

Assembly Guide

1.1a External DB25 Assembly

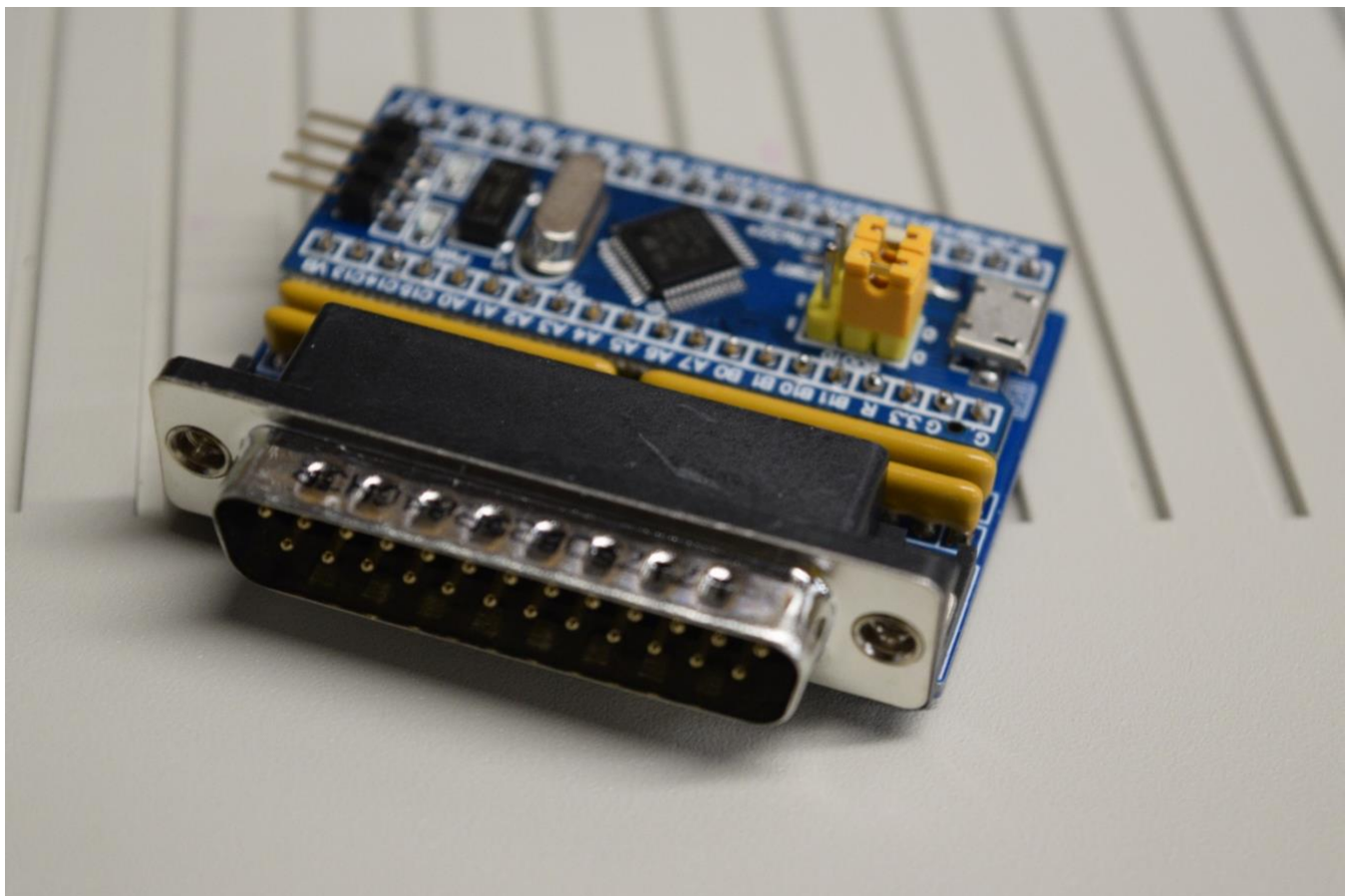









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Parts List

Your BlueSCSI Kit includes the following parts:

<p>BlueSCSI 1.1 Desktop Printed Circuit Board</p> 	<p>330 Ohm Resistor Network (x2) 4610X-101-331LF</p> 	<p>220 Ohm Resistor Network (x2) 4610X-101-221LF</p> 	<p>Schottky Diodes (x2) 1N5818-T</p> 	<p>Micro SD Card Socket (1) Surface Mount</p> 
<p>25-Pin Male PCB DB25 Right Angle L77SDB25S1ACH4R</p> 	<p>Pre-Programmed ARM STM32 Development Board w/ headers STM32F103C8T6</p> 			

Minimum Tools and supplies you will need

<p>Good quality Soldering Iron</p> 	<p>Flux (Paste or liquid)</p> 	<p>Solder</p> 	<p>Masking Tape</p> 	<p>Diagonal Wire Cutters</p> 
<p>Needle Nose</p> 	<p>Solder Wick</p> 	<p>Multi Meter</p> 		

Before You Begin

These instructions assume a basic knowledge of soldering and electronics. All parts are through-hole except for an 8-pin micro-SD card connector that requires to be surface mounted soldered.

For those interested in a review of soldering basics and safety tips, two good tutorials can be found at the links below:

<https://youtu.be/lpkkfK937mU>

<https://learn.sparkfun.com/tutorials/how-to-solder-through-hole-soldering>

For those of you who are new to soldering surface mount devices, there are a few good tutorials available here:

Drag Solder Technique:

https://www.youtube.com/watch?v=Z_KL4fWOMug

Here is a video if you have a hot air rework station:

<https://www.youtube.com/watch?v=vzoMEBmCNQQ>

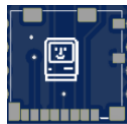
Basic Electronics

This kit is simple to assemble and there is a GitHub repository that has extensive information available. It is located [here](#). There is also a Retro SCSI Discord channel available [here](#) that also has a wealth of information and to get support if something is not working as expected. Remove all parts from the kit and separate them for easy accessibility. NOTE: The resistors and LED jumpers will only be in the kit if you purchased the “LED Option”.

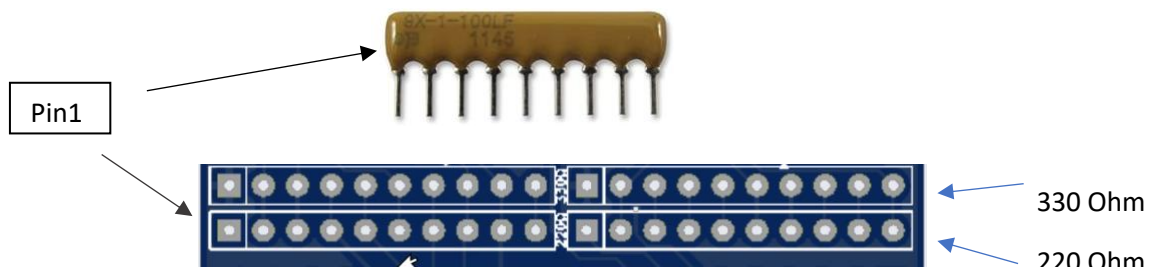
Installation Steps

STEP 1 – For best results, use a Magic Rub eraser or IPA to clean all pads on the bottom and top of the board. This will ensure that the pads will more easily accept the soldering. Just rub the eraser lightly on the pads.

STEP 2 – Begin by placing the board on a solid surface and solder the surface mounted micro-SD connector on the board. The [Drag Solder Technique](#) is the easiest method unless you own a hot-air rework station. Once it is soldered on the board, check the connections using a magnifying glass and multimeter. Once the STM32 (BluePill) is soldered on the board. This will be difficult to touch up and fix. Also, test fit a micro-SD card now and make sure you don't have solder “blobs” on the sides or obstructing the socket. If you do, use solder wick to remove any excess solder.

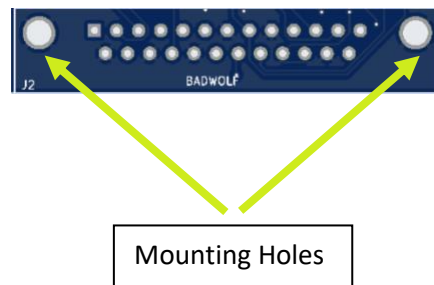
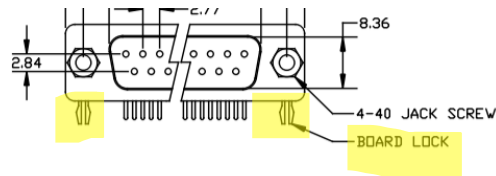


STEP 3 – Solder the resistor networks in place making sure to note the correct placement and orientation. Use clay or masking tape to hold them straight and in place for soldering. See diagram below.

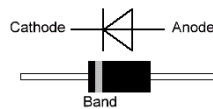


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STEP 4 – Solder the DB25 right angle connector to the PCB. Installing this is a little tricky. The easiest way to install this is to start inserting the connector into the proper side of the PCB just enough to get the pins started. Then insert a small flat blade screwdriver between the PCB and the metal board lock on the connector and gently push the metal board lock into the mounting hole on the PCB. You will see the connector start to go in. Repeat this for the other board lock and the connector should snap right in and mount flush to the board. Use masking tape or clay to keep it in place while you solder it. **MAKE SURE YOU SOLDER THE BOARD LOCKS TO THE PCB.** This will help secure the connector when inserting and removing it from the SCSI port.



STEP 5 - Solder the Schottky diode onto the bottom of board. Ensure that it is as flush as possible with the board and trim the legs after soldering with your diagonal cutters as flush as you can with the board. **NOTE: Diodes have polarity (cathode and anode). Make sure you solder the diodes with the polarity correct. Please see diagram below.**



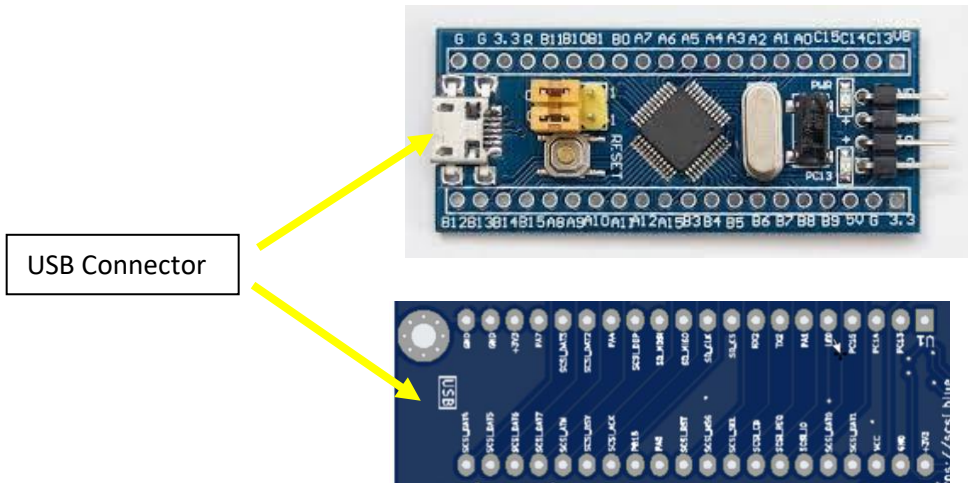
You can purchase another Schottky diode if you have a Macintosh Plus computer and want to make the diode modification to allow the BlueSCSI to be powered from the Macintosh’s SCSI bus instead of needing to power it from the BluePill’s USB connector.

See the Retro Guy’s blog for more information on how to make this modification.

<https://retroguy.blog/2020/01/14/booting-a-mac-plus-out-of-an-external-scsi2sd-card/>

STEP 6 - Solder the BluePill in place on the BlueSCSI board. Please make sure the USB port on the BluePill is positioned and oriented in the proper direction. De-soldering the BluePill is very difficult, and you will most likely ruin the BlueSCSI board doing so. If you would like the BluePill to be removeable, considering soldering sockets on the BlueSCSI Board. Additionally, you may need to carefully bend the resistor networks toward the DB-25 connector a little bit to get the BluePill to mount flush to the board. You will need to use your diagonal cutters to trim the excess from the soldered pins on the BluePill so that it will fit in the case.

See diagram below.



An optional Socket for the BluePill can be ordered from your favourite electronics store such as Mouser or Digi-Key. ***This is not included in the kit. ALSO it is important to note, that if you use the socket, the BlueSCSI DB25 will not fit in the 3D printed case provided.***



Figure 1 – OPTIONAL 20 Pin Socket 2.54mm spacing (Not included)

STEP 7 (Optional if you have a case) – Gently install the BlueSCSI in the 3D printed case. This is tricky and may require a light touch and a small flat blade screwdriver to assist. Be careful not to apply so much force that you crack the plastic.

STEP 8 - [Configure](#) it and enjoy!!! Don't forget to check out the GitHub and Discord sites for more information!

