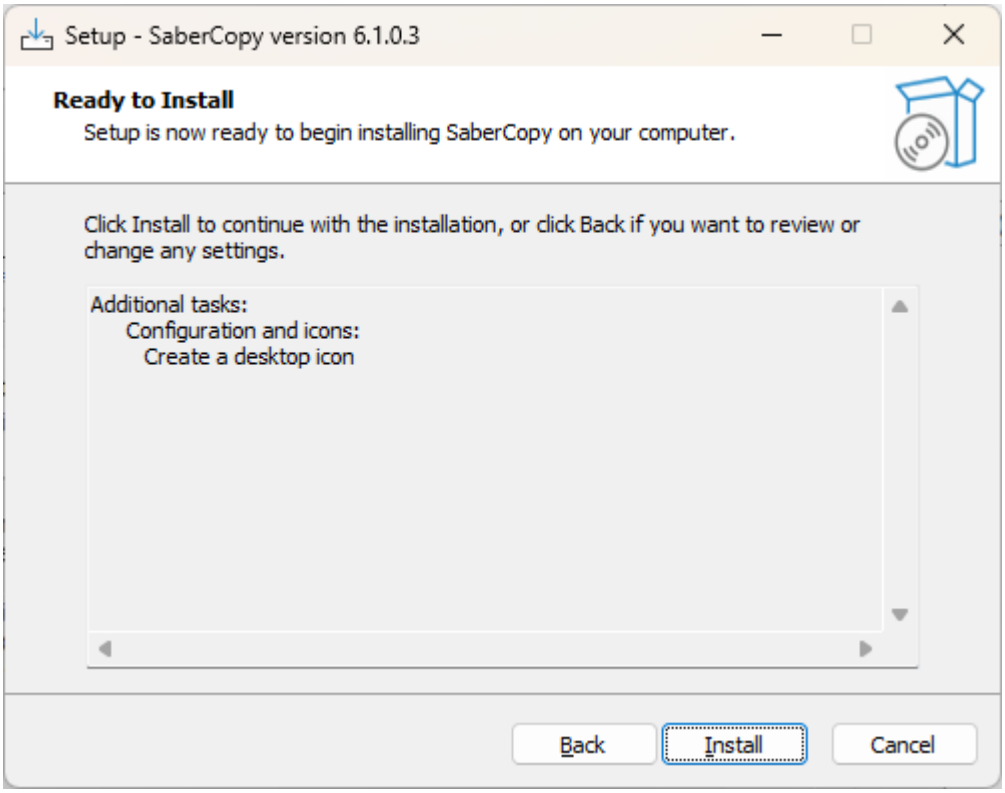
Next, you will get the initial screen below. This is the license agreement. Click on "I accept the agreement" and then click on "Next". If you don't agree to the license, you cannot install SGSCopy. If you agreed to the license click on "Next"…



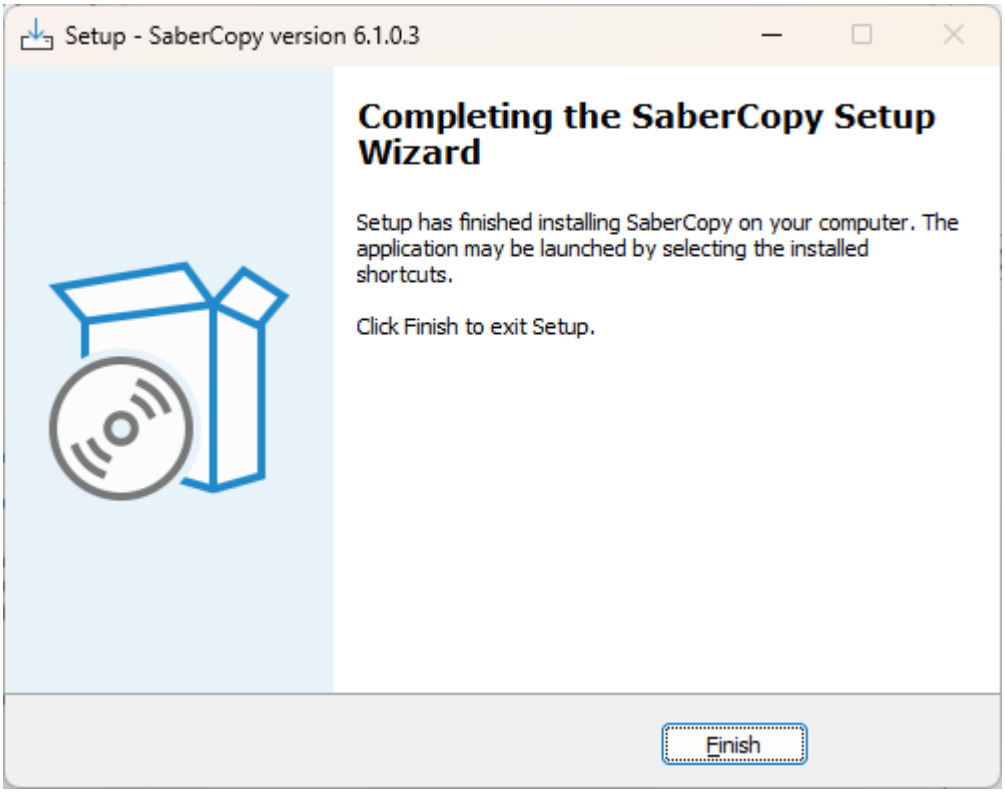
Select the options you want and click “Next” (it is recommended to accept the default)…



Click on “Install” and the installation will begin…



The installation is now complete. Click on “Finish” to exit.

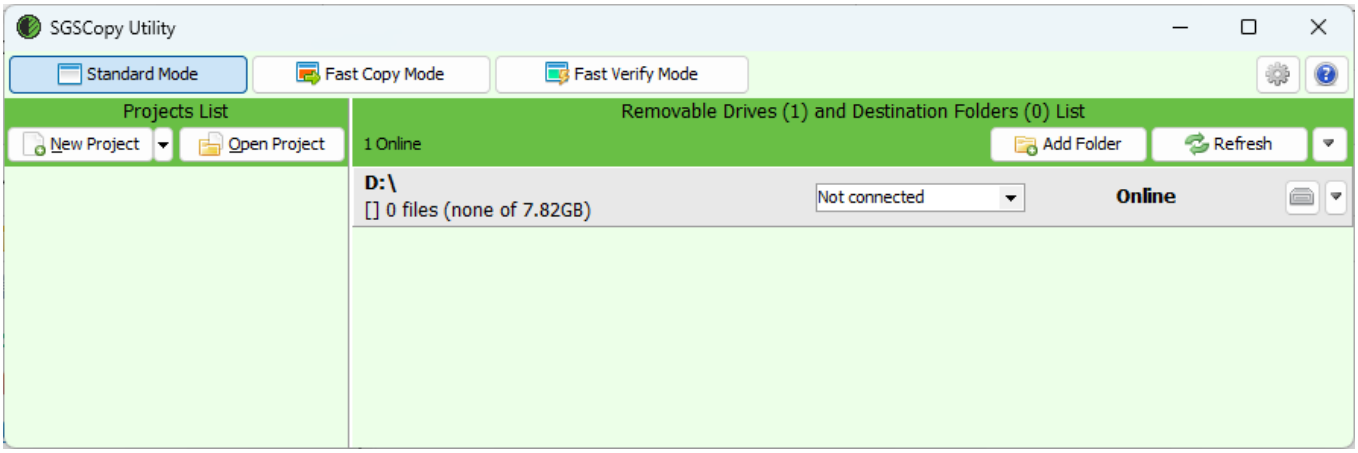


If you took the installation defaults, there should be an updated icon (versions 6.0.x and later) on your desktop like the one below. Double-click on it to start the application.

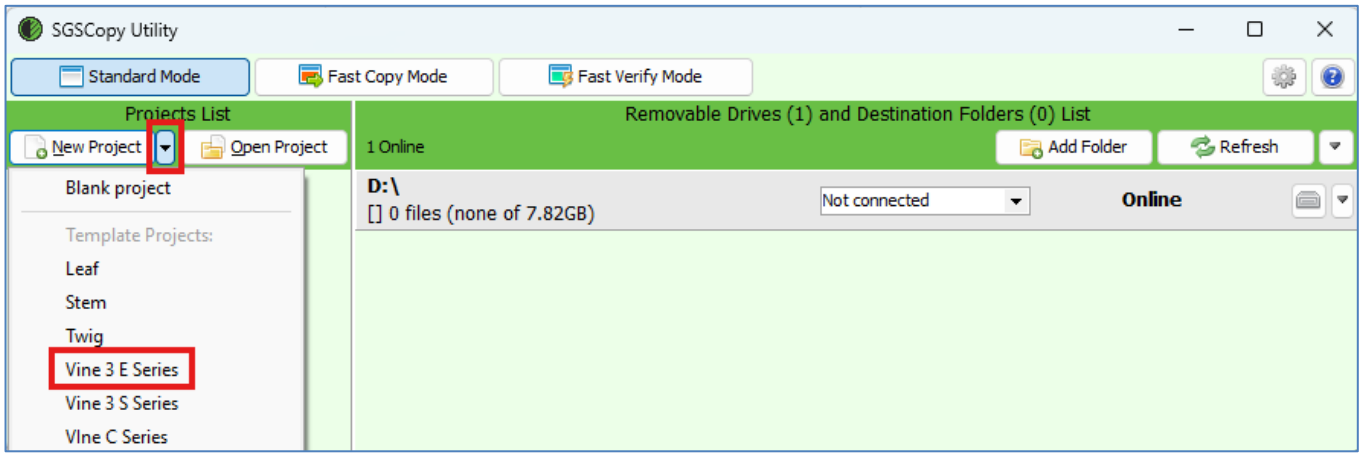
Quick Start!

This section will briefly describe the steps necessary to perform a typical audio load using SGSCopy.

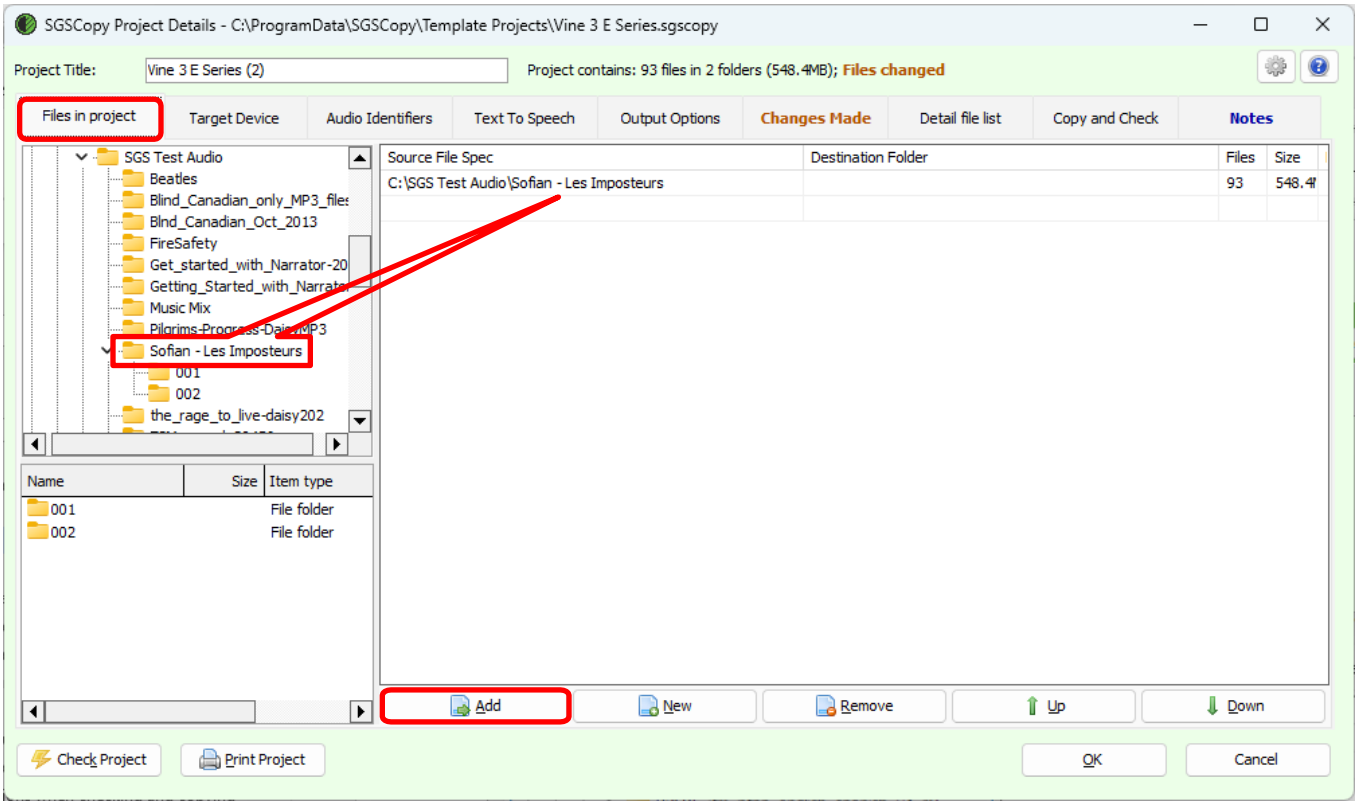
1. Open SGSCopy and connect your player(s) with the proper USB cable (SSU if required). For this example, we are using a Vine 3 E player. It is connected as D:.



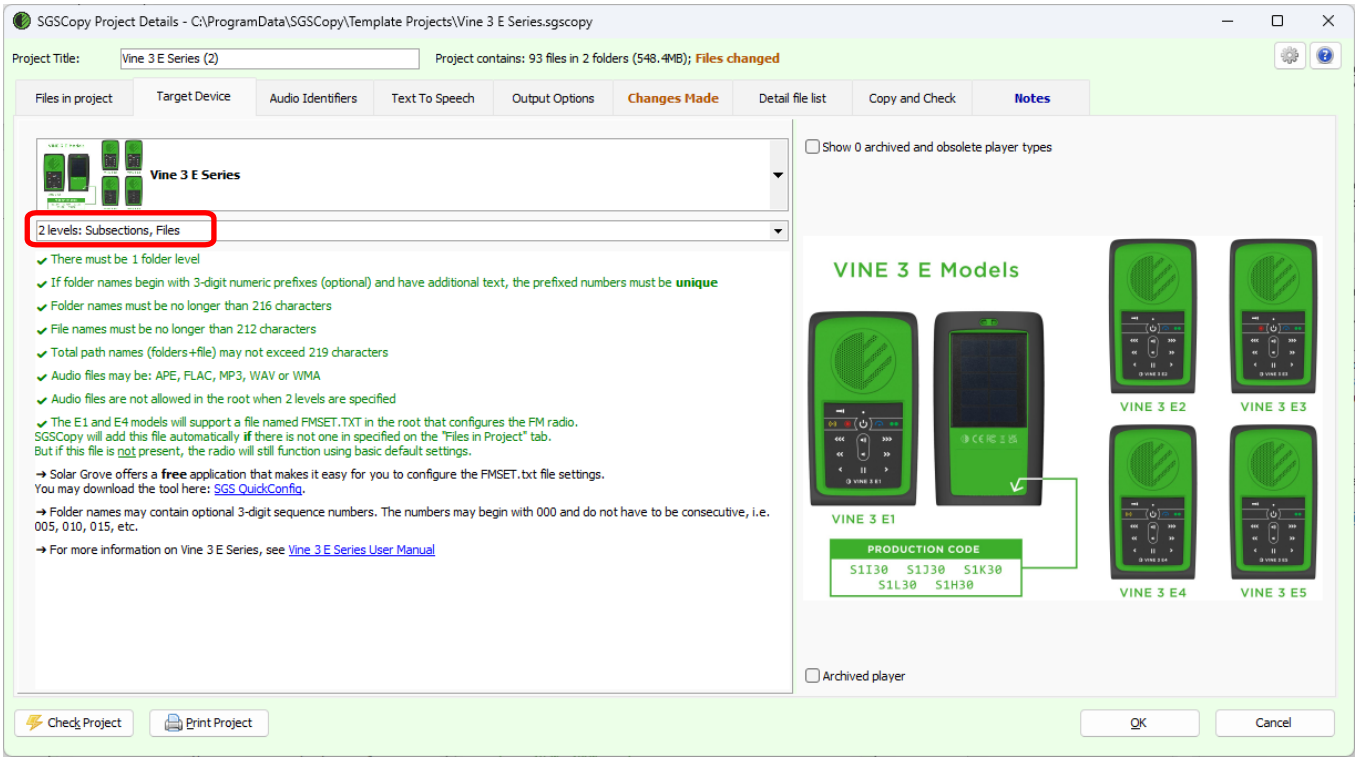
2. Click on the dropdown arrow (▾) next to "New Project" (circled in red), and choose the template project for "Vine 3 E Series" from the available list. This operation will both open that project and "Edit" it.



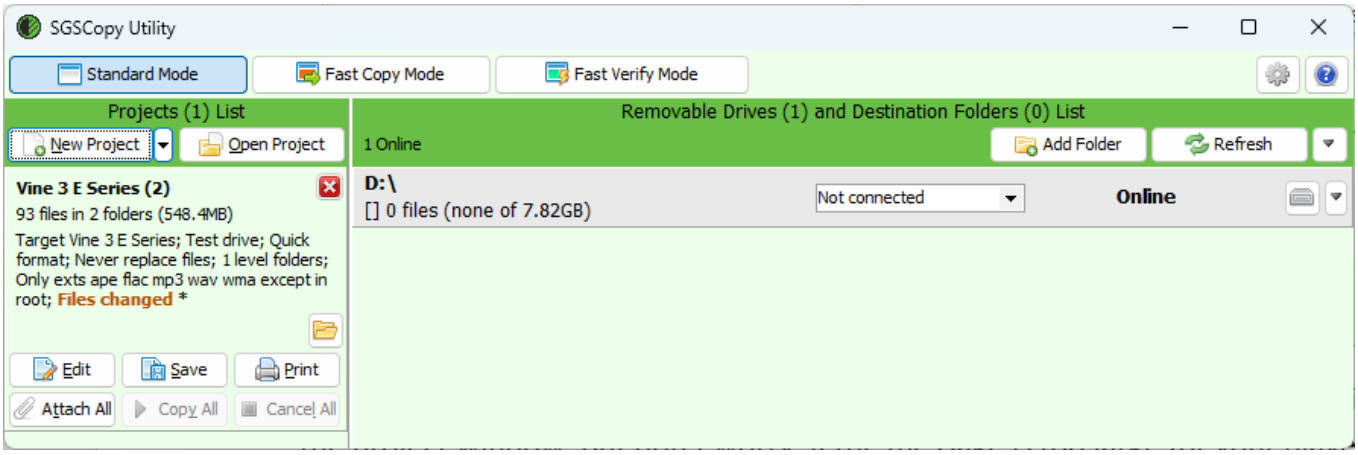
3. The project dialog will open, positioned to the “Files in Project” tab. Navigate to the folder(s) *containing* your audio and drag it to the right - OR - highlight it and click “Add”. For example, you may want to specify a special drive volume name on the “Copy and Check” tab.



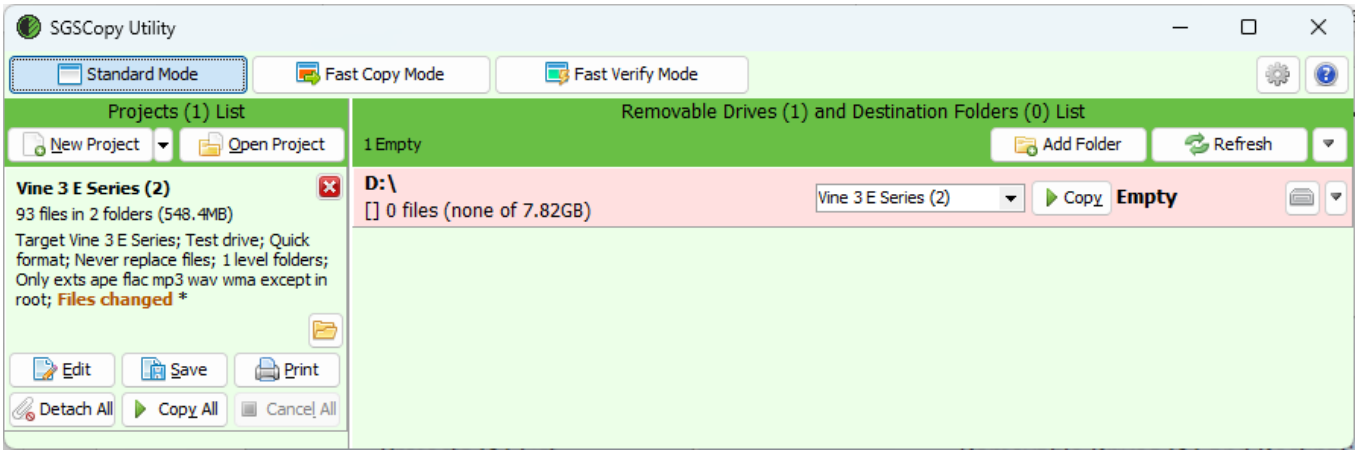
4. Click on the "Target Device" tab. Because our audio selection was 2 folders (Subsections), each with its own audio files, we need to change the folder structure setting to "2 levels". Notice that SGSCopy has checked your audio folder against the rules defined for the Vine 3 E player. All rules have passed (colored in green with a green checkmark). Rules that failed would have been colored in red with an "X". These should be addressed before continuing. See 19: Device rules validation for more details. Click "OK" to save your changes and exit.



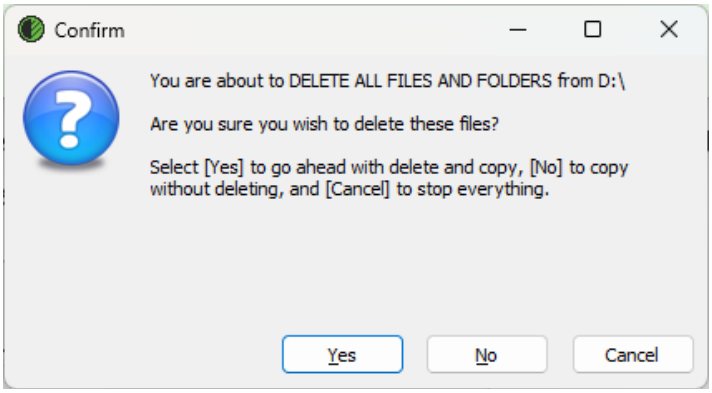
5. Take a moment and make sure *your audio* will fit on the target player. Then click "Attach All" in the project window. But don't worry, if the message happens to be too large for your player, SGSCopy will not allow you to perform the copy. "Attach All" will fail when clicked, and the player line will turn purple with the "Oversize" warning.



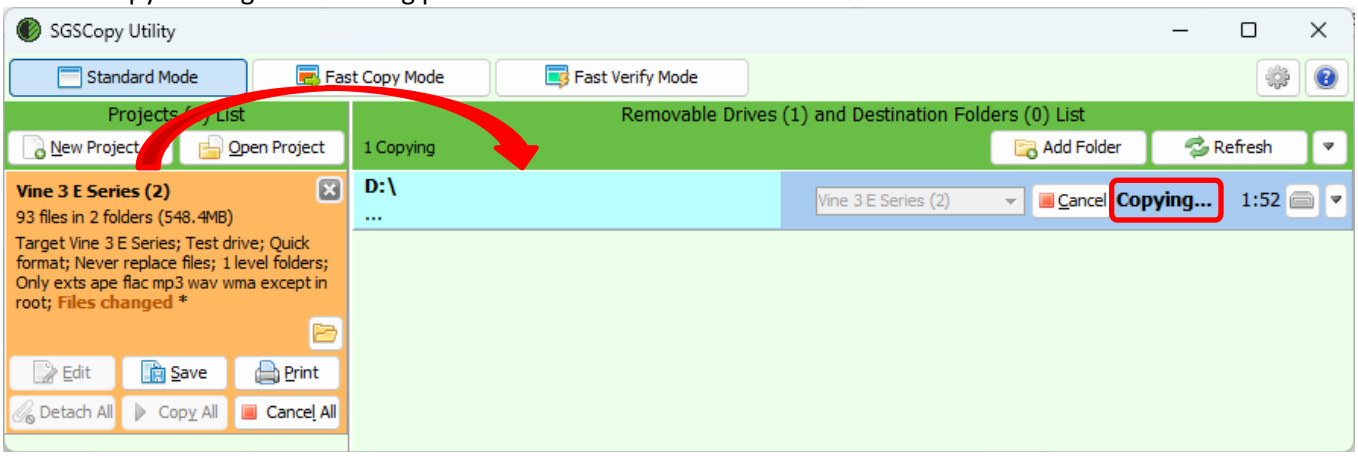
6. Our player is completely empty, but had there been previous contents, the “Unverified” message would be displayed. That simply means that there is content on the player and the “Don’t verify when project first attached” option on the “Copy and Check” tab was checked. There is no need to perform pre-verification since the intent is to format and load new contents. Now click “Copy All” in the project window.



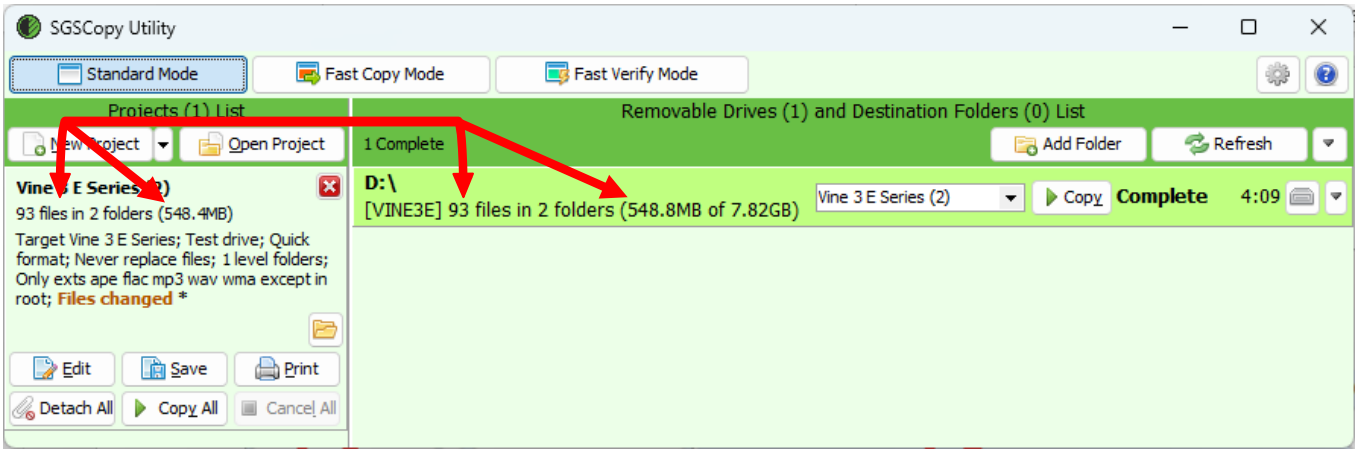
7. All of the template projects are set to perform a “Quick Format” on the target player and remove any current contents. Reply “Yes” to the *delete all files and folders* warning.



8. SGSCopy will begin the loading process…



9. Success! (the device line turns **green** and the "Complete" message is displayed)



**Note:* *If you notice a slight difference in overall message size as reported for the folder on the hard drive vs. on the player, it is due to the difference in the way file storage is calculated between the two devices – hard drive (NTFS) vs player (FAT32).*

10. In the vast majority of cases, the process described above is always successful. If for some reason the load was not successful (the player line turns red) try the following:

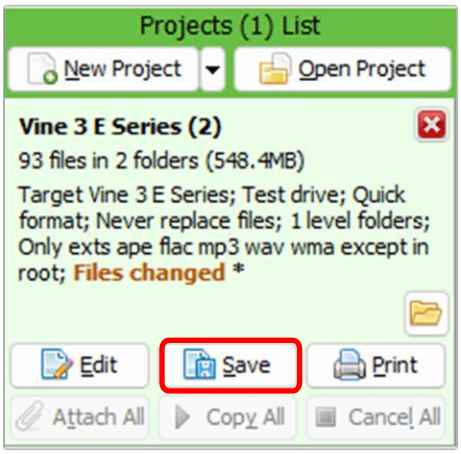
    a. Review all the settings on the different screens. If something looks amiss, please make the change and try again.

    b. If the completion message was "Unmatched", review section 10: File verification.

    c. If you are still not sure what the problem is, click here to contact Solar Grove for assistance.

11. If the load was successful, but the player beeps and just turns off, or enters Pause Mode instead of playing, or does not work or navigate correctly, please review the rules on the "Target Device" tab as well as the "Detail File List" tab for any folders or files tagged in red.

    You could also open the user manual/guide (using the link in the rules) and review the folder structure and file rules and/or troubleshooting sections.



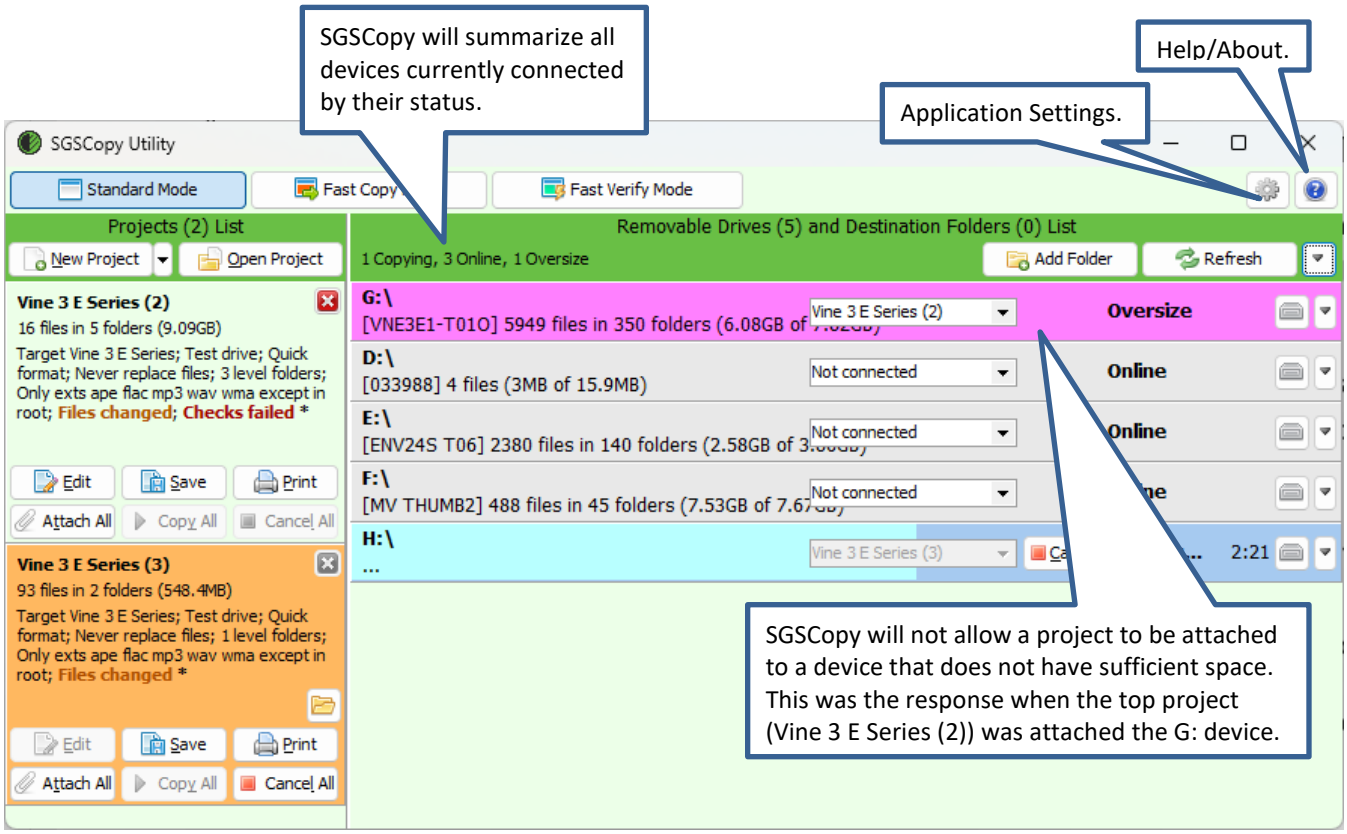
12. **Before you close SGSCopy!!!** If you need to repeat the above steps at a later date to load other similar players using the same configuration, you can save the project for easy re-use. SGSCopy will "remember" all the settings in the project file.

    First, re-edit the project and give the project a proper name (top left of the project dialog) and then click OK. Now, click on the "Save" button in the project window. Give the file the same name you named it internally (but leave the file type as ".sgscopy") and click "Save" again. Because the template projects are stored in a system folder, you must save your copy to a *different* folder on your computer ("My Documents" is typically used for this). To open the project later, click on the "Open Project" button, navigate to the folder and select it.

The Main screen

This is the main screen for SGSCopy as it appears each time you start the application.

If there are players or USB drives connected to the computer when SGSCopy starts, they will be recognized and shown in the area on the right under “Removable Drives and Destination Folders List”.



SGSCopy allows you to work in the framework of “projects”. Projects provide you a way to define details regarding the loading of specific audio message(s) to specific player(s), save them and use them again without having to remember and reconfigure specific settings.

One of the nice features provided by SGSCopy is that it can compare a project against connected players. This feature is optional and is configurable within the project. If so configured, the compare can occur when a player is first attached to a project, but more importantly as the final step *after* the copy process.

You can save projects for future use (if this is helpful to you) or you can simply discard them when you close the application. You may also copy one project from another, using them as templates for new ones.

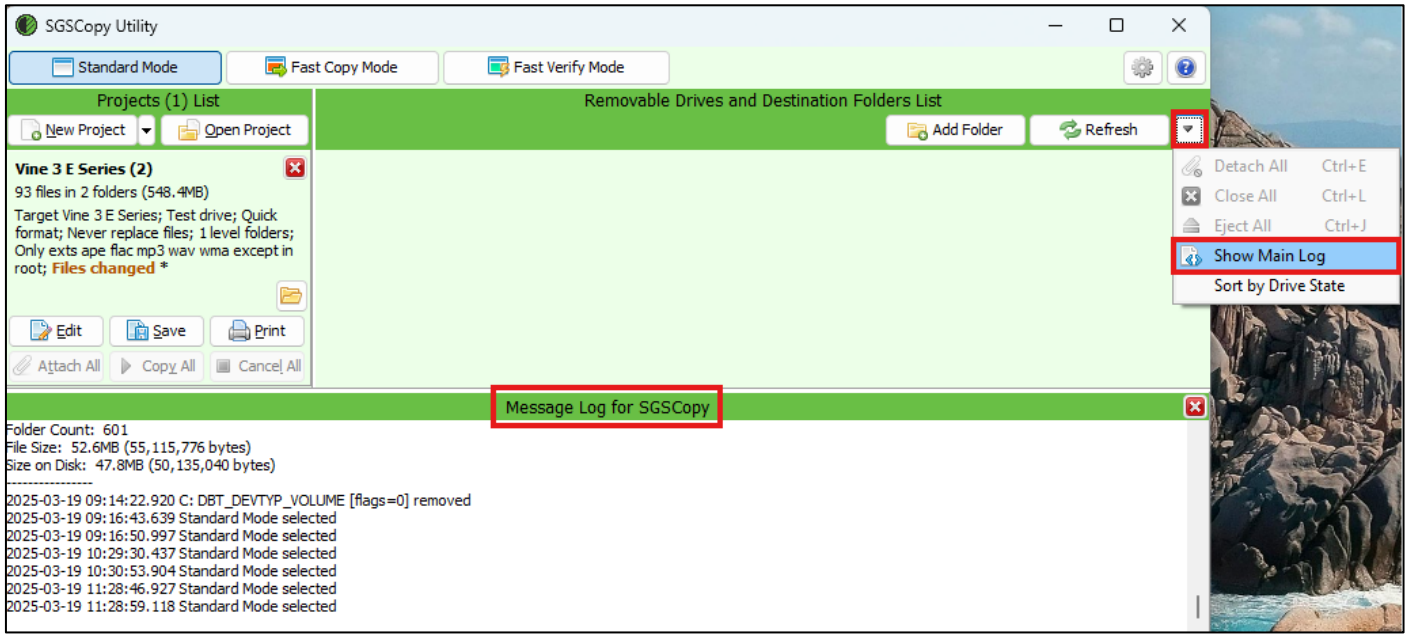
This guide will touch on *most, but not all,* of the features available in SGSCopy.

The Main program log

There is now an easy way to access the main program log for SGSCopy.

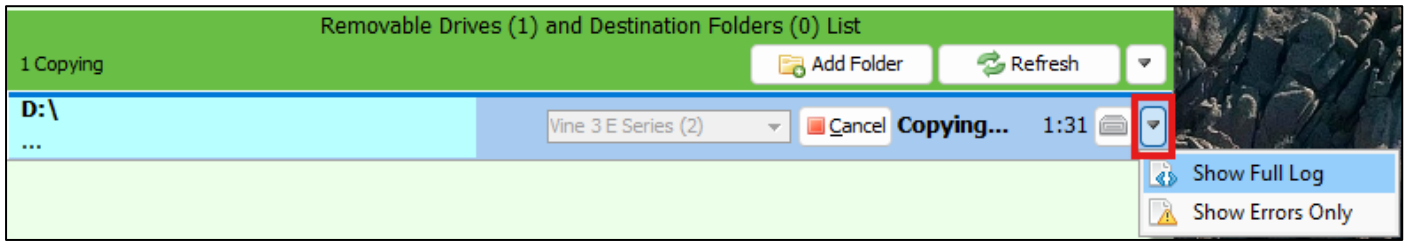
The drop list menu button (▾) to the right of the “Refresh” button will open a menu. A new item will appear that will display the main program log. It opens a window at the bottom of the Main Screen in the same way that an individual player log will display. See sample of Main log here.

SGS technical support may request you use this option in special situations, copy and save the content to a file (Notepad recommended), then send to us for diagnosis.



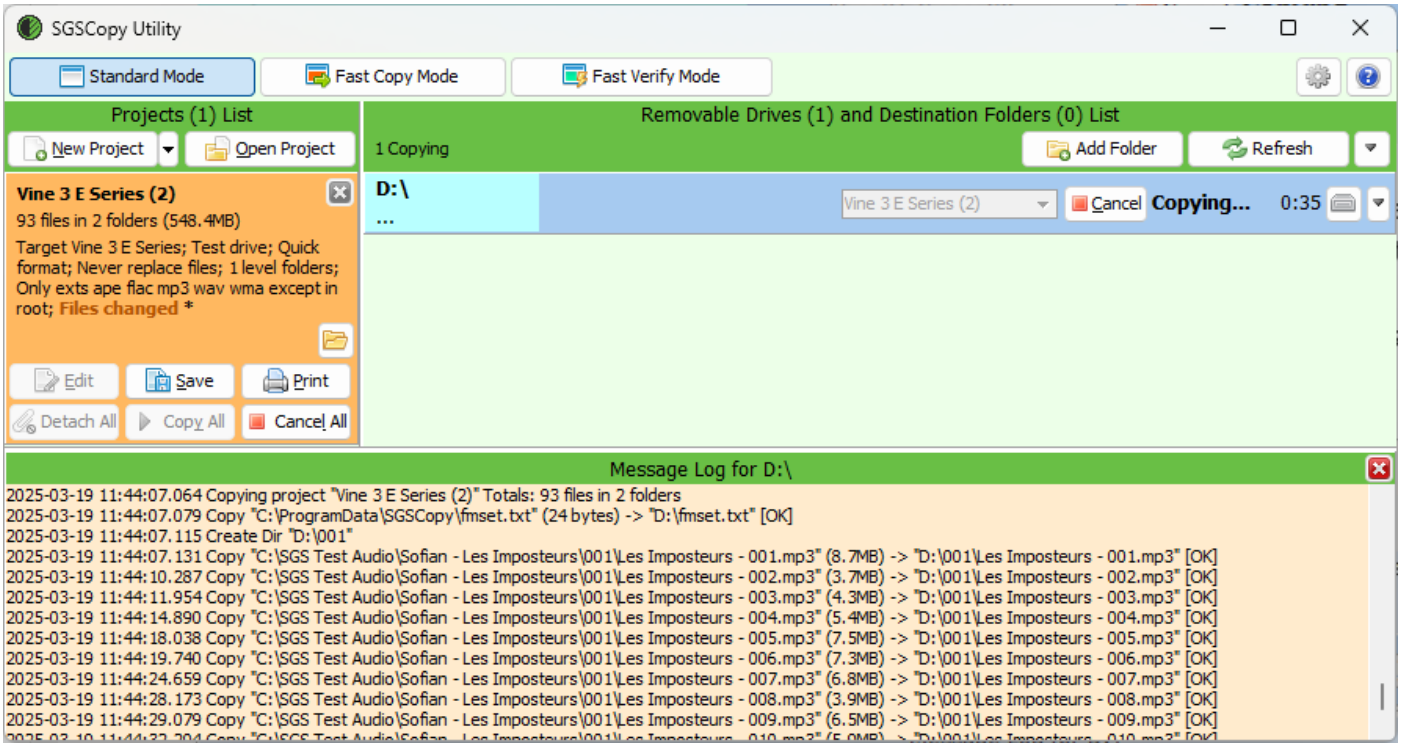
Individual device log

It is possible to view an individual device log while it is being processed. Click on the arrow at the end of the device line and chose one of the two drop-down menu items (full log or errors only):



If the device is actively being processed, the log messages will scroll. If you want to "freeze" the automatic scrolling, simply click in the log window. The background will turn beige and you can scroll at will throughout the full log.

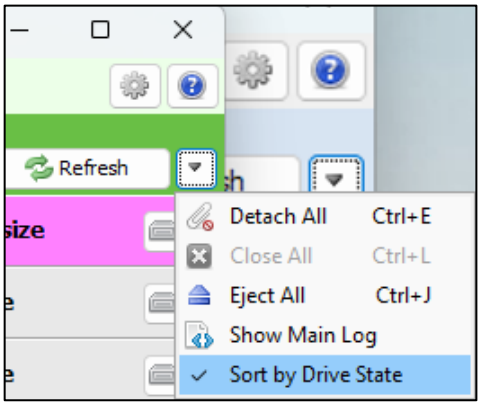
To resume scrolling with the most recent message always showing at the bottom, click somewhere outside of the log window. The background will turn white again and the message scrolling will resume.

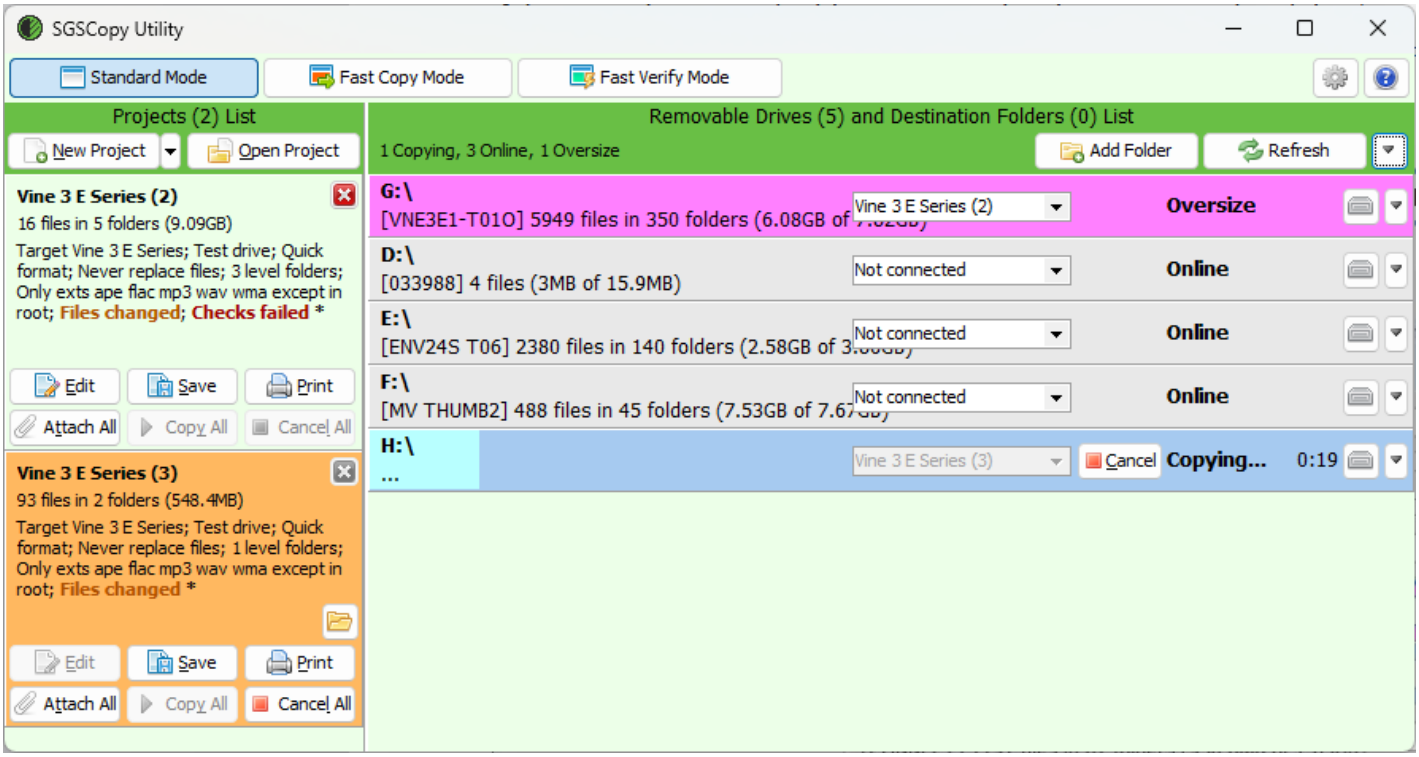


Sort by Drive State

There is now an easy way to sort all the connected devices by their current state. This is quite helpful when a large batch of devices is being processed together and you are interested in seeing all those in a specific state grouped together.

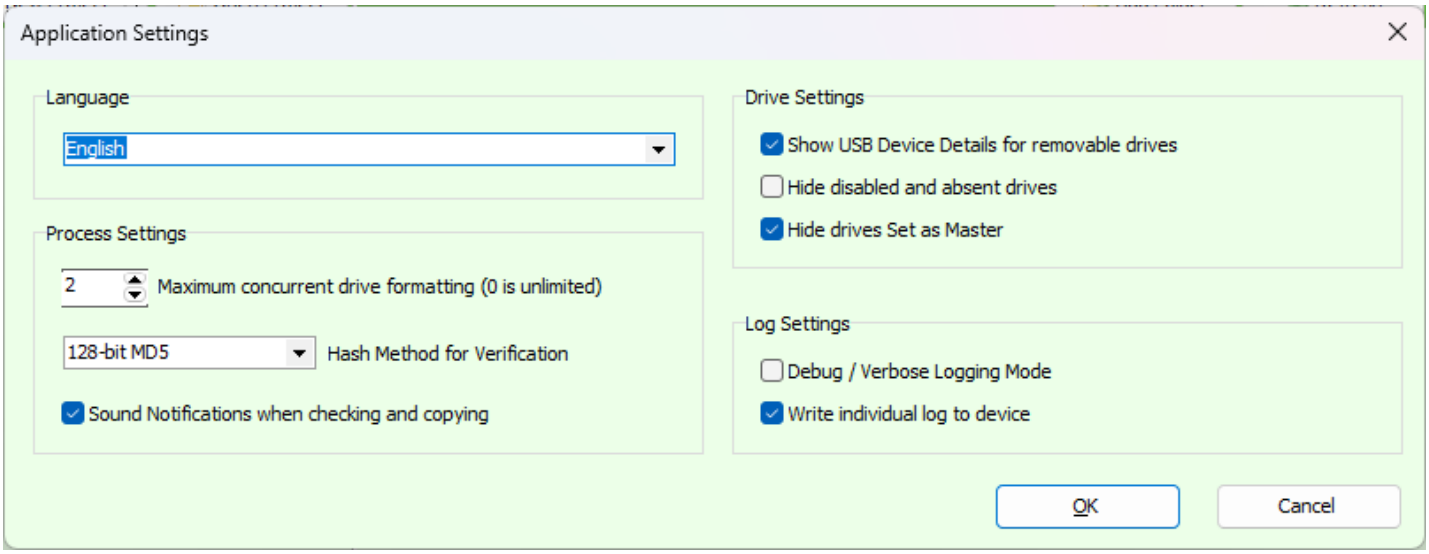
The default order is alphabetical, usually by Drive Letter. When sorted by drive state, similar “states” are grouped together, i.e. Copying, Online, Oversize, Removed, Failed, Complete, Cancelled, etc.



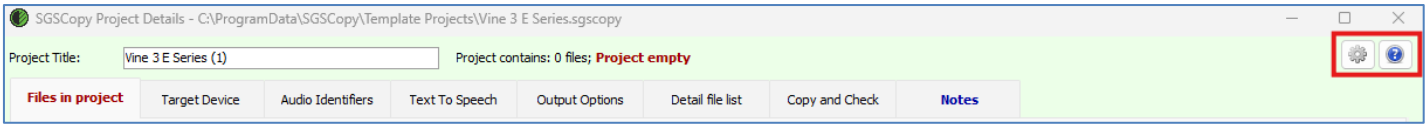


Application Settings screen

From the Main screen, if you click on the  icon at top right, the Application Settings screen will be presented.



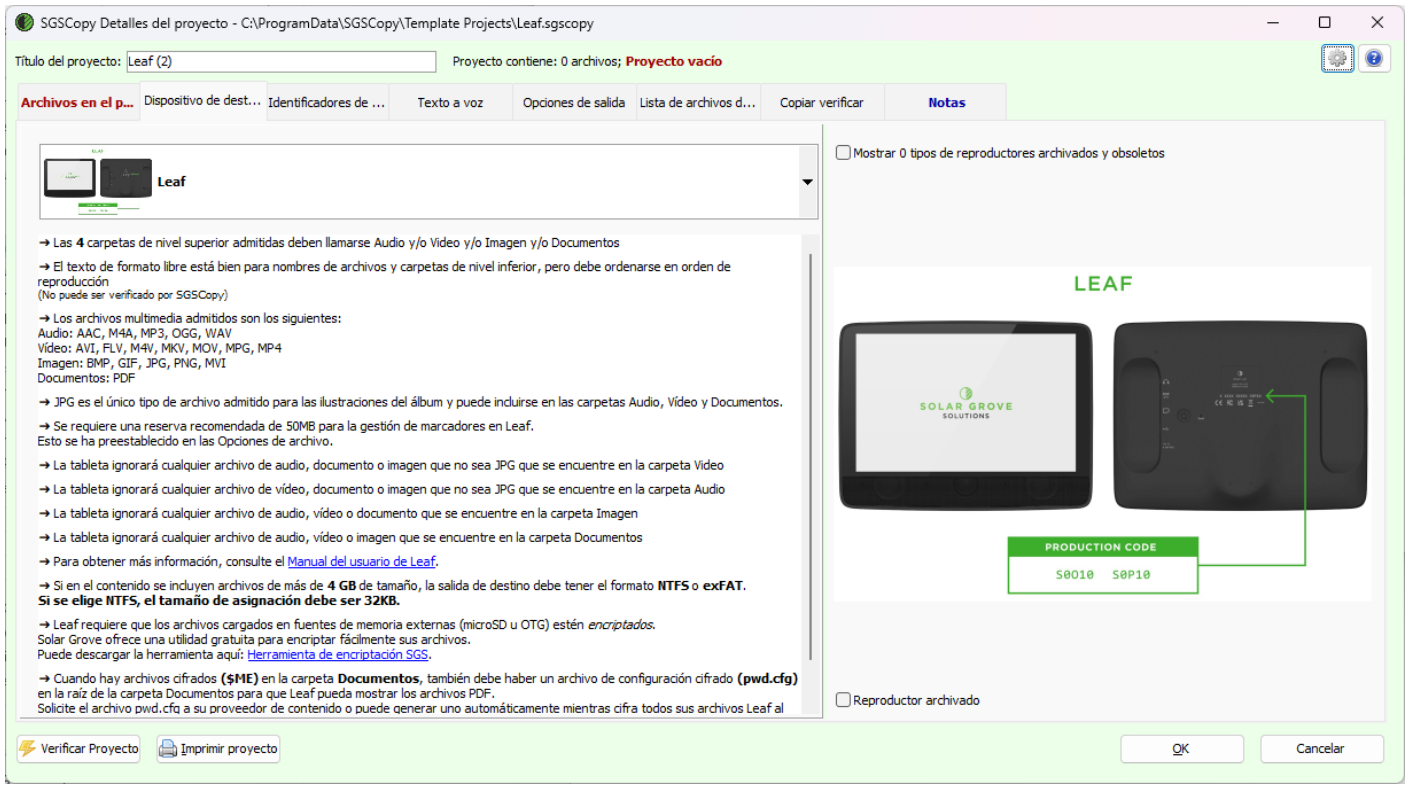
Access to Application Settings is available from the Main Screen *and* the Project Details screen. The icon to access the Help/About dialog has also been added. (circled in red below)



Language

Besides the default language of English, SGSCopy can display operational text throughout the application in French, Spanish or Simplified Chinese. Typically, the text affected appears on button captions, tab captions, checkbox or radio button captions, tool tips, dialog boxes and the like.

Language support has been added for the rules text on the Target Device tab. All the included devices now have this translation available and the rules text automatically changes to the language chosen on the Application Settings screen.
The Language setting will persist until changed by the user.



Maximum concurrent drive formatting

This setting determines the number of concurrent format operations SGSCopy will execute on batches of many players when Quick or Full Format is requested for initialization. Depending on the size of your batch and your computer configuration, some systems may bog down with too many concurrent format operations. It is recommended to leave this set to ten or less, but you are free to experiment with your system to see what works best.

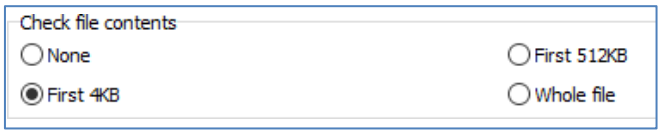
When using mapped folders, SGSCopy can now perform format on the mapped device.

A value of zero is unlimited. This means that SGSCopy will allow your system to perform as many concurrent format operations as can occur simultaneously.

Hash method for verification

This setting determines the method used whenever “Check file contents” is requested on the “Copy and Check” tab. The four choices are:

- 32-bit Hash
- 64-bit Hash
- 128-bit Hash
- 128-bit MD5



Screen snippet from the Copy and Check tab

Once changed, it takes effect immediately. In testing, 64-bit Hash seems to be the fastest, but your mileage may vary!

Sound Notifications when checking and copying

Sound bites are available to alert the user when notable events occur like when device rules fail or pass.
When this option is checked, a sound bite is also played when each player completes. A different sound bite is played when the last player in the batch completes to signal that all copying for a project has completed.
If this option is unchecked, SGSCopy is muted and will work silently.

Show USB Device Details for removable drives

When checked, SGSCopy will also retrieve the USB Device Model and display it in the device tool tip when hovering over the device on the Main Screen. See here.

When checked, SGSCopy will retrieve the USB Serial Number assigned to the device and display it too in the device tool tip when hovering over the device on the Main Screen. See here.

If you are using SGSCopy with mapped folders, make sure to set this option **off (unchecked)**. When used with mapped folders the time to add and attach the folders is significantly increased when this option is activated.

Hide disabled and absent drives

If you check this box, any drives connected to the computer that are flagged disabled by SGSCopy (see 13: Teaching SGSCopy to ignore devices) or absent (devices that have a microSD card reader and no media is loaded) will be hidden from view (but not physically removed).

Hide drives Set as Master

If you check this box, any time you select a folder via the “Add Folder” button on the Main Screen, and then choose “Set as Master” to create a project from that folder, the original folder line will automatically be hidden once the project is generated. Typically, the folder lines in this case are no longer needed once the project is created.

Debug / Verbose Logging Mode

When checked, SGSCopy will open a window beneath the Drives List with additional debugging information (that is written to the main program log). This option should only be used under the direction of SGS technical support for special cases.

Write individual log to device

When checked, SGSCopy will write a log file (plain text file - TXT) to the root of each device that is processed. The file will be named “SGSCopy – “ + name-of-your-project + “.log”. The file will contain all messages pertaining to the initialization, copying and verification of all the files copied to your device along with any errors that may have occurred. See Sample player log file here.

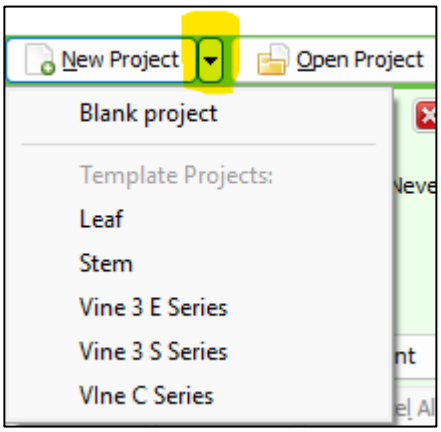
SGS recommends using this feature as it will assist us in problem diagnosis when support is requested. It only takes mere seconds to write this log file to the target device and typically the files are small.

All players that SGS prepares for shipment are loaded with this option set on because it can help when a support request is opened for a shipped device.

If any changes were made to the Application Settings screen, click “OK” to save them.

Template Projects

The SGSCopy setup will also install a full set of template projects – one for each SGS player.
It is easy to find and open a Template Project.
The available Templates show in the drop-list under the “New Project” button.

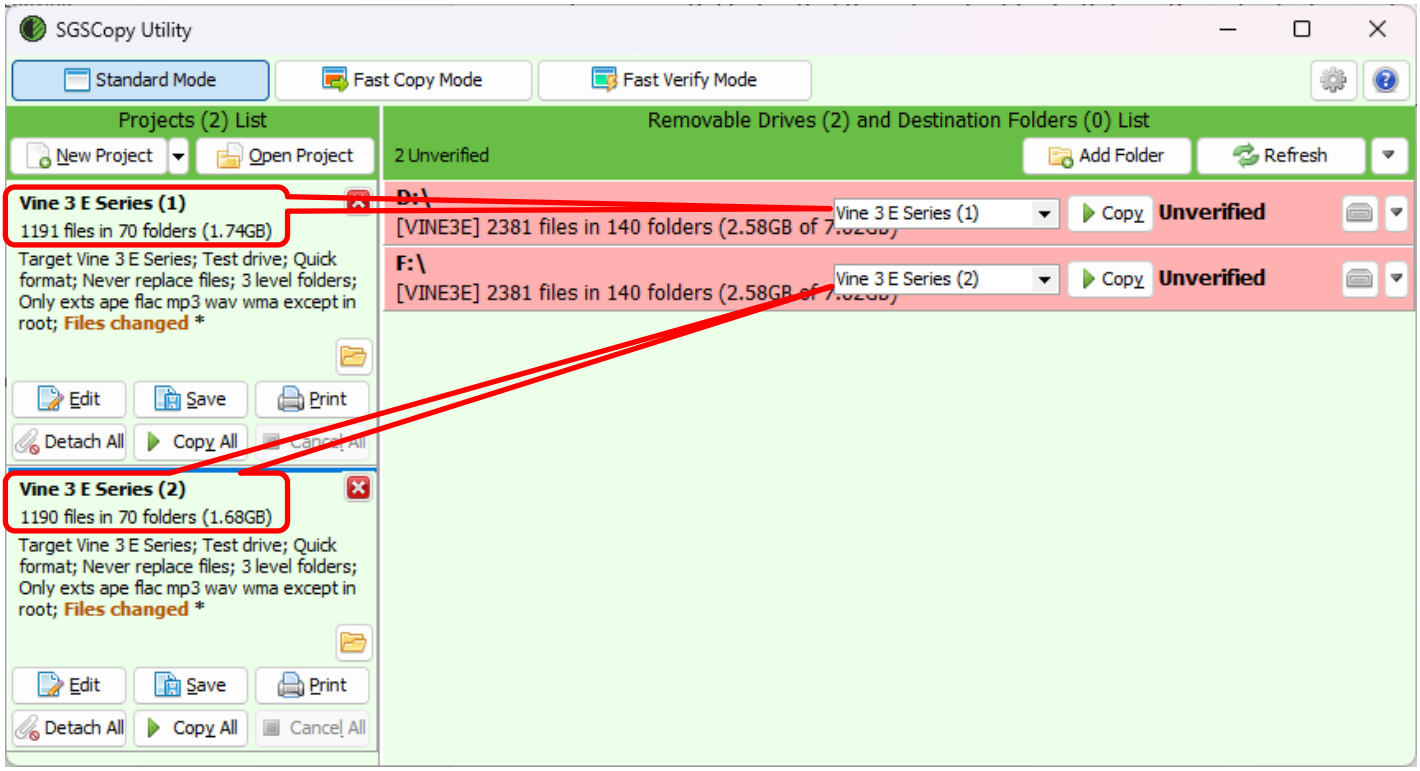


From here, you may

- Choose a blank project
- Choose any of the available Templates

Each project is pre-configured with the recommended settings for the device defined. All you really need to do is to provide the data content that will be loaded to the player on the “Files in Project” tab. However, feel free to change other settings as desired.

Whenever you open a Template Project (or a New Project), SGSCopy will automatically append a sequence number to the project name to make it unique (SGSCopy will not allow the same project [name] to be opened more than once). This way, you can open the same Template project twice to load two players of the same type (concurrently) but with different content for both from the individual projects.



Since these are templates, typically you would discard the project when finished and not save it. However, if you do want to save the project with your modifications, you may do so but **not** to the Templates folder as it is a system read-only folder. It is recommended to save your own custom projects to the “My Documents” folder but practically any folder is acceptable.

Examples and Features

1: Loading Vine 3 S Players

Coming soon!

2: Loading a Vine 3 C2 Player

Coming soon!

3: Loading microSD cards

Coming soon!

4: Loading a Vine 3 E and microSD card together

Coming soon!

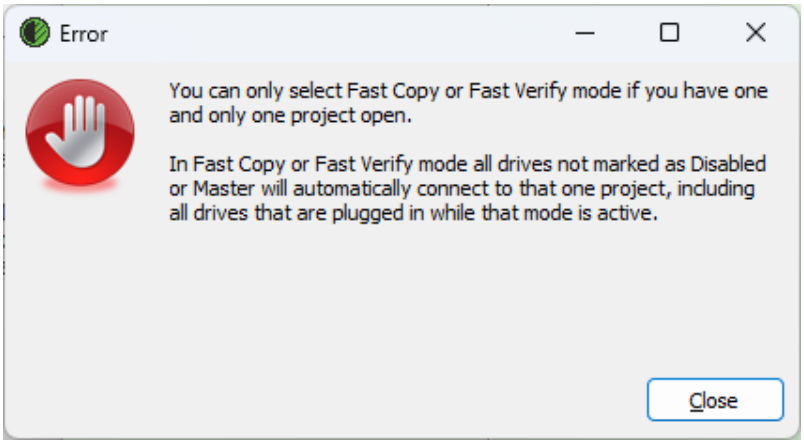
5: Fast Copy Mode for quickest loading

In this example, we will load players using **Fast Copy Mode**. Fast Copy Mode is a feature offered by SGSCopy that allows for semi-automated loading of players with minimal user intervention.

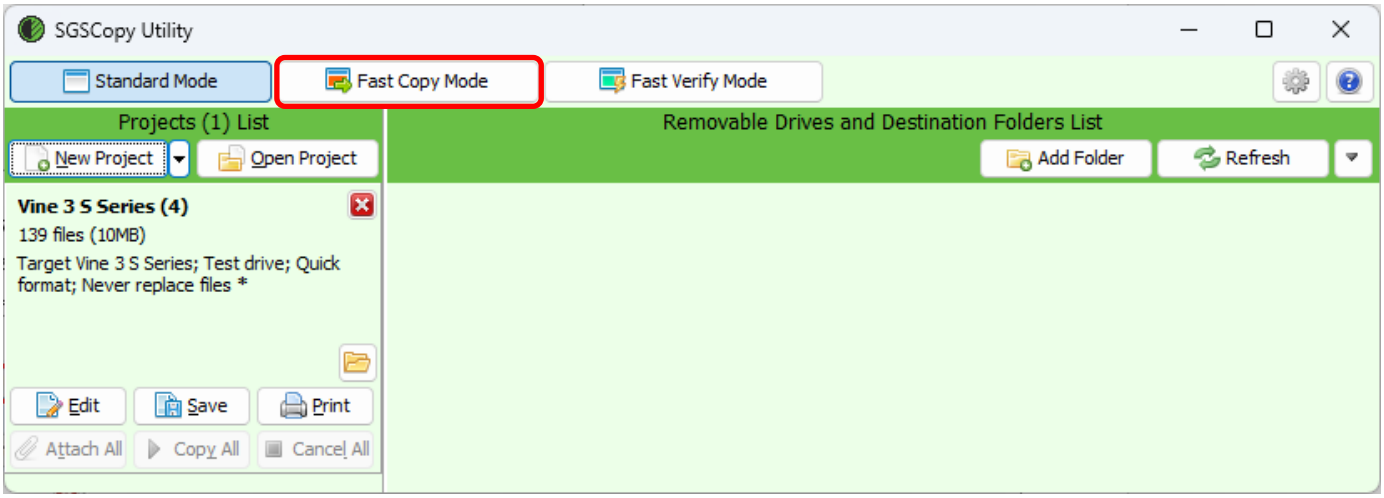
Be careful! Once you activate Fast Copy Mode, no additional warnings are issued before a player is cleared and loaded with the specified audio. Any player, or USB device for that matter, you connect while SGSCopy is open and Fast Copy Mode is active will automatically be loaded – no questions asked!

1. When SGSCopy starts, it defaults to "Standard Mode", which is the setting used in most examples.

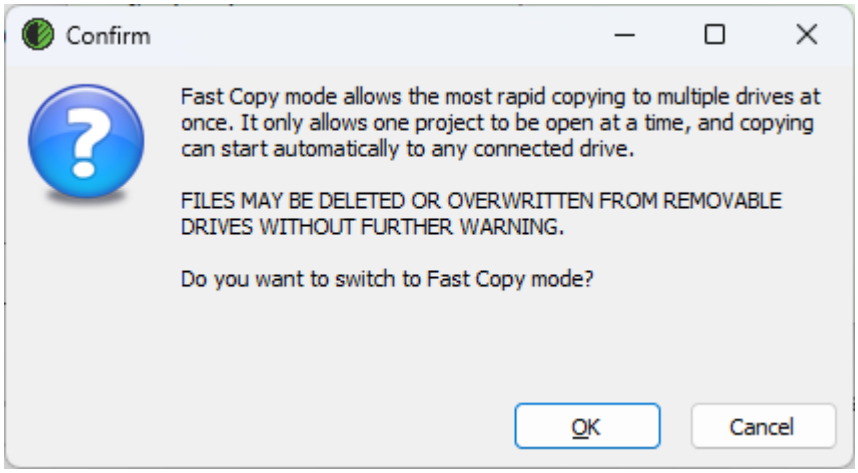
2. After starting SGSCopy, open the project you want to use for your fast copy session. Fast Copy Mode requires that one and only one project may be open. SGSCopy warns if this is not the case.



3. Once the project is open (and re-configured if necessary), you can turn Fast Copy Mode on by clicking on the "Fast Copy Mode" button (circled in red).

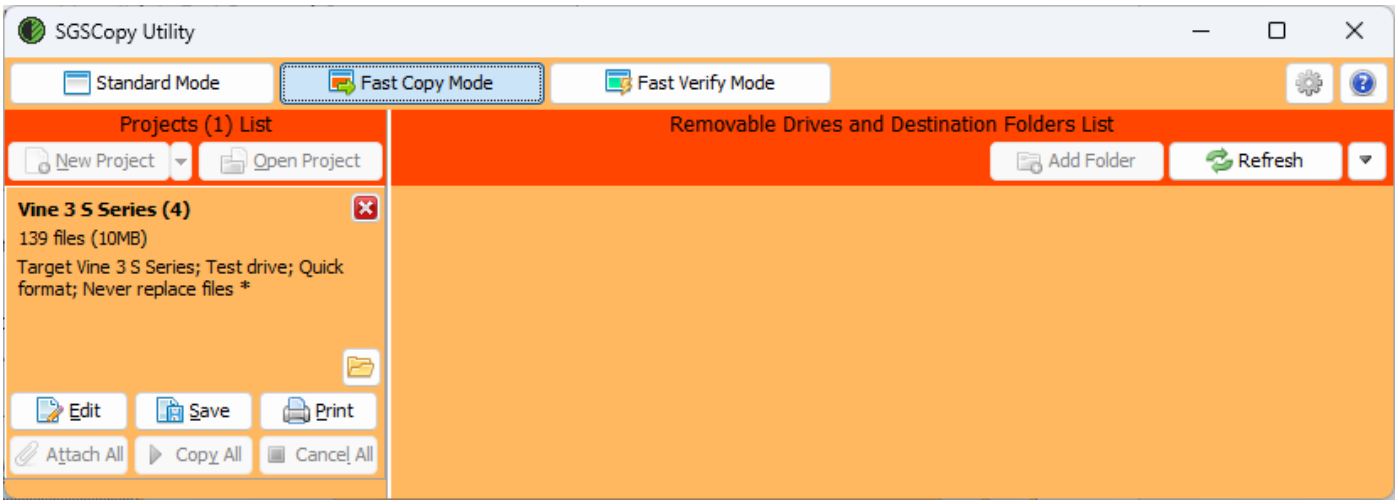


4. You will receive a pop-up warning like that below:

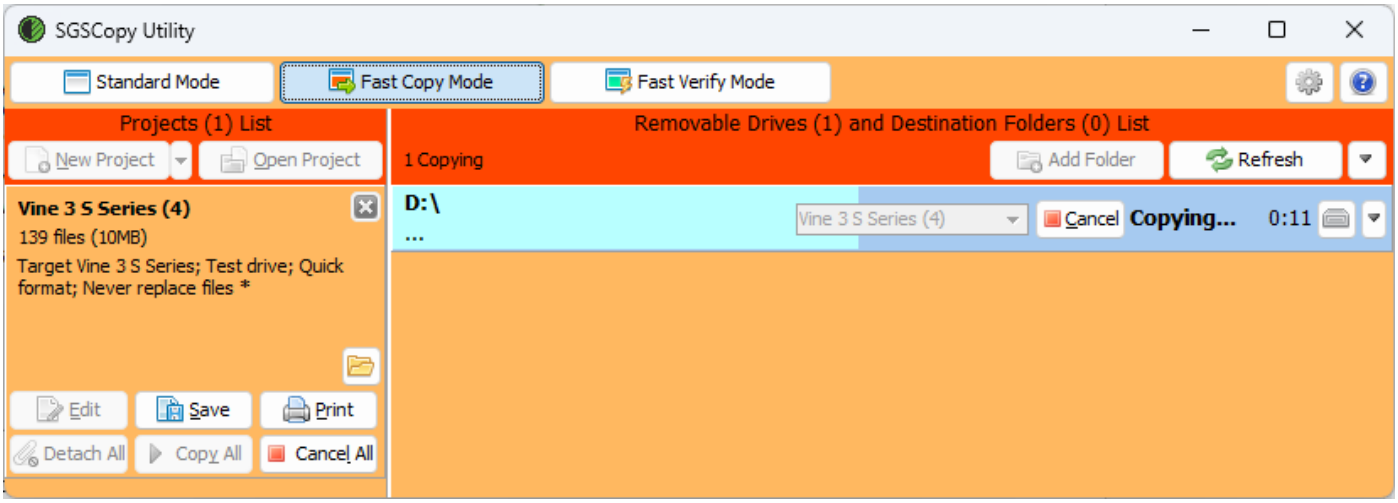


5. Click on “OK” to transition to Fast Copy Mode.

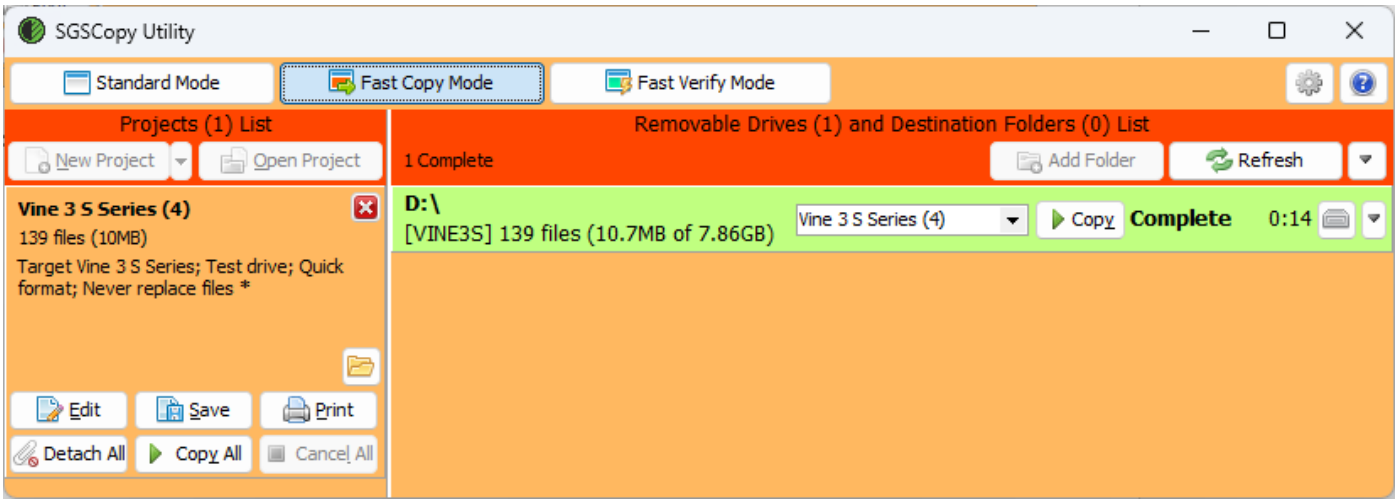
6. Notice that the button ribbon at the top of the screen and the screen background changes to a reddish-orange background color to alert you that the application is currently in Fast Copy Mode.



7. From this point on, once you connect players or USB devices, the moment SGSCopy recognizes each device it will begin to load it with no further intervention.



8. Once players have completed, you can disconnect them and connect others in their place. SGSCopy will automatically begin to load the new players as soon as they are recognized by the computer.



9. SGSCopy will remain in Fast Copy Mode until…

- The SGSCopy window loses focus, i.e. you switch to a different application or screen.
- You click on the “Standard Mode” button to turn it off.
- You connect a device that is significantly different from the first (see explanation #2 below).
- You close SGSCopy. When SGSCopy restarts, it always defaults to “Standard Mode”.

 1) Fast Copy Mode is an ideal solution when you don’t have many USB ports available (or no hub) and need to quickly load a group of players with the same audio. It requires minimal intervention from you to achieve the quickest copies.

 2) SGSCopy offers a safeguard to prevent unintended access to a device that is connected to the computer while Fast Copy Mode is active which could result in loss of data. The **first** device connected determines the point of reference for *all* devices connected during the session. If a subsequent device is connected that is less than half the capacity of the first, **or** more than twice the capacity of the first, **or** in any case, greater than 128GB, SGSCopy will ignore that device and automatically turn Fast Copy Mode off.

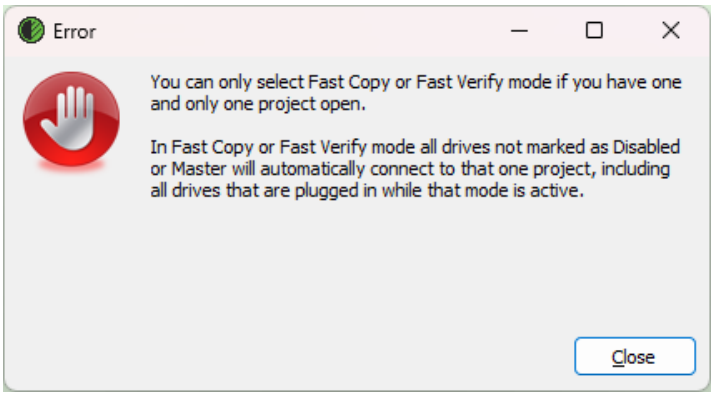
You may also want to configure SGSCopy to always ignore certain devices you keep connected to your computer. See 13: Teaching SGSCopy to ignore devices for details.

6: Fast Verify Mode

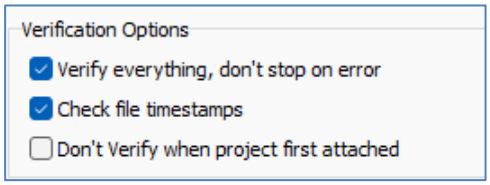
In this example, we will compare players to a project using **Fast Verify Mode**. Fast Verify Mode is a feature offered by SGSCopy that allows for semi-automated verification of players loaded using a specific project with minimal user intervention. For each player connected, it only executes the post-copy verification process as defined in the project, stops, and waits for more players to be connected. This is a great way to confirm that all players are loaded with a specific message without guessing.

1. When SGSCopy starts, it defaults to "Standard Mode", which is the setting used in most examples in this document.

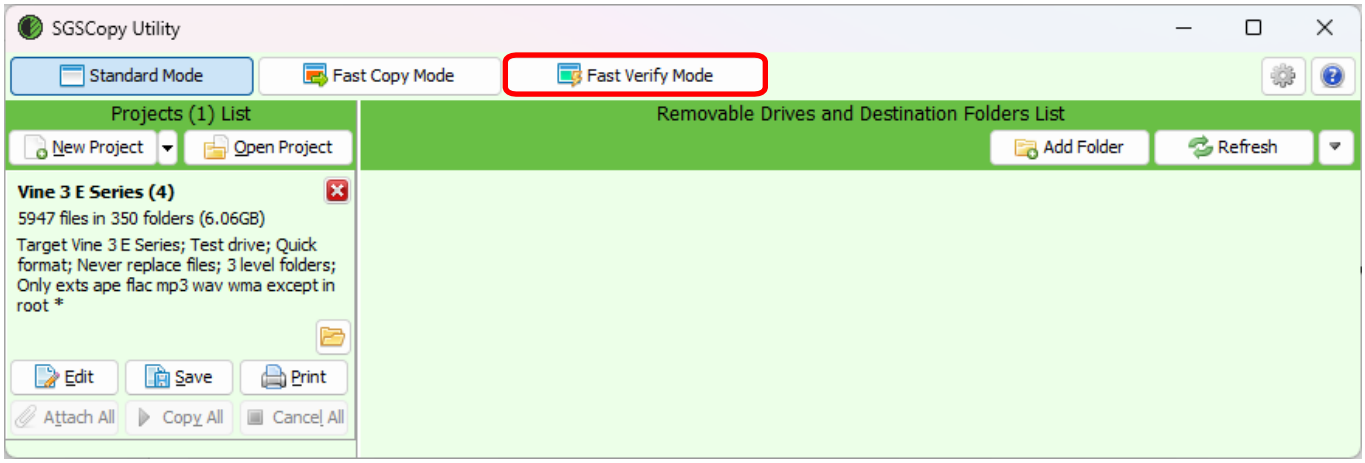
2. After starting SGSCopy, open the project you want to use for your fast verify session. Fast Verify Mode requires that one and only one project may be open. SGSCopy warns if this is not the case.



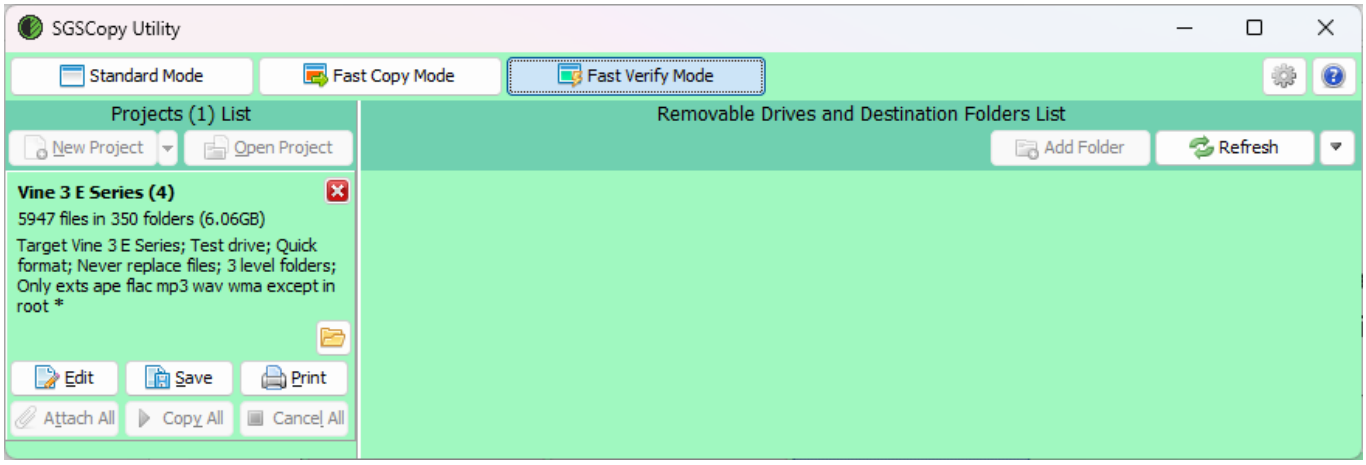
3. Once the project is open, make sure it is configured with the correct verification steps on the "Copy and Check" tab. The most important setting for Fast Verify is to NOT check the "Don't verify when project first attached" option, because this is what will trigger the verification.



4. Now you can turn on Fast Verify Mode by clicking on the "Fast Verify Mode" button (circled in red).



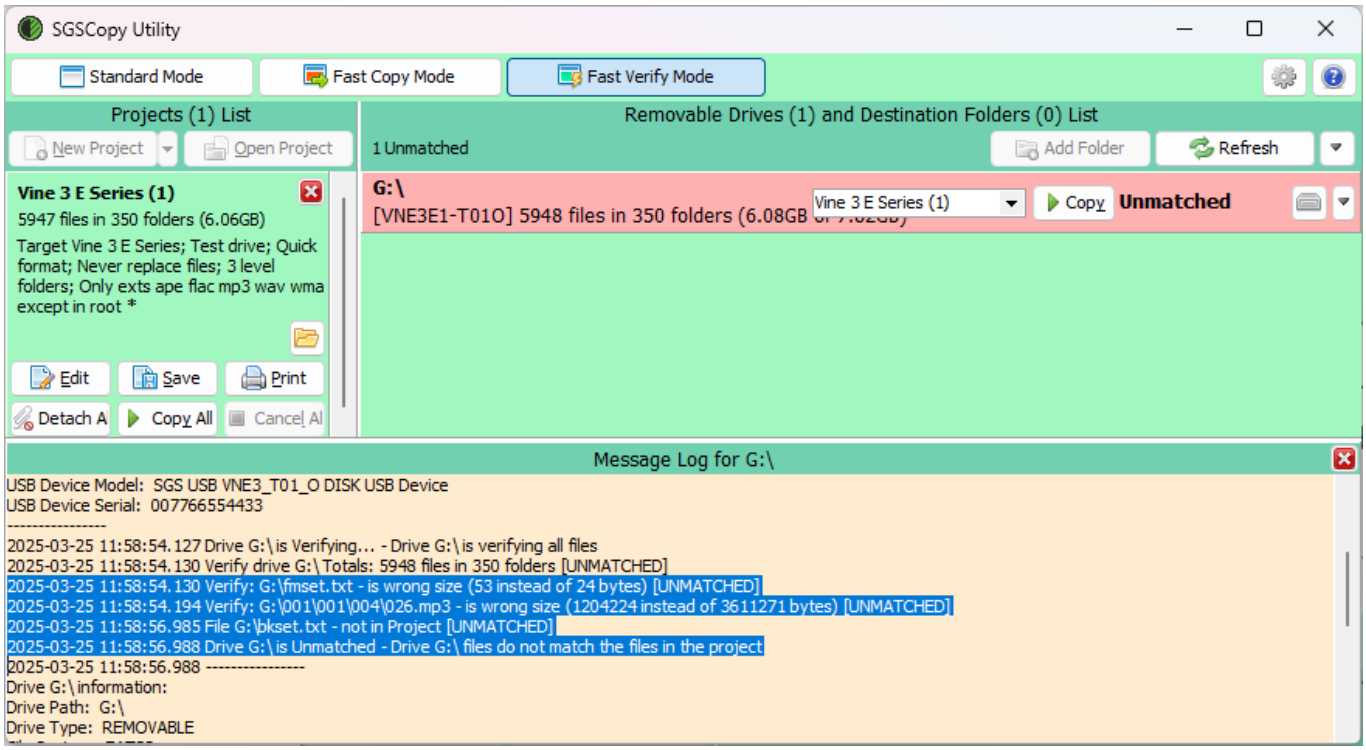
5. Notice that the button ribbon at the top of the screen and the screen background changes to a greenish background color to alert you that the application is currently in Fast Verify Mode.



6. From this point on, once you connect players or USB devices, the moment SGSCopy recognizes each device it will begin to compare the device contents against that defined in the project with no further intervention.

   When a player completes, the termination message will either be “Complete” (all files matched) or “Unmatched”. When the files don’t match, you can display the log by clicking on the ▾ button at the end of the device line, and choosing “Show errors only”. Then you can scroll to the errors and see what didn’t match (highlighted below).

   In the example below, 2 of the mismatched files (fmset.txt and bkset.txt) can be explained because they were added *after* the original load and are not part of the original project. But the “026.mp3” file poses a serious problem. The one on the player is much smaller than the one in the project. This should be investigated!



7. Once players have completed, you can disconnect them and connect others in their place. SGSCopy will automatically begin to verify the added player(s) as soon as they are recognized by the computer.

8. SGSCopy will remain in Fast Verify Mode until…

   - The SGSCopy window loses focus, i.e. you switch to a different application or screen.
   - You click on the “Standard Mode” button to turn it off.
   - You close SGSCopy. When SGSCopy restarts, it always defaults to “Standard Mode”.

 Fast Verify Mode is an ideal solution when you don’t have many USB ports available (or no hub) and need to quickly check that a group of players contains the same audio. It requires minimal intervention from you to achieve the quickest method of verification.

You may also want to configure SGSCopy to always ignore certain devices you keep connected to your computer. See 13: Teaching SGSCopy to ignore devices for details.

7: Duplicating players, microSD cards, etc.

Coming soon!

8: Appending audio to a player

Coming soon!

9: Disk-to-disk copy

Coming soon!

10: File verification

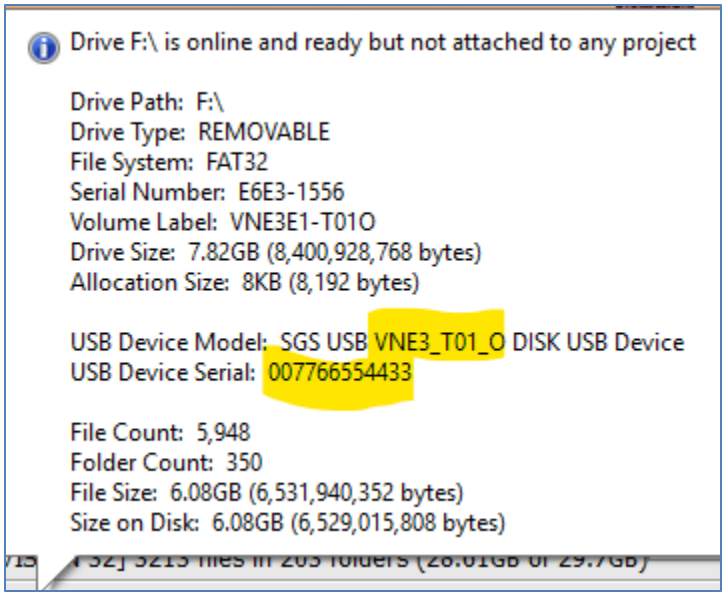
Coming soon!

11: USB Device information display

For players that have USB serial numbers defined, SGSCopy will display that for you. Also, if known, the USB Device Model will also be displayed.

This option is controlled by a setting on the Application Settings screen.

When you mouse-over a connected player on the Main Screen, the device details are displayed in a pop-up balloon (right). The USB device information, if defined, appears along with other information.



Solar Grove has also added the current firmware release number to the USB Device Model ("Friendly Name") string.
In addition to the feature of voicing the firmware revision that most of our players have, this makes for greater visibility to our customers.

12: Drag and Drop/Multi-Select

Coming soon!

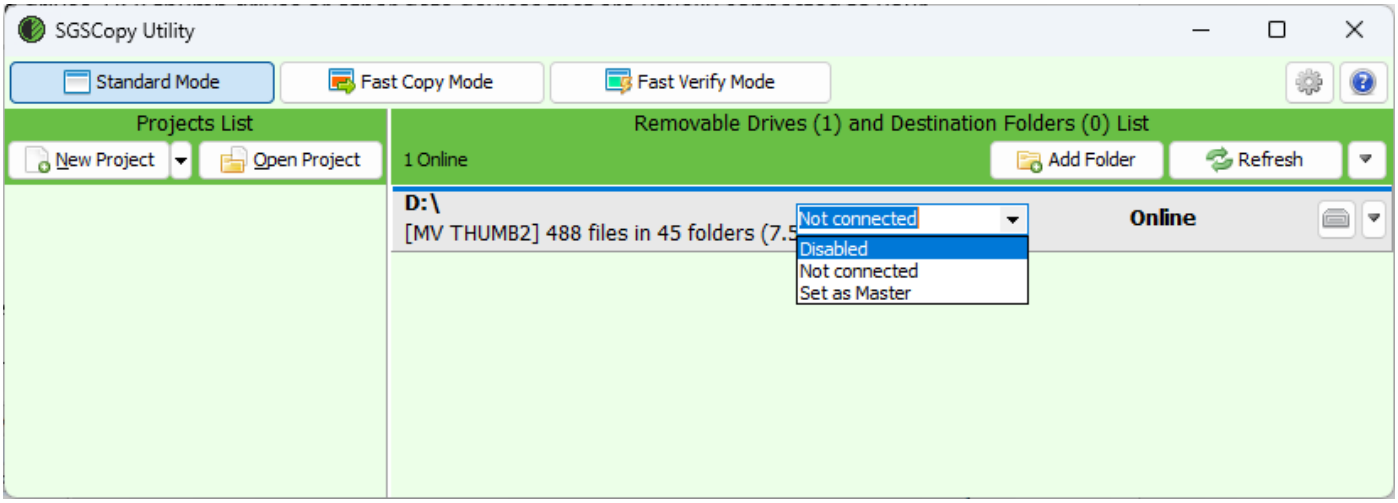
13: Teaching SGSCopy to ignore devices

If you have external hard drives, USB thumb drives or other data devices that are usually connected to your computer, you can "teach" SGSCopy to always ignore those devices when the program is active and thus prevent accidental access when loading players.

Here is how:

1. Start SGSCopy with *only* those devices connected to your computer (i.e., no other players or devices).

2. In the drop-list for each of those devices, change the setting to "Disabled".



3. Close SGSCopy and restart it. The drives still show in the device list, but they are grayed out and set to "Disabled". **If** these devices remain connected to the same USB ports, SGSCopy will remember them as "Disabled" and not touch them whenever players/devices are attached to a project.

4. If you also use the option to hide disabled and absent drives, the drive will be "hidden" the next time SGSCopy is started.

5. If you detach the device and later reconnect it, you will need to teach SGSCopy again to ignore it.

14: Comparing the contents of 2 players

Coming soon!

15: Flattening a folder structure

Coming soon!

16: The wildcard feature for file selection

Coming soon!

17: Overcoming drive letter limitation with mapped folders

Using "mapped folders" (mount points) with SGSCopy is *briefly* outlined below to make our users aware.

When you connect players to a computer in the conventional way, Windows automatically assigns the device a "drive letter". On most computers, A, B, C and D are typically already reserved. There could also be other drive letters reserved per the installed hardware on the computer as well as mapped network drives.

In the *best case*, there are 22 (26 – 4) letters available for connected USB devices. Once all the letters in the alphabet are assigned, no additional devices can be recognized by SGSCopy (i.e. Windows).

When there is a need to load large batches of players (assuming the computer has sufficient CPU power), this drive letter limitation poses a real problem. MegaVoice encountered this limitation in our production lab and overcame it by using a Windows convention for mapping USB ports to folders on the hard drive.

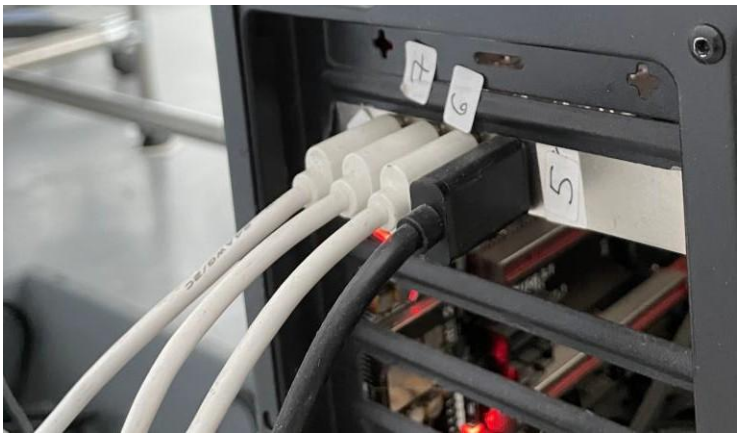
Since SGSCopy can copy to either USB devices or folders on disk, this is an ideal solution.
The SGS lab has one computer set up for 160 devices (10 hubs x 16 ports) and another for 96 devices (6 hubs x 16 ports)! To achieve this, hardware changes were required to the computer along with significant setup.

1. All available drive letters must be "blocked" by making dummy assignments so that Windows cannot assign a device to a drive letter when connected. This is easily accomplished using a start-up script.
2. Depending on the configuration of the computer, the USB host controller imposes a limitation for how many USB connections it can support. To overcome this limitation, a PCI Express USB expansion card must be added to the computer. If a multi-port card is chosen, it must be of the type where each USB port has its own separate USB controller (what SGS uses). Alternatively, multiple single-port cards may be used.
3. If any hardware changes are made, make sure the drivers for those devices are up-to-date.
4. Multi-port powered USB hubs must be used. SGS uses 16-port hubs.
5. The ports on all the hubs must be numbered consecutively from one to the maximum number being used.
6. A collection of folders, each with a number from one to the maximum must be defined on the hard drive.
7. One at a time, a target device must be connected to the hub's USB port beginning with the first. While connected, the Windows Disk Management tool must be used to do the following:
    a. Remove the assigned drive letter (if any)
    b. Assign the matching numbered folder to the port/device and save the definition
    c. i.e., port #1 is assigned to folder #1, port #2 is assigned to folder #2, and so on
8. Windows stores special system files in each folder so that it remembers these mappings.
9. Once the mapping is completed, from SGSCopy the target devices will be the mapped folders.
10. Connect all devices/players to the hubs beginning from port #1 and verify connectivity by the folder icons.
11. Depending on how many devices/players are connected, use the "Add folder" button to select (using multi-select) all the required folders, i.e., if you have 30 players connected select only folders 1 – 30.
12. Configure your project and attach it to the list of folders. Perform the typical copy process.
13. What happens during the copy is that the data "passes through" the mapped folder to the associated player. Nothing is written to the folder on disk, so available disk space is not a consideration.

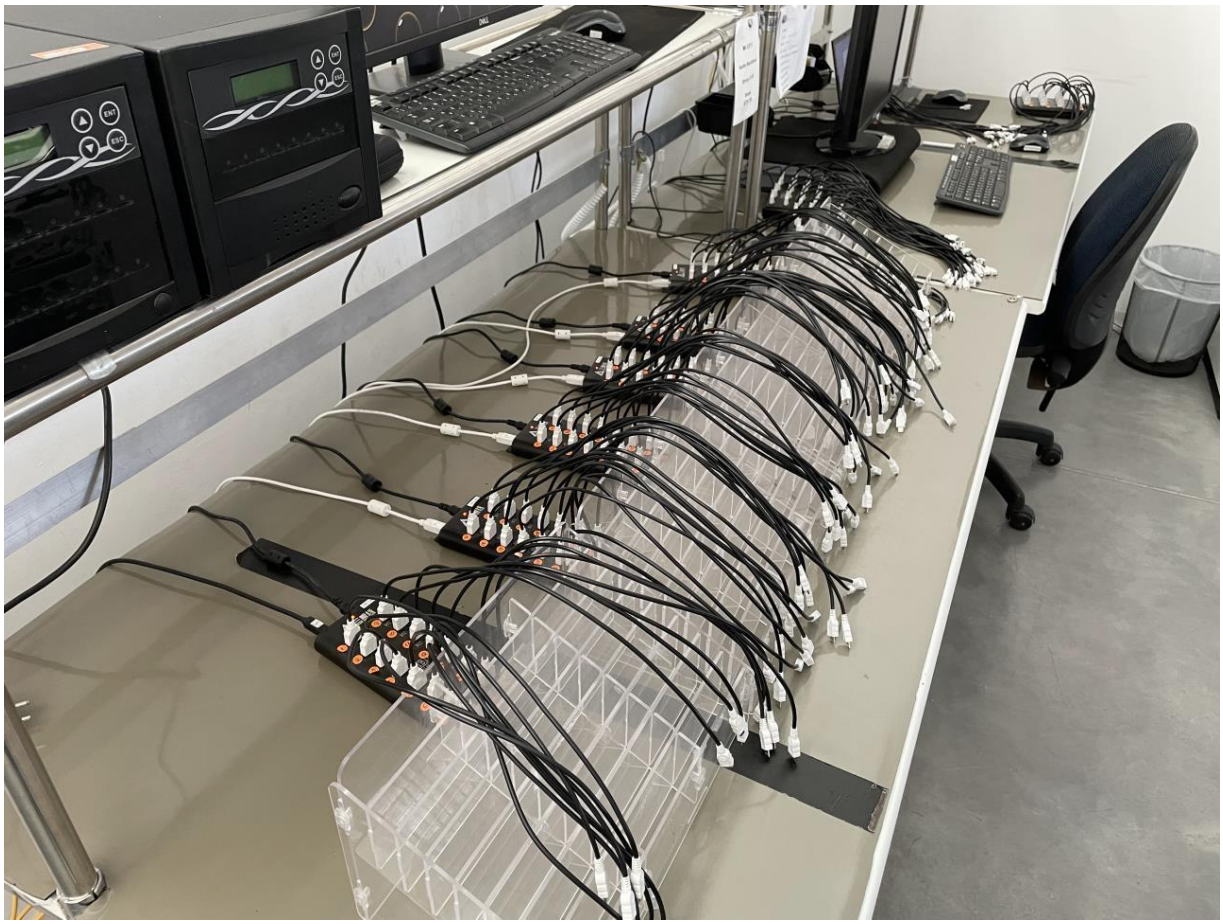
14. SGSCopy is able to perform a “format” on the devices mapped to the folders. Just make sure that “Quick Format” is specified in your project.

    Prior to this, because these folders resided on an NTFS hard drive or network-attached device, SGSCopy would change the format command to “delete all files” to prevent accidental format of the hard drive.

Close-up view of the StarTech PCI card (what SGS uses) from the back of the computer, with 4 different hubs attached to each of the USB connections. Each USB port is managed by a separate USB controller (see details in Windows Device Manager) providing maximum USB throughput.



One of the SGS computers is configured to use 96 mapped folders (6 hubs with 16 ports each). Each hub is connected to a USB port managed by a separate USB controller internally. The 6 USB ports in use are (2) from the motherboard and (4) from the PCI Express card shown above.
Notice the plastic “hives” in the foreground that hold the players upright for easy connection while keeping them separated for reduced chance of disturbance during loading which may lead to a disconnect.



18: Using automated sequence numbers

Coming soon!

19: Device rules validation

Coming soon!

20: Detail File List tab

Coming soon!

21: Adding notes to a project

Coming soon!

22: Folder and filename rewrite rules

Coming soon!

23: Automatic device model check

Coming soon!

24: Archiving devices in the Target Device list

Coming soon!

25: Text-to-speech options

Coming soon!

Tips for using SGSCopy

Coming soon!

Using SGSCopy on Mac OSX

General

SGSCopy is a Windows application. There is currently no plan to create a version of SGSCopy that is a true Mac application; however, using any of a number of virtualization software packages, SGSCopy can be implemented on most Mac systems.

The following recommendations are based on our own testing from a few years ago and were all performed by SGS on a MacBook Pro (Retina, mid 2012) running macOS High Sierra with a 2.3 GHz Intel Core i7 processor and 8GB of DDR3 RAM.


Any type of virtualization or emulation software requires sufficient memory and CPU power to work well. If your Mac is a bare-bones system, the performance you experience with any of these solutions may be disappointing, even to the point that SGSCopy will not run.

While some of the virtualization packages yielded better results than others, we are listing them in order of our preference based on our testing experience. Most of the available options require the purchase of the software, but in our estimation, it is a worthwhile investment to allow for implementation of a true Windows environment on Mac where *any* Windows app may be run – not just SGSCopy.

SGS did not attempt to explore all the features offered by each tested item. In each case, this was the basic process:

1. Download and install the software (and any related packages) on the Mac
2. Using an installation CD/DVD, or ISO image copied to the Mac, install Windows as a VM (Virtual Machine) within the tested software*
3. Get Windows set up, i.e., install all necessary updates + basic configuration*
4. Install SGSCopy in the Windows VM*
5. Test SGSCopy in numerous ways loading multiple SGS players

** Not applicable to WINE*


SGS assumes no responsibility for any damage that may be caused by the installation of and/or use of any of the 3rd party software products discussed in this section.


The following details are published solely as examples of what SGS succeeded in doing to provide a platform for successful execution of SGSCopy on a Mac computer.


Details noted such as pricing, web site links, system requirements, potential bugs, and caveats, etc. are correct and verified as of the date of this publication but are definitely subject to change over time.

VMware Fusion

- VMware Fusion 10 was the most trouble-free of all the software tested. It is our top pick. As of this writing, Fusion 13 is the latest version!
- Now available for free for personal use! ~~Must be purchased – around 120 USD for a new license, less for an upgrade. A 30-day trial version may be downloaded and tested.~~
- https://blogs.vmware.com/teamfusion/2024/05/fusion-pro-now-available-free-for-personal-use.html
- Any Mac launched in 2011 or later. OS X version 10.11 El Capitán minimum is required. See details on the website.
- An installation CD/DVD or ISO image for a Windows environment is required (license not included) – Windows 10 is preferred.
- Installation and creation of a VM was simple. Multiple VMs may be installed under Fusion.
- Provides seamless integration and sharing of files and folders between Mac and Windows.
- Both Windows and SGSCopy performed excellently within the VM. Performance is great and no problems were encountered at all during testing. A batch of 7 players was loaded numerous times with different messages from a 7-port powered hub.
- When connecting SGS players to the Mac, Fusion automatically asks whether to connect the device to Mac or an active VM (this feature is customizable). No special configuration was required to recognize SGS players.

Parallels Desktop for Mac

- Parallels Desktop 13 for Mac is our next choice. Version 13 was tested but as of this writing, version 20 is the latest.
- Must be purchased – around 100 USD for a new license, less for an upgrade. A 14-day trial version may be downloaded and tested.
- https://www.parallels.com/products/desktop/
- OS X 10.10.5 Yosemite minimum required. See details on web site.
- An installation CD/DVD, or ISO image, for a Windows environment is required (license not included) – Windows 10 is preferred.
- Installation and creation of a VM was simple. Multiple VMs may be installed under Parallels Desktop.
- The (optional but recommended) Parallels Tools module provides seamless integration and sharing between Mac files and folders and Windows files and folders.
- SGSCopy performance is great, and no problems were encountered at all during testing. A batch of 7 players was loaded numerous times with different messages from a 7-port powered hub.
- When connecting SGS players to the Mac, Parallels automatically asks whether to connect the device to Mac or an active VM (this feature is customizable). No special configuration was required to recognize SGS players.

Oracle VM VirtualBox

- Oracle VM VirtualBox is also recommended -- but with a caution.
- This is free, open-source software from Oracle and is offered “as is”. It is, however, being actively maintained by a group of developers so there is support.
- https://www.virtualbox.org/
- Also required is the VirtualBox extension pack: https://download.virtualbox.org/virtualbox/7.1.6/Oracle_VirtualBox_Extension_Pack-7.1.6.vbox-extpack
  - Once the extension pack is installed, the USB 3.0 stack should be used in the VM settings. If the installed Windows does not have the driver available, then the Intel 3.0 USB eXtensible Host Controller should be downloaded and installed.
- Requires 10.10 (Yosemite), 10.11 (El Capitán), 10.12 (Sierra) or 10.13 (High Sierra) – 64-bit.
- An installation CD/DVD or ISO image for a Windows environment is required (license not included).
- Installation and creation of VMs was simple. Multiple VMs may be installed under VirtualBox.
- Integration between Mac and Windows was not as seamless as other options.
  - PROBLEM! Sometimes when using one of the VMs under VirtualBox, a simple operation, like resizing or moving the VM window, would cause the VM to simply disappear and abnormally terminate. Windows had to be restarted and any work in progress was lost.
  - Because of the issues noted above we deem it undependable. Since the problems were sporadic and difficult to replicate, we did not pursue a fix with the developers. They may be able to fix this issue if someone is willing to spend time with them on it.
  - VirtualBox also required some additional configuration for it to recognize SGS players and connect them to the VM.
    - USB filters had to be specified: Use Vendor ID=10D6 and Product ID=1101.
- SGSCopy performed well within the VM. Performance is not quite as good as Fusion and Parallels and no problems were encountered at all during testing. A batch of 7 players was loaded numerous times with different messages from a 7-port powered hub.
- When connecting SGS players to the Mac, VirtualBox automatically asks whether to connect the device to Mac or an active VM (this feature is customizable).

WINE

- WINE is last in our list. We do not recommend it but wanted to make our users aware that it is an inexpensive, albeit time-consuming option to implement.
- Even though the claim is that WINE is *not* an emulator (**W**ine **I**s **N**ot an **E**mulator), it does provide a type of emulation and is described as "*a free and open-source compatibility layer that aims to allow computer programs (application software and computer games) developed for Microsoft Windows to run on Unix-like operating systems.*" It will simulate a Windows environment for execution of a single Windows application running on Mac OSX. It requires several other package installations to function correctly. It does not create a VM running Windows as all the other options do.
- All the software required is free to download and use.
- Here is a complete, easy to follow tutorial that will walk you through all the steps necessary for the installation and setup of all the software: https://www.davidbaumgold.com/tutorials/wine-mac/
- Requires macOS 10.10 (Yosemite) or above.
- There is no special integration between Mac files and folders and the Windows application.
- SGSCopy performance was sluggish at best. Not all features of the SGSCopy program work the way they normally do in a true Windows environment. Regardless, we were able to successfully load several players, but it certainly wasn't seamless or efficient.
- When connecting SGS players to the Mac, it was cumbersome to get SGSCopy to recognize them. There was a process necessary for this, and it was one-player-at-a-time. Sometimes it would remember the USB connection and sometimes it wouldn't, and the process had to be repeated.
- Running SGSCopy from WINE will work, and the price is certainly right (free!), but it is unlikely that one would settle for it after experiencing the performance and features of the better virtualization choices.

 macOS versions from Catalina forward cannot run SGSCopy with WINE. But see Crossover instead.

Crossover

- Crossover is a more advanced, easier-to-use version of WINE that we recently learned about. Their claim is that "CrossOver is the easiest way to run many Microsoft applications on your Mac without a clunky Windows emulator."
- Take note that they state "many" Microsoft applications and not "any". Some Windows applications may not work with Crossover but SGSCopy will.
- We have not tested Crossover ourselves but have received positive feedback from numerous partners that are using it successfully with SGSCopy on their Mac devices.
- You can download a free 14-day trial version or purchase it for 74 USD.
- https://www.codeweavers.com/crossover

Apple Boot Camp

Another utility that deserves mention is Apple's own Boot Camp software. Boot Camp is *free* from Apple and includes a *free* license for Windows 10.

SGS did not test this option since it is a known solution that has been available from Apple for some time.

Unlike some of the other software we have reviewed, Boot Camp does not provide a virtual engine but rather is dual-boot software for your Mac computer. It partitions your hard drive into two parts – the current Mac O/S and a Windows O/S. When you turn your computer on, you choose which operating system from which to boot.

While this is a free utility, and is fully supported by Apple, there are disadvantages compared to virtual software:

- You must boot your computer from either Mac or Windows.
- You cannot easily switch from Windows to Mac or vice-versa. One O/S cannot communicate with the other. To change to the other, you must reboot your computer.
- Data is also not "shared" between Windows and Mac, so if you need the same data accessible by both on the hard drive it will likely need to be duplicated or moved to a removable device.
- Since data cannot be shared across operating systems, this potentially reduces the amount of hard disk space available to the Mac O/S even more.

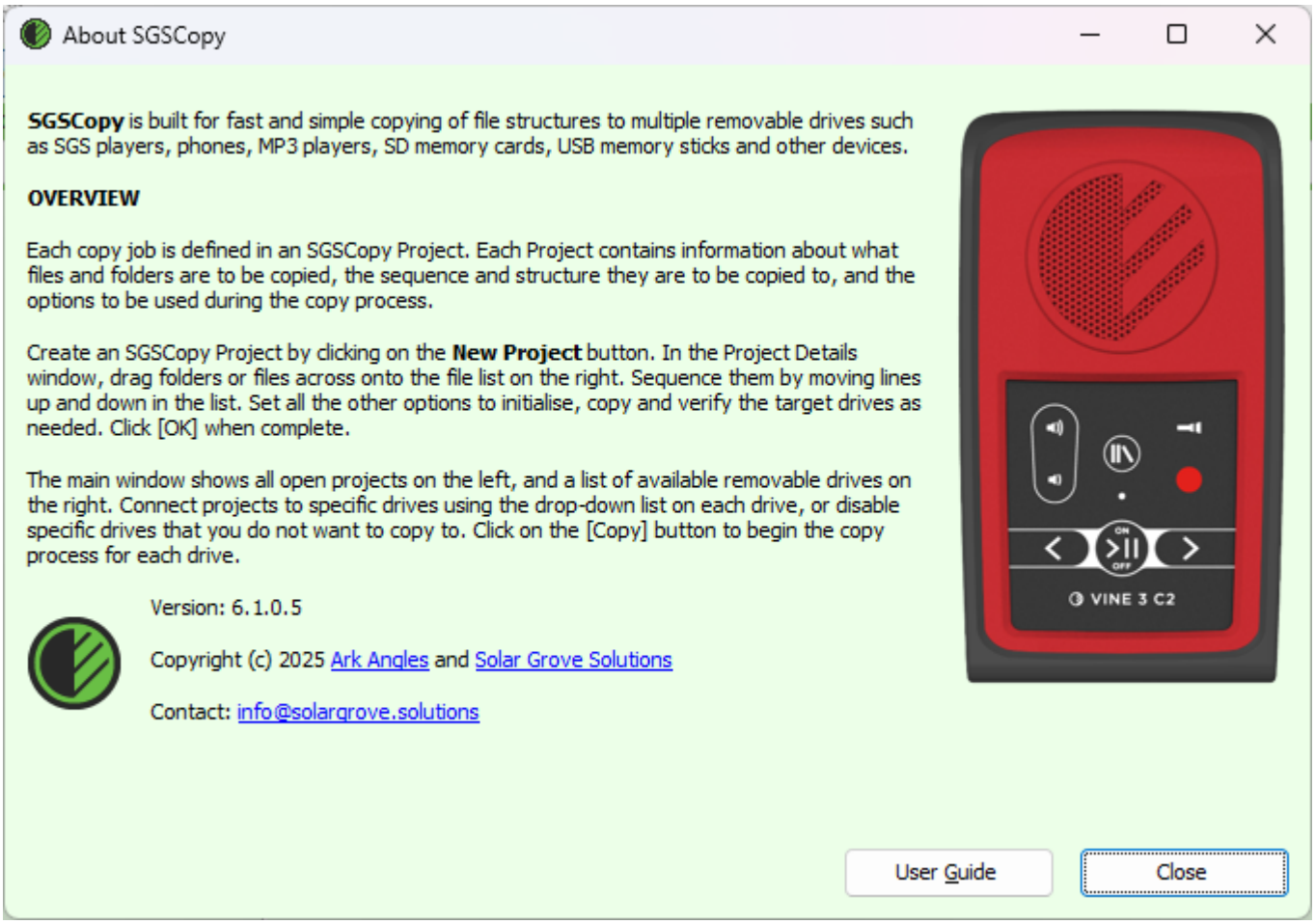
If Boot Camp will work for you, go here to get started: https://support.apple.com/en-us/HT201468

Technical Support

General

SGSCopy is offered “as is” from Solar Grove Solutions with no implied warranty.

If you need assistance with SGSCopy, please contact us by clicking here.



User Guide and Support

You may open this document on the SGS website directly by clicking the “User Guide” button.

Appendix

Sample player log file

**Coloring is for emphasis here and does not appear in the actual log since it is plain text file.*

```
2023-06-09 09:17:53.033 SGSCopy 5.0.0.6 device log
Drive Path:  D:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  6830-C44D
Volume Label:  FAT32-64K
Drive Size:  7.5GB (8,048,869,376 bytes)
Allocation Size:  64KB (65,536 bytes)
USB Device Serial:  XBJEFA90703ADFDE
----------
2023-06-09 09:17:53.272 Drive D:\ is Online - Drive D:\ is online and ready but not attached to
any project
2023-06-09 09:17:53.498
----------
Drive D:\ information:
Drive Path:  D:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  6830-C44D
Volume Label:  FAT32-64K
Drive Size:  7.5GB (8,048,869,376 bytes)
Allocation Size:  64KB (65,536 bytes)
USB Device Serial:  XBJEFA90703ADFDE
File Count:  3
Folder Count:  0
File Size:  12.4MB (13,041,664 bytes)
Size on Disk:  12.2MB (12,779,520 bytes)
----------
2023-06-09 09:18:13.854 Drive D:\ assigned to Load music to SD
2023-06-09 09:18:13.979 Drive D:\ is Unverified - Drive D:\ files have not been checked against
the files in the project
2023-06-09 09:18:14.101
----------
Drive D:\ information:
Drive Path:  D:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  6830-C44D
Volume Label:  FAT32-64K
Drive Size:  7.5GB (8,048,869,376 bytes)
Allocation Size:  64KB (65,536 bytes)
USB Device Serial:  XBJEFA90703ADFDE
File Count:  3
Folder Count:  0
File Size:  12.4MB (13,041,664 bytes)
Size on Disk:  12.2MB (12,779,520 bytes)
Net Required by Project:  35MB (36,651,008 bytes)
----------
2023-06-09 09:18:17.631 Target Standard MP3 Player, Smartphone, Tablet, USB or SD; Test drive;
Quick format; Never replace files; Incl hidden files; Incl empty dirs
2023-06-09 09:18:17.682 Drive D:\ is Formatting... - Drive D:\ is being quick formatted
2023-06-09 09:18:17.750 Exec 'format.com' 'D: /x /y /v: /q /FS:FAT32 /A:8192'
WaitForInputIdle=-1
2023-06-09 09:18:19.615 Exec 'format.com' 'D: /x /y /v: /q /FS:FAT32 /A:8192'
WaitForSingleObject=0
2023-06-09 09:18:19.927 Drive D:\ is Testing... - Drive D:\ is being tested with a sample read
and write
```

```
2023-06-09 09:18:19.927 Test drive D:\
2023-06-09 09:18:19.955 Drive D:\ is Emptying... - Drive D:\ is deleting all folders and files
2023-06-09 09:18:19.955 Empty drive D:\
2023-06-09 09:18:19.979 Drive D:\ is Copying... - Drive D:\ is copying all files in the project
2023-06-09 09:18:19.979 Copying project "Load music to SD" Totals: 13 files
2023-06-09 09:18:19.983 Copy "C:\Test Messages\Hymns\01 - This Is My Fathers World.mp3" ->
"D:\01 - This Is My Fathers World.mp3" [OK]
2023-06-09 09:18:20.451 Copy "C:\Test Messages\Hymns\02 - There Is A Balm In Gilead.mp3" ->
"D:\02 - There Is A Balm In Gilead.mp3" [OK]
2023-06-09 09:18:20.743 Copy "C:\Test Messages\Hymns\03 - Holy, Holy, Holy.mp3" -> "D:\03 -
Holy, Holy, Holy.mp3" [OK]
2023-06-09 09:18:21.079 Copy "C:\Test Messages\Hymns\04 - Come, Thou Long-Expected Jesus.mp3" -
> "D:\04 - Come, Thou Long-Expected Jesus.mp3" [OK]
2023-06-09 09:18:21.419 Copy "C:\Test Messages\Hymns\05 - Be Thou My Vision.mp3" -> "D:\05 - Be
Thou My Vision.mp3" [OK]
2023-06-09 09:18:21.791 Copy "C:\Test Messages\Hymns\06 - I'd Rather Have Jesus.mp3" -> "D:\06
- I'd Rather Have Jesus.mp3" [OK]
2023-06-09 09:18:22.310 Copy "C:\Test Messages\Hymns\07 - The Love Of God.mp3" -> "D:\07 - The
Love Of God.mp3" [OK]
2023-06-09 09:18:22.735 Copy "C:\Test Messages\Hymns\08 - For The Beauty Of The Earth.mp3" ->
"D:\08 - For The Beauty Of The Earth.mp3" [OK]
2023-06-09 09:18:23.242 Copy "C:\Test Messages\Hymns\09 - When I Survey The Wondrous Cross.mp3"
-> "D:\09 - When I Survey The Wondrous Cross.mp3" [OK]
2023-06-09 09:18:23.594 Copy "C:\Test Messages\Hymns\10 - O Mighty Cross.mp3" -> "D:\10 - O
Mighty Cross.mp3" [OK]
2023-06-09 09:18:24.007 Copy "C:\Test Messages\Hymns\11 - A Hymn For Peace.mp3" -> "D:\11 - A
Hymn For Peace.mp3" [OK]
2023-06-09 09:18:24.403 Copy "C:\Test Messages\Hymns\12 - Untitled.mp3" -> "D:\12 -
Untitled.mp3" [OK]
2023-06-09 09:18:24.873 Copy "C:\Test Messages\Hymns\Hymns.md5" -> "D:\Hymns.md5" [OK]
2023-06-09 09:18:24.910 Copied 47.1MB from 13 files in 00:00:04 at 9.6MB per second
2023-06-09 09:18:25.124 Drive D:\ is Verifying... - Drive D:\ is verifying all files
2023-06-09 09:18:25.124 Verify drive D:\ Totals: 13 files [OK]
2023-06-09 09:18:25.124 Check Dir: D:\ [OK]
2023-06-09 09:18:25.124 Verify: D:\01 - This Is My Fathers World.mp3 [OK]
2023-06-09 09:18:25.144 Verify: D:\02 - There Is A Balm In Gilead.mp3 [OK]
2023-06-09 09:18:25.157 Verify: D:\03 - Holy, Holy, Holy.mp3 [OK]
2023-06-09 09:18:25.171 Verify: D:\04 - Come, Thou Long-Expected Jesus.mp3 [OK]
2023-06-09 09:18:25.184 Verify: D:\05 - Be Thou My Vision.mp3 [OK]
2023-06-09 09:18:25.198 Verify: D:\06 - I'd Rather Have Jesus.mp3 [OK]
2023-06-09 09:18:25.212 Verify: D:\07 - The Love Of God.mp3 [OK]
2023-06-09 09:18:25.226 Verify: D:\08 - For The Beauty Of The Earth.mp3 [OK]
2023-06-09 09:18:25.243 Verify: D:\09 - When I Survey The Wondrous Cross.mp3 [OK]
2023-06-09 09:18:25.247 Verify: D:\10 - O Mighty Cross.mp3 [OK]
2023-06-09 09:18:25.251 Verify: D:\11 - A Hymn For Peace.mp3 [OK]
2023-06-09 09:18:25.257 Verify: D:\12 - Untitled.mp3 [OK]
2023-06-09 09:18:25.263 Verify: D:\Hymns.md5 [OK]
2023-06-09 09:18:25.314 Drive D:\ is Complete - Drive D:\ files in the project have all been
successfully copied
2023-06-09 09:18:25.448
----------------------
Drive D:\ information:
Drive Path:  D:\
Drive Type: REMOVABLE
File System: FAT32
Serial Number: BC2E-7CF0
Volume Label: MUSIC
Drive Size:  7.49GB (8,044,675,072 bytes)
Allocation Size:  8KB (8,192 bytes)
USB Device Serial:  XBJEFA90703ADFDE
File Count: 13
Folder Count:  0
File Size:  47.2MB (49,463,296 bytes)
Size on Disk:  47.5MB (49,807,360 bytes)
-----------
```

Sample Main log file

**Highlighting is for emphasis here and does not appear in the actual log since it is plain text file.*

```
2025-03-19 06:55:25.305 SGSCopy 6.1.0.4 started
2025-03-19 06:55:25.524 Application Settings - Language: English; Max Concurrent Formats: 2; Hash
Method: 128-bit MD5; Sound Notifications: On; Show USB Details: Off; Hide Absent Drives: Off; Hide
Master Drives: On; Debug Mode: 0; Log To Device: On
2025-03-19 07:00:22.111 Help selected
2025-03-19 07:03:17.400 Standard Mode selected
2025-03-19 07:42:08.048 Standard Mode selected
2025-03-19 07:43:34.011 E: DBT_DEVTYP_VOLUME [flags=0] inserted
2025-03-19 07:43:34.482 Drive D:\ is Starting... - Drive D:\ processing is getting started
2025-03-19 07:43:35.143 Drive E:\ is Starting... - Drive E:\ processing is getting started
2025-03-19 07:43:36.499 Drive D:\ is Online - Drive D:\ is online and ready but not attached to any
project
2025-03-19 07:43:36.499 ----------------
Drive D:\ information:
Drive Path:  D:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  E6E3-1556
Volume Label:  VNE3E1-T01O
Drive Size:  7.82GB (8,400,928,768 bytes)
Allocation Size:  8KB (8,192 bytes)

File Count:  5,949
Folder Count:  350
File Size:  6.08GB (6,529,540,096 bytes)
Size on Disk:  6.08GB (6,529,024,000 bytes)
----------------
2025-03-19 07:43:36.522 Drive E:\ is Online - Drive E:\ is online and ready but not attached to any
project
2025-03-19 07:43:36.532 ----------------
Drive E:\ information:
Drive Path:  E:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  60C4-DEF5
Volume Label:  RECORDING
Drive Size:  7.41GB (7,956,594,688 bytes)
Allocation Size:  8KB (8,192 bytes)

File Count:  5,977
Folder Count:  351
File Size:  6.47GB (6,946,865,152 bytes)
Size on Disk:  6.47GB (6,943,924,224 bytes)
----------------
2025-03-19 07:43:47.659 Refresh selected
2025-03-19 07:43:47.675 Drive D:\ is Starting... - Drive D:\ processing is getting started
2025-03-19 07:43:47.693 Drive E:\ is Starting... - Drive E:\ processing is getting started
2025-03-19 07:43:47.707 Drive E:\ is Removed - Drive E:\ has been removed or is no longer online
2025-03-19 07:43:47.730 Drive D:\ is Online - Drive D:\ is online and ready but not attached to any
project
2025-03-19 07:43:47.730 ----------------
Drive D:\ information:
Drive Path:  D:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  E6E3-1556
Volume Label:  VNE3E1-T01O
Drive Size:  7.82GB (8,400,928,768 bytes)
Allocation Size:  8KB (8,192 bytes)

File Count:  5,949
```

```
Folder Count:  350
File Size:  6.08GB (6,529,540,096 bytes)
Size on Disk:  6.08GB (6,529,024,000 bytes)
----------------
2025-03-19 07:43:51.641 E: DBT_DEVTYP_VOLUME [flags=0] removed
2025-03-19 07:43:58.592 C: DBT_DEVTYP_VOLUME [flags=0] inserted
2025-03-19 07:43:59.093 Drive D:\ is Starting... - Drive D:\ processing is getting started
2025-03-19 07:43:59.605 Drive D:\ is Online - Drive D:\ is online and ready but not attached to any
project
2025-03-19 07:43:59.605 ----------------
Drive D:\ information:
Drive Path:  D:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  E6E3-1556
Volume Label:  VNE3E1-T01O
Drive Size:  7.82GB (8,400,928,768 bytes)
Allocation Size:  8KB (8,192 bytes)

File Count:  5,949
Folder Count:  350
File Size:  6.08GB (6,529,540,096 bytes)
Size on Disk:  6.08GB (6,529,024,000 bytes)
----------------
2025-03-19 07:44:54.603 Standard Mode selected
2025-03-19 07:45:18.351 Standard Mode selected
2025-03-19 07:47:10.816 Standard Mode selected
2025-03-19 07:47:24.157 Standard Mode selected
2025-03-19 07:47:37.336 Standard Mode selected
2025-03-19 07:47:42.762 Standard Mode selected
2025-03-19 07:49:53.508 Standard Mode selected
2025-03-19 07:50:25.291 New Template Project "&Vine 3 E Series" selected
2025-03-19 07:50:25.335 Checking destination folder and file structure for project Vine 3 E Series (1)
2025-03-19 07:50:25.348 Edit Vine 3 E Series (1) selected
2025-03-19 07:50:25.940 Checking destination folder and file structure for project Vine 3 E Series (1)
2025-03-19 07:53:25.274 Standard Mode selected
2025-03-19 07:57:09.397 C: DBT_DEVTYP_VOLUME [flags=0] removed
2025-03-19 07:57:18.725 G: DBT_DEVTYP_VOLUME [flags=0] inserted
2025-03-19 07:57:19.055 Drive D:\ is Starting... - Drive D:\ processing is getting started
2025-03-19 07:57:19.655 Drive G:\ is Starting... - Drive G:\ processing is getting started
2025-03-19 07:57:20.571 Drive D:\ is Online - Drive D:\ is online and ready but not attached to any
project
2025-03-19 07:57:20.573 ----------------
Drive D:\ information:
Drive Path:  D:\
Drive Type:  REMOVABLE
File System:  FAT32
Serial Number:  E6E3-1556
Volume Label:  VNE3E1-T01O
Drive Size:  7.82GB (8,400,928,768 bytes)
Allocation Size:  8KB (8,192 bytes)
```

Images of SSU cables

Coming soon!