Darksoft STV Installation Guide

Installation Guide written and compiled by @djsheep. Last Edited 14th December 2022.

https://highscoresave.com/

Steps for a successful install of your online or offline high score save kit -

- Ensure your gameboard is working 100% before installing kit
- Ensure power to game is off before removing your gameboard from cabinet
- Label any connectors that you will be disconnecting. This will make reinstalling easier once kit is on gameboard
- Note which way your connectors/cables are on. (We suggest taking pictures to help you remember!)
- Work in a well-lit area on your workbench

REQUIRED HARDWARE

Aside from the STGV Multi Kit, you will need a microSD card to prepare and store your game backups. The SD card must be SDHC type, SDXC cards won't work!

Please only use genuine branded cards from companies such as SanDisk, Kingston, Samsung,etc. As a rule of thumb, the smaller the SD card the better.

The card must be formatted to FAT32. We recommend using the free “SD Memory Card Formatter” software available at sdcard.org/downloads/formatter/

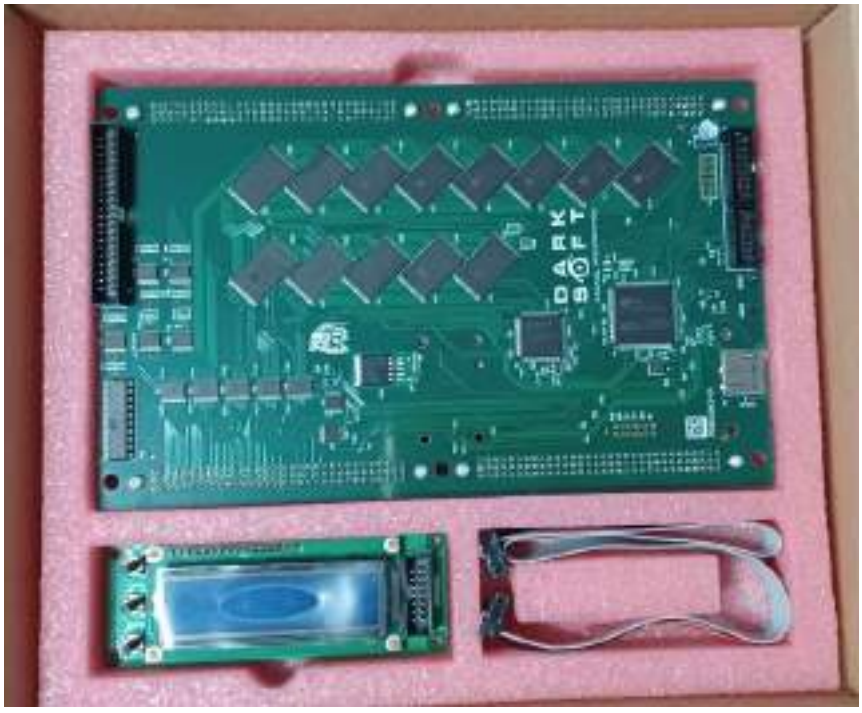
If transferring files on a Mac computer, please make sure to delete unnecessary files usingthe “dot_clean" command on your SD card via Terminal.

PLEASE NOTE: We **DO NOT** provide any game software of any kind with our kits. You are onyour own to provide the games files required.

DARKSOFT ST*V MULTI: DARK KNIGHT EDITION

Installation Guide v1.0

Thanks kindly for your purchase of the new “Dark Knight Edition” of the ST-V Multi. The ST-V Multi was the first ever Darksoft multi and it’s a pleasure to bring this updated version with new features and form factor to arcade fans around the world!



- The ST-V multi uses flash memory, so whatever is loaded in the memory will stay there until a new write or game change is made.
- In order to change the content of the flashes you simply use a LCD or OLED selector to load the games off your SD card.
- When the game flashing process begins, two lights will appear on the multi and you will hear the sound file (sounds\start.wav) if it exists. When the process has finished only one light will remain on and you will hear the sound file (sounds\end.wav) if it exists.
- This “Dark Knight Edition” ST-V Multi has a connector to connect a genuine or reproduction sound board for Batman Forever which plays stereo sound for the game.
- If for any reason your multi doesn't work, please contact us and we'll do what is necessary to fix it or help with troubleshooting steps. For help and to begin this process, visit the arcade-projects.com forum and comment in the necessary troubleshooting thread.

NOTE: Please follow correct ESD procedures before and during the handling of the ST-V Multi hardware.

INSTALLATION INSTRUCTIONS:

1. Firstly, if your ST⍺V donor motherboard has a terminator PCB in one of the slots, you will need to remove it.

2. Next, we need to install a wire for Auto Reset. Solder one of the included DuPont wires to Pin #8 of IC12. Lightly tin both the DuPont wire and Pin #8 with solder andgently tap it down to make a strong connection. Whilst this step is optional, if this wire is not installed, you will need to power cycle your Multi for the game to load.
   NOTE: Be extremely careful during this step as it's very easy to lift Pins on this ICwith too much heat or incorrect technique. Lifting a

pin will cause your STGV motherboard to stop functioning.

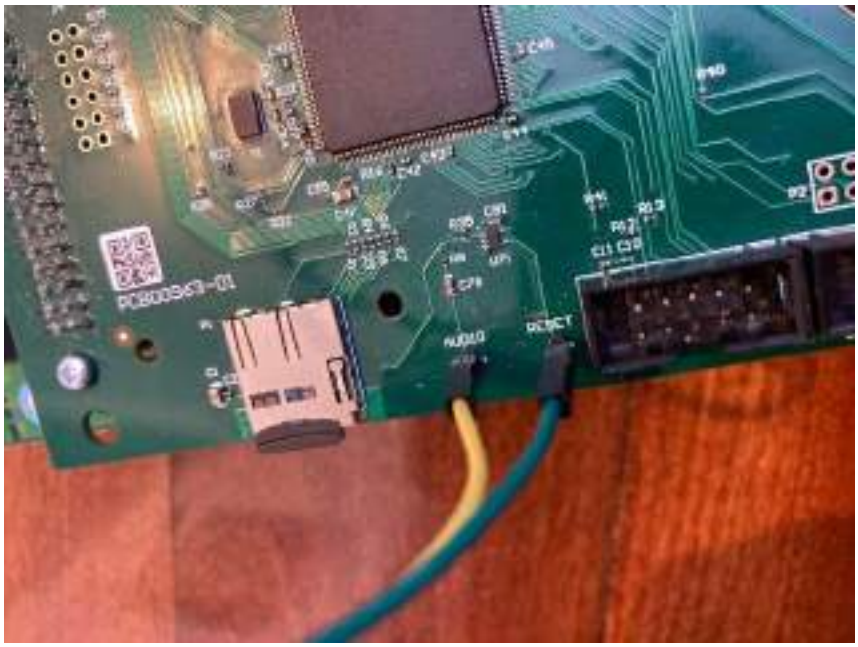
3. The next step is to install a wire for START and END audio. Soldering this wire enables the multi to play a sound over JAMMA as a game starts loading and then again when the game has finished loading. This step is purely optional, but a cooland customizable feature to make your multi more personal.
   Solder a DuPont cable to Pin #13 of the audio amplifier as pictured below.

   NOTE: Audio only plays over JAMMA. If you are using Stereo (for example, via an Everten Stereo board), the Start/End audio will not play.

4. Next, install the multi PCB onto your motherboard. The connectors are keyed so there is no risk of installing it in the wrong orientation. Push down gently on each ofthe 4 connectors, ensuring first that the multi is lined up perfectly on top of the pinsbeforehand.

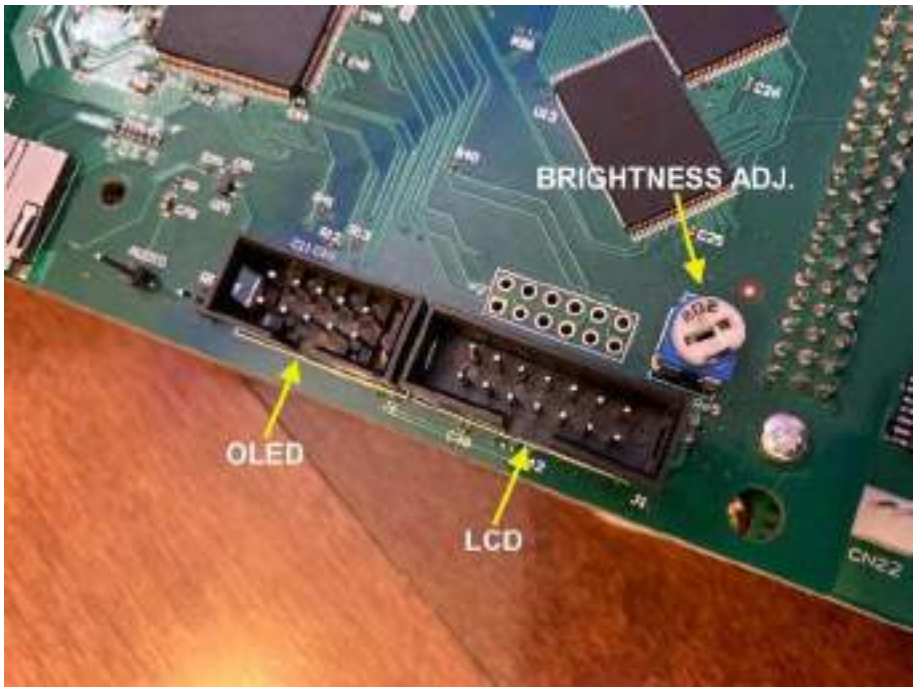
   NOTE: Apply only gentle pressure whilst making sure to support the STGV motherboard on the underside to avoid any damage.

5. The final installation step is to connect the Reset and Audio wires to the Multi. Usingthe colour coding shown in this guide; Green is **RESET** and Yellow is **AUDIO**. The colours of the wires included in your kit may be a different colour, so please be sure to check.

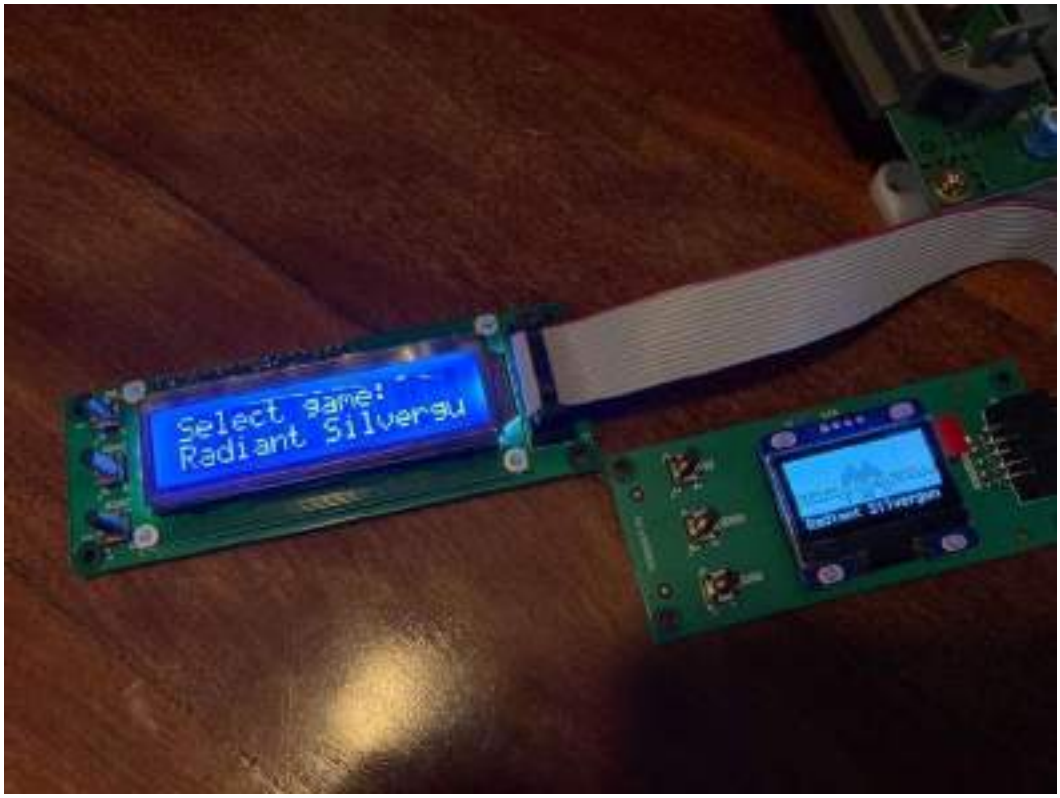


6. Now connect the selector of your choice. The 10-pin connector is for OLED and the 14-pin connector is for a traditional LCD screen. Either selector will work standalone, but there's also no danger in using both at the same time. The screens will refresh in unison in this case.

   There is a potentiometer near the connectors to adjust the brightness of the LCD screen. This potentiometer has no affect on the OLED screen.



7. Finally, connect your SD card with your game backups, turn on your Supergun /Arcade cabinet, select the game with your selector of choice and enjoy!



ST-V MODBIOS

Whilst not required, it is highly suggested you use a Modbios with the Multi. This will allowyou to select a region before starting a game as there are certain games which only work with certain regions. To upgrade your BIOS, you will be required to burn and replace the 27C400 EPROM on your motherboard. More information available here: tjaberg.com/stv/index.htm

UPDATING THE MULTI FIRMWARE

To update the Firmware, simply place the update file [named “flash.img”] in the root of yourSD card and power on your multi.

As the Firmware is being updated, one of the LEDs will blink fast and then slow. When it stops completely [wait 30 seconds to be sure], you can then cycle the power and boot intothe new firmware.

GENERAL TROUBLESHOOTING

STV Motherboards have a common failure on the solder of the SH2 processors, even if your motherboard works well with one game, it may fail on others when using the multi due to this issue. In our testing we’ve found that rework on the SH2 solves about 90% of issues of this nature.

This guide will be updated in future revisions outlining any issues users face with theirinstallations.

SOUND BOARD INSTALLATION

Below is a picture of the Sound Board used for Batman Forever. The manual will beupdated in the future with detailed installation information.

APPENDIX A: FILE STRUCTURE

Game files need to be in individual directories below the folder “/games” in the root of theSD card.
The “name” file in each directory specifies the text used on the selector to display thefolders game.
The “logo.bin” file in each directory is the image that will displayed on the OLED selector.
The extension of the game files for this multi must be 2 characters. For example, file.04, notfile.4.
In some cases, file .07 and .13 need to be converted. They have the same content but sorteddifferently.
NOTE: We DO NOT provide any game software of any kind with our kits. You are on yourown to provide the games files required.

APPENDIX B: CREATING AUDIO FILES

Many programs that claim to save uncompressed files don't do it properly or add extra metadata that misleads the cartridge. Please use the excellent open source program Audacity [audacity.sourceforge.net/] to create audio files for use with the Multi.

- Open your favorite .WAV or .MP3 audio file.
- Select File G> Export [Ctrl+Shift+E].
- [Save as Type] Other uncompressed Files.
- Click [Options] and choose WAV with encoding of “Unsigned 8 bit PCM”.
- In the sample rate field, choose 44100.

After your file is created, you need to rename the file to either start.wav or end.wav which are the songs played before and after writing a new game. These files should be place in the“sounds” directory at the root of your SD card.

APPENDIX C: CREATING IMAGE FILES

We recommend using the free software Imagemagick [https://imagemagick.org/script/download.php] to convert images for use with the multi.
The source Bitmap images must be sized at 128x56 pixels to fit the screen and allow roomfor text to show.
For example, if your image is called “image.bmp”, the command line for conversion wouldbe: magick convert image.bmp Gnegate Gdepth 1 gray:logo.bin - After converting the file, place it in your game directory and it will be visible on the OLEDselector screen.