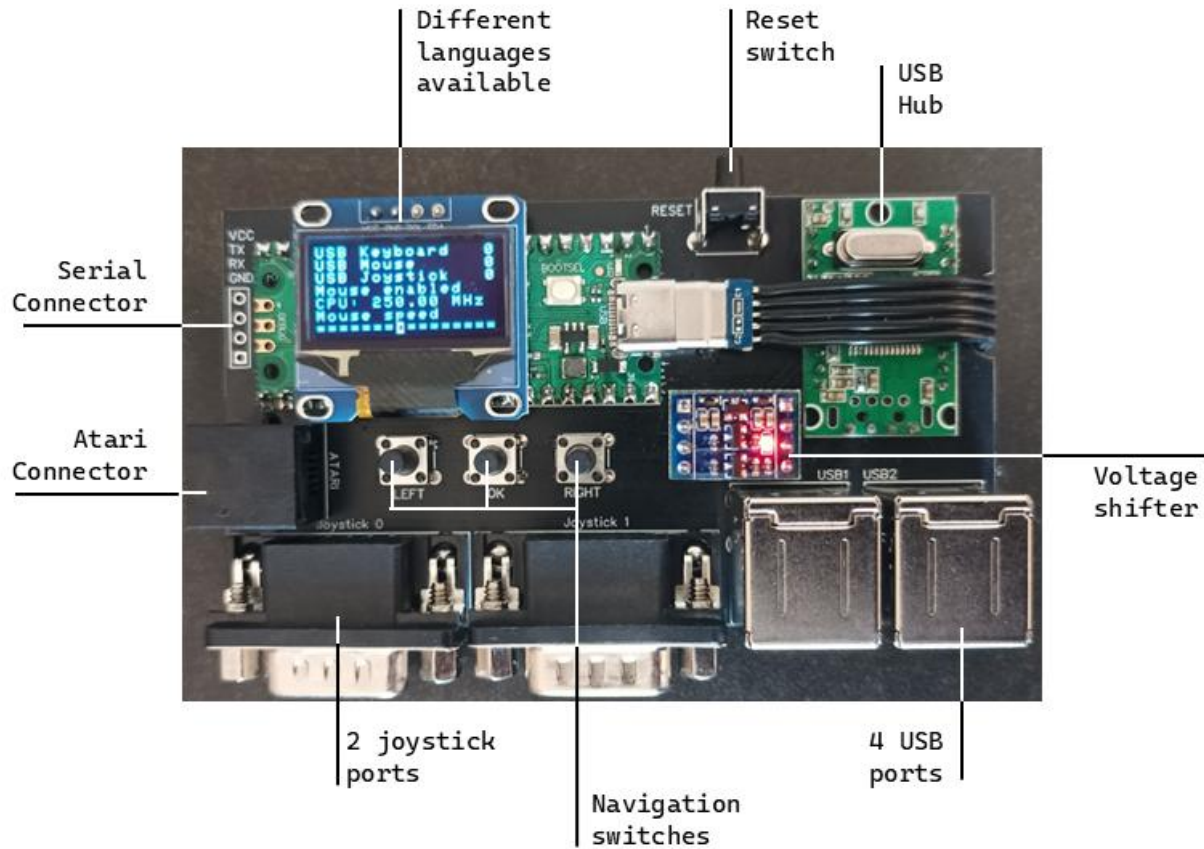


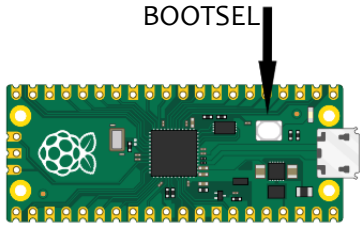
# Atari Eiffel Pico USB – by Klyde's Korner



**WARNING:** I cannot be held responsible for the partial or complete destruction of your Atari computer, keyboard, mouse, joystick or any other device with which you use this assembly. You use it at your own risk. Be aware that mounted correctly, this adapter works and is used by dozens of people around the world without problems.



## Update the RP2040 firmware



If you have ordered an assembled Eiffel, it is already programmed with the latest firmware, and ready to use.

To update the firmware, go to <https://github.com/klyde2278/atari-st-rpikb/releases> and download the latest **UF2 file**.

Press and hold the **BOOTSEL** button and connect the RP2040 card using a USB-C cable to your computer. The RP2040 should be detected as a USB flash drive. Release the BOOTSEL button.

Drag the UF2 file to the RP2040 drive, it will update and restart automatically.

## Stay up to date with the latest firmware

Sign up to receive firmware update notifications by email here: <https://klydes-korner.site/en/my-account/>

## Compatible USB keyboards, mice, and joysticks

You can check a list of USB devices that work or not with the Atari Eiffel here:

<https://docs.google.com/spreadsheets/d/1858Q4cQ6H1mEdqZV397CxDSGUKhAxyxBQKMLu1UkSNU/edit?usp=sharing>

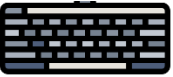

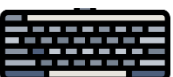


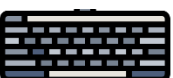



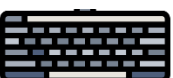


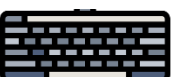


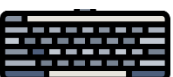


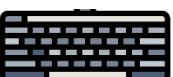


If you want to mention the devices you use, and the ones that don't, send me an email with the make and model to [klyde@klydes-korner.site](mailto:klyde@klydes-korner.site).

## A bug? A suggestion?

Contact me at: [klyde@klydes-korner.site](mailto:klyde@klydes-korner.site) or at <https://klydes-korner.site/en/me-contacter/>

## Use Cases

**Note:** The USB mouse is emulated through the **Joyo** port and monopolizes it.

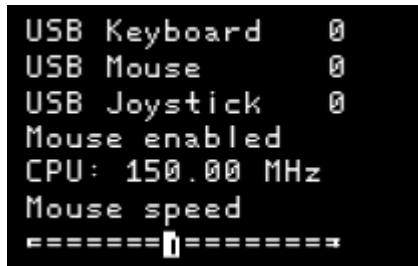
Peripherals used	USB mouse /Joyo enabled	Set Joyo to...	Set Joy1 to...
  <p>A USB keyboard and a USB mouse</p>	USB Mouse enabled	USB or D-Sub no matter	USB or D-Sub no matter
   <p>A USB keyboard, a USB mouse, a USB joystick</p>	USB Mouse enabled	USB or D-Sub no matter	USB
    <p>A USB keyboard, a USB mouse, two USB joysticks</p>	USB Mouse enabled	USB	USB
   <p>A USB keyboard, a USB mouse, an Atari joystick on Joy1</p>	USB Mouse enabled	USB or D-Sub no matter	D-Sub
   <p>A USB keyboard, an Atari mouse on Joyo, a USB joystick</p>	Joyo enabled	D-Sub	USB
   <p>A USB keyboard, an Atari mouse on Joyo, an Atari joystick on joy1</p>	Joyo enabled	D-Sub	D-Sub
   <p>A USB keyboard, two Atari joysticks on Joyo and Joy1</p>	Joyo enabled	D-Sub	D-Sub

## Interface Screens – From firmware V9.1.0



**Home screen.** Displays the firmware number. Remains 3 seconds max (except in case of inactivity) and is only displayed once until the next boot.

Press the **Ok** button to move to the next screen.



**Status screen.** Shows the number of keyboards, mice, and joysticks detected, whether the USB mouse is enabled or the joy 0 port is enabled, the CPU speed, and the mouse speed.



to disable the **USB mouse** and enable the **Joy 0 port**.



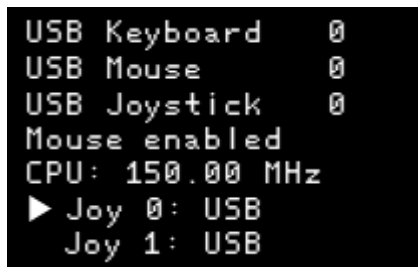
(numeric keypad) to increase the **CPU speed** to 270MHz (better mouse and joystick response).



(numeric keypad) to decrease the **CPU speed** to 150 MHz (by default, better system stability).

Use the **Left** and **Right** buttons to adjust the speed of the USB mouse.

Press the **Ok** button to move to the next screen.



**Joystick ports screen.** Shows the number of keyboards, mice and joysticks detected, whether the USB mouse is enabled or the joy 0 port is enabled, the CPU speed, and allows the joystick ports to be switched to USB mode and D-Sub mode.

If you want to use a **USB joystick**:

1. Plug it into one of the **USB** ports, check that it is detected,
2. With the **Ok** button, choose the **Joy 0** or **Joy 1 port** on which the joystick will be emulated,
3. With the **Left** and **Right** buttons, set the port to "**USB**".

You can also use  to switch **Joy 0** to "**USB**" or "**D-Sub**".

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If you want to use a **DB-9** (D-Sub 9) **Atari** joystick:

1. Plug it into the **Joystick 0** or **Joystick 1** port (on an Atari ST, in general, the joystick is plugged into the **Joystick 1** port),
2. With the **Ok** button, choose the **Joy 0** or **Joy 1** port to which the joystick is plugged,
3. With the **Left** and **Right** buttons, set the port to "**D-Sub**".

You can also use  +  to switch **Joy 1** to "**USB**" or "**D-Sub**".

Press the **Ok** button when you are on **Joy 1** to move to the next screen.

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▶ Back  
Settings  
Help  
Debug

**Main menu.** Navigate with the **left** and **right** buttons, confirm with the **Ok button**.

**Return:** Returns to the status screen.

**Settings:** Takes you to the settings menu.

**Help:** Displays Help screens.

**Debug:** Displays debug screens

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▶ Back  
Language  
USB Keyboard  
Joystick Deadzone

**Settings menu.** Navigate with the **left** and **right** buttons, confirm with the **Ok button**.

**Return:** Returns to the main menu.

**Language:** Displays the screen of the interface language choice.

**USB Keyboard:** Displays the screen of the USB keyboard selection.

**Joy. Dead Zone:** Displays the joystick dead zone adjustment screen.

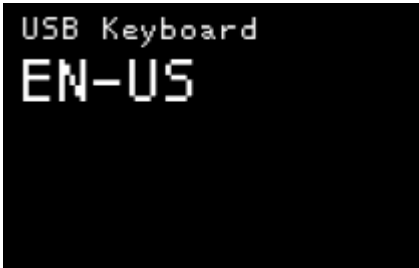
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Language  
EN

**Interface language screen.** Choose with the **left** and **right buttons**.

Press the **Ok** button to validate and to return to the settings menu.

---



**Keyboard layout screen.** Allows you to indicate the USB keyboard layout you use.

The choice of USB keyboard type allows the key layout of the USB keyboard to match those of the Atari ST keyboard.

The USB Keyboard -> Atari Keyboard Emulated -> TOS Language Set must be consistent: If you are using a USB en-UK (English-UK) keyboard, the Atari keyboard will be emulated as an English (UK) keyboard, and the TOS used must be an English (UK) version.

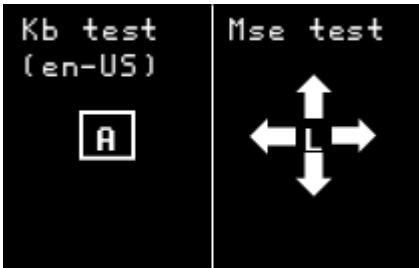
Press the **Ok** button to validate and to return to the settings menu.



**USB joystick dead zone adjustment screen.** Adjust with the **left** and **right** buttons.

The sensitivity setting is common to all USB joysticks.

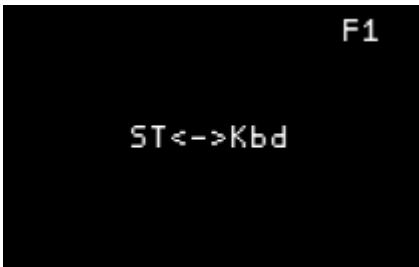
Press the **Ok** button to validate and return to the settings menu.



**USB keyboard and mouse test screen.** For debugging only.

Press a key on the USB keyboard, the key should appear on the left half (US keyboard layout only).  
Move and press the left and right buttons on the USB mouse.

Press the **Ok** button to move to the next screen.



**HD6301 dialog screen.** Shows the exchanges between the Atari and the USB keyboard. For debugging purposes only.  
Do not stay on this screen in normal operation to not slow down the emulation.

Press the **Ok** button to move to the next screen.

```
Keyb:0 Mouse:0 Joy
Mounts:0 Active:0
Last: Ad:0 inst:0
Reports Rx:0
Reports Copy:0
Layout: EN-US (1)
```

**USB debugging screen.** Shows information about connected USB keyboards joysticks and mice. For debugging only. Do not stay on this screen in normal operation to not slow down the emulation.

Press the **Ok** button to return to the settings menu.

```
Ctrl + F12:
USB<->Joy 0
Ctrl + F11:
Reset
Ctrl + F10:
Joy0 D-Sub<->USB
```

**Help screen 1.** Displays the first page of keyboard shortcuts that are useful for this firmware version (see also next page).

Press the **Ok** button to move to the next screen.

```
Ctrl + F9:
Joy1 D-Sub<->USB
Alt + NumPad '+' :
Set CPU 270 Mhz
Alt + NumPAD '-' :
Set CPU 150 Mhz
```

**Help screen 2.** Displays the second page of keyboard shortcuts that are useful for this firmware version (see also next page).

Press the **Ok** button to return to the main menu.

## Keyboard shortcuts

These keyboard shortcuts can be used on any page.

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Disables the **USB mouse** and enables the **Joy 0 port**.

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**Resets** the HD6301 emulator (Soft Reset). The Reset button on the PCB resets the entire Pico (Hard Reset).

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Toggle **Joy 0** to "**USB**" or "**D-Sub**".

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Toggle **Joy 1** to "**USB**" or "**D-Sub**".

---



Increases **CPU speed** to 270MHz (better mouse and joystick response).

Numeric keypad

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Decreases **CPU speed** to 150 MHz (by default, better system stability).

Numeric keypad

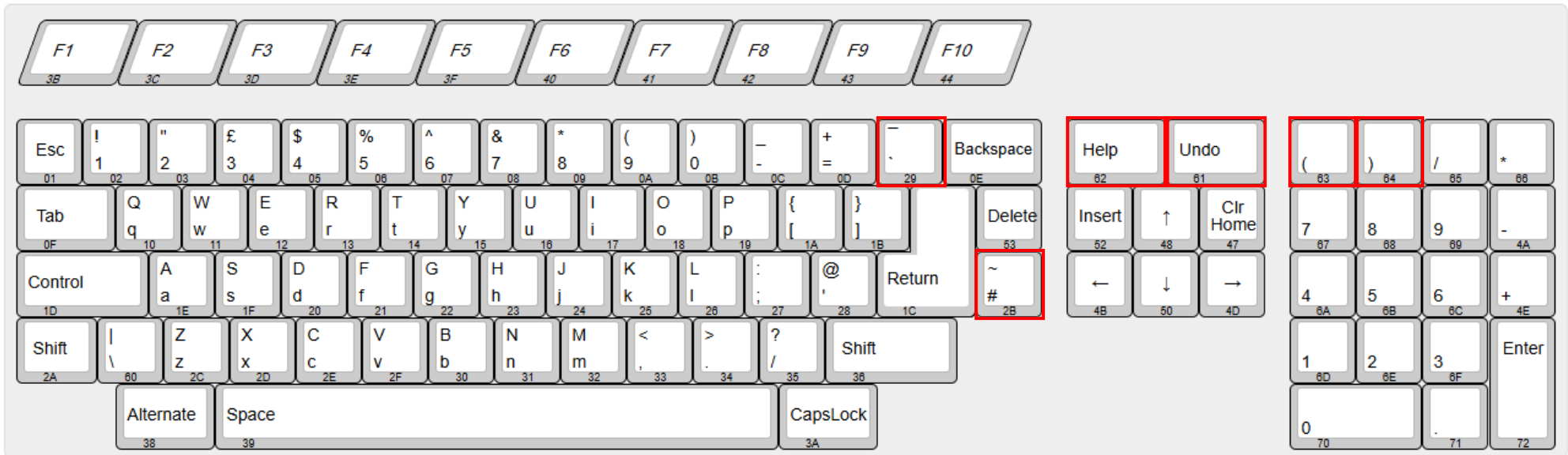
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## Atari ST – Keyboard layout



The Eiffel adapter uses **the position of the keys** on the keyboard, but **not necessarily what is indicated** on the key.





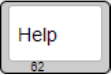

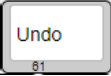





### Atari ST English (UK) Keyboard



For more Keyboard layouts, see: <https://tho-otto.de/keyboards/>

## Keyboard keys reassignment

The red-outlined keys on the Atari ST keyboard have been remapped on the USB keyboard as follows:

Atari ST English (UK)	USB Keyboard English (UK)
	
	
	
	
 Numeric keypad	
 Numeric keypad	

# PCB patches

PCB Version	Issues and symptoms	Fix
<b>Prior to version 1.4.0</b>	<p><b>Issue:</b> The Joyo and Joy1 joystick jacks are not receiving power.</p> <p><b>Symptom:</b> You cannot use an Atari mouse or other device that requires power from the joystick sockets.</p>	<p>Connect Joyo pin 7 to the RJ12 jack's 5V power supply.</p> <p>Connect the Joy1 pin 7 to the Pi Pico's 5V power supply.</p>
<b>Prior to version 1.4.2</b>	<p><b>Issue:</b> The right button on the Joyo socket is not connected to the joystick fire on the Joy1 socket.</p> <p><b>Symptom:</b> The right button of the Atari mouse plugged into Joyo does not work.</p>	<p>Connect Joyo Pin 9 to Joy1 Pin 6.</p>

