

# McWill 2ASIC GameGear Full Mod User Guide

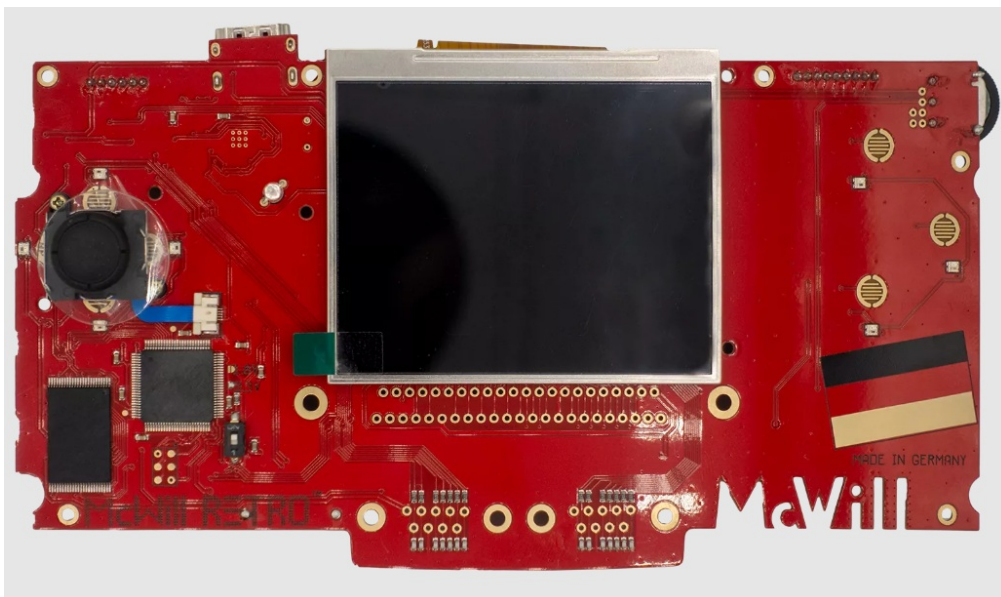
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***McWill RETRO™***

## McWill 2ASIC GameGear Full Mod User Guide



## Specifications

- Model: SEGA Game Gear McWill FULL MOD REV 2.1
- Required materials: McWill GG FULL MOD PCB with 640×480 IPS, new power board with LiPo batteries, new soundboard (optional), daughter board for 2ASIC OR 1ASIC and hot air station

**ATTENTION!** Removing and soldering the ASICs needs some solder experience and is on your own risk! Liability impossible!

### Required materials:

McGill GG FULL MOD PCB with 640×480 IPS, new power board with LiPo batteries, new sound board (optional), daughter board for 2ASIC OR 1ASIC and hot air station.

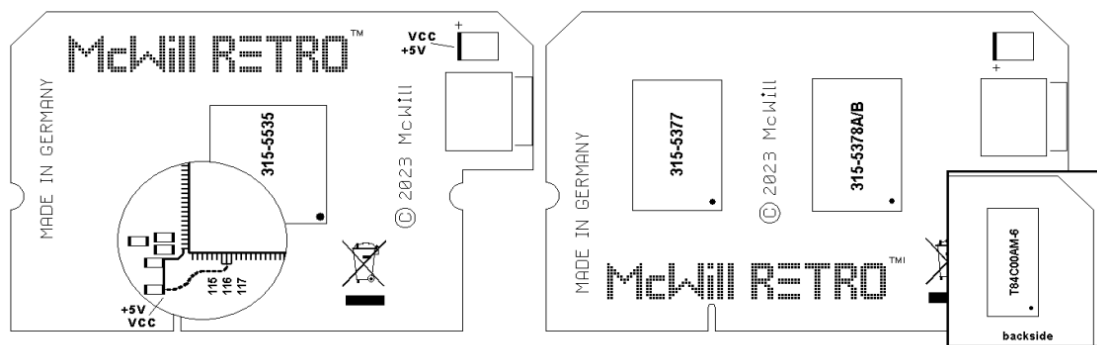
## Product Usage Instructions

### Step 1: Removing ASICs and Cartridge Port

**ATTENTION!** Make sure that all power is off. Disconnect ALL cables.

1. Make sure that all power is off and disconnect all cables.
2. Remove the 32.2159 MHz crystal and cartridge port from the original GG PCB.
3. Using a hot air station, remove 2 ASICs and the Z80 CPU (for 2ASIC PCBs) OR 1 ASIC (for 1ASIC PCBs).
4. Clean all pins of the chip/chips if necessary.

### Step 2: Soldering ASICs to Daughter Boards



Daughter board for the 1ASIC GG

Daughter board for the 2ASIC GG

Solder the ASIC to the daughter board. If you have a 2ASIC PCB you also need to solder the Z80 to the backside of the daughter board. Then insert the cartridge port. After that you can solder the 32.2159 MHz crystal to the PCB. Please check all pads again, especially VCC and GND! If there's a short circuit the ASICs and FULL MOD could be damaged!

**PATCH for 1ASIC PCBs:** PINs 115, 116 and 117 (connected together) need to be wired to +5V VCC. (+5V VCC can be found at the yellow tantalum cap at the upper right or on the left at resistor 912)

- The 7th PIN of the lower left is PIN 115, the 8th PIN is PIN 116 and the 9th PIN is PIN 117
- For 1ASIC PCBs you need to remove the 2 caps and replace resistor by 0 Ohm or bridge (see last picture).

**Note:** COPYRIGHT McWill 2023

### Daughter board for the 1ASIC GG:

1. Solder the ASIC to the daughter board.
2. If you have a 2ASIC PCB, also solder the Z80 to the backside of the daughter board.

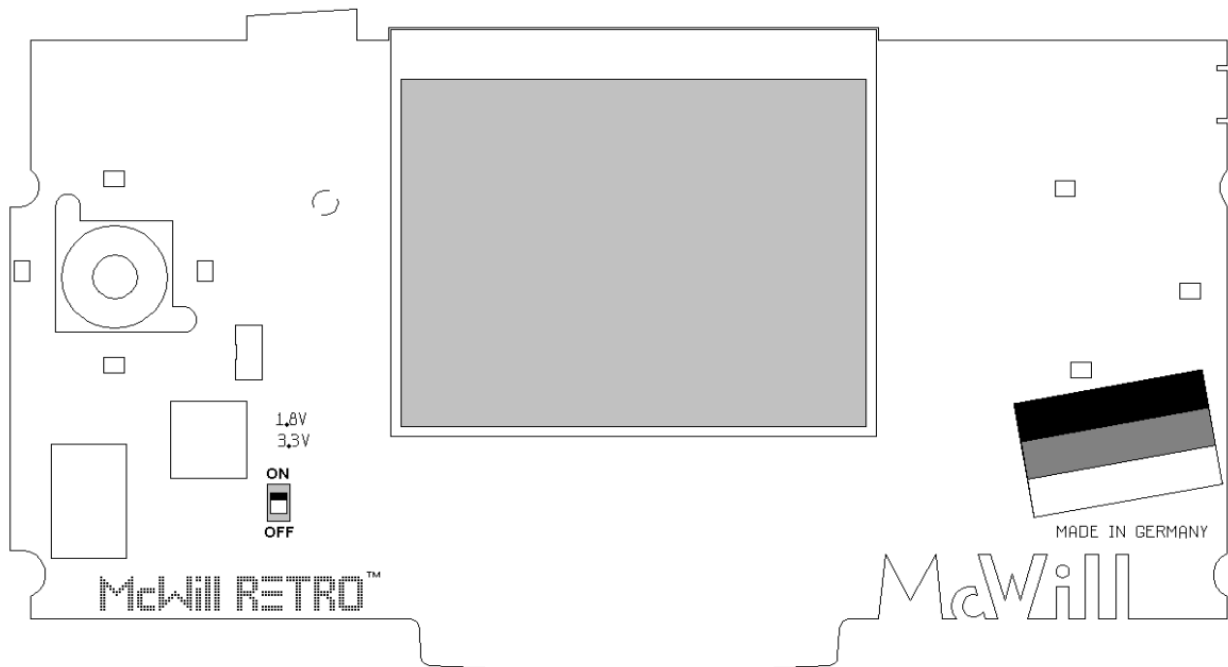
3. Insert the cartridge port.
4. Solder the 32.2159 MHz crystal to the PCB.
5. Double-check all pads, especially VCC and GND, for any short circuits that could damage the ASICs and FULL MOD.

### PATCH for 1ASIC PCBs

PINs 115, 116, and 117 (connected together) need to be wired to +5V VCC. You can find +5V VCC at the yellow tantalum cap at the upper right or on the left at resistor 912. The 7th PIN of the lower left is PIN 115, the 8th PIN is PIN 116, and the 9th PIN is PIN 117. For 1ASIC PCBs, remove the 2 caps and replace the resistor with 0 Ohm or bridge (see last picture).

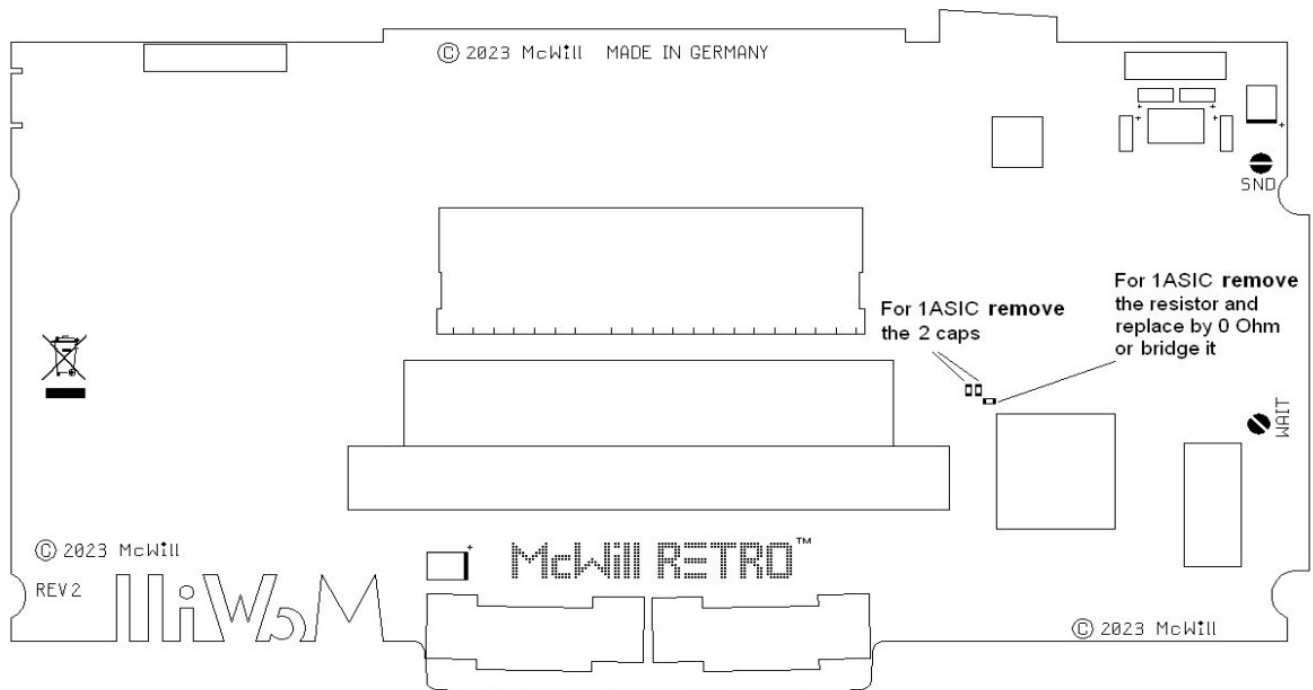
### Analog Stick / Dpad Settings

The analog stick is optional. If you want to use Dpad, remove the analog stick and set the switch to OFF. Setting ON activates the analog stick again. It is recommended to test the analog stick's behavior with different games before removing it. The analog stick is optional ! If you want to use Dpad you can remove the analog stick and the switch setting has to be OFF. Setting ON activates the analog stick again. But I recommend to test the analog sticks behaviour with different games before removing.



### Menu Options

Hold BUTTON UP and then press START to enter menu. For leaving menu press BUTTON 2 always. The 1st menu is for switching from 3.5" display to DIGITAL VIDEO OUT by pressing BUTTON 1. Press the RIGHT BUTTON once for next menu for switching to scanlines by pressing BUTTON 1. By pressing the LEFT BUTTON you will enter the RGB LED menu. Pressing BUTTON UP or BUTTON DOWN changes the color of selected LED. Confirming the LED color by pressing BUTTON 1. BUTTON 2 turns off selected LED. Once the menu is enabled the sound is still ON and the cpu is still working. To disable the sound and / or the cpu you need to put a solder blob onto the SND jumper and / or the WAIT jumper at the right.



### **Consolized GAME GEAR:**

If you want to use gamepads, joysticks, or the GG link cable, you need to add 1 or 2 DSUB 9pin female connectors. Trimming of the upper and lower case is required. If you also want to use gamepads, joysticks or the GG link cable you need to add 1 or 2 DSUB 9pin female connectors. Of course you have to trim the upper and lower case then.

### **Trimming the Window of the Upper Case**

To have full size picture you need to trim the window at the left and right for the 640×480 IPS a littler bit. If you're also using the analog stick you need to trim a small part inside the upper case in the Dpad area. This mod kit has only integer scaling and scaling modes make no sence! Otherwise you can use a standard McWill GG mod kit with 320×240 LCD and scaling modes.

### **WARNING!**

This product is a high-quality and double-checked item. Only use original McWill power boards and sound boards with the McWill GG FULL MOD. Also, only use high-quality LiPo batteries with a protection circuit. Otherwise, the McWill GG FULL MOD could be damaged.

### **News and Updates**

Please visit my website for new hardware and information: [www.mcwill-retro.com](http://www.mcwill-retro.com)



### **FAQ**

#### **Q: Can I use other power boards and sound boards with the McWill GG FULL MOD?**

A: It is recommended to use only original McWill power boards and sound boards to ensure compatibility and avoid potential damage to the McWill GG FULL MOD.


#### **Q: What type of batteries should I use with the McWill GG FULL MOD?**

A: High-quality LiPo batteries with a protection circuit should be used to prevent damage to the McWill GG FULL MOD.

**Q: Is soldering experience required for removing and soldering ASICs?**

**A:** Yes, removing and soldering ASICs requires some soldering experience. It is important to proceed with caution and at your own risk.

**Documents / Resources**

	<p><a href="#">McWill 2ASIC GameGear Full Mod</a> [pdf] User Guide 2ASIC GameGear Full Mod, 2ASIC, GameGear Full Mod, Full Mod</p>
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**References**

- [User Manual](#)