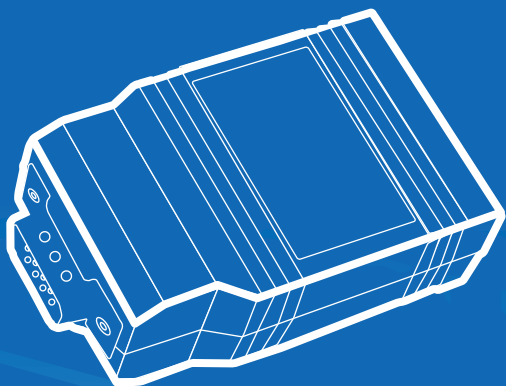


AtariAge & pixels past

Stelladaptor



2600 TO USB INTERFACE USER'S GUIDE

Use original Atari 2600 controllers with your PC or Mac!

Supports Atari 2600 and compatible joysticks,
paddles, and driving controllers.

USB interface works with most major computers and
operating systems

Easy-to-use: Simply plug-and-play!

INTRODUCTION

Congratulations on your purchase of a Stelladaptor 2600 Controller-to-USB Interface!

The Stelladaptor 2600 Controller-to-USB Interface was created to allow the use of standard Atari 2600-compatible controllers, including joysticks, paddles, and driving controllers, with modern computers running Windows, Macintosh, or Linux operating systems.

Any Atari 2600-compatible joystick, when plugged into your computer through the Stelladaptor, will behave as a normal joystick. This allows the use of classic Atari controllers with any software that will work with an 8-direction digital joystick controller (left, right, up, down, and diagonals).

In addition to joystick controllers, the Stelladaptor also automatically recognizes the Atari 2600 paddle and driving controllers. To take advantage of these controllers, software running on the host computer (such as emulators or games) must be updated to accurately handle the data being sent by the Stelladaptor. Windows users can download the latest version of the excellent, freely available Atari 2600 emulator "z26", which natively supports the Stelladaptor. We encourage other authors to update their emulators to support the full functionality of the Stelladaptor -- see the Technical Notes section of the manual for more information.

z26 for Windows can be downloaded from: <http://www.whimsey.com/z26/z26.html>

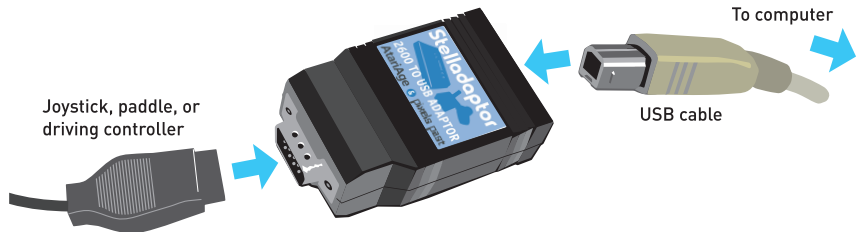
The latest information about Stelladaptor, including a list of emulators that have been updated to support it natively, can be found at: <http://www.atariage.com/2600/stelladaptor>

GETTING STARTED

To use the Stelladaptor, you need a Windows or Macintosh computer with a USB port, one or more Atari 2600-compatible controllers, and a standard Type A-to-Type B USB cable.

With your computer powered on:

- 1 Plug the Atari 2600 controller into the Stelladaptor.
- 2 Plug a USB cable into the Type B USB connector on the Stelladaptor.
- 3 Plug the opposite end of the USB cable into an available USB port on your computer.



The computer should recognize the Stelladaptor automatically. In Windows, you may see a dialog box briefly appear, identifying the device as a "Stelladaptor Atari 2600-to-USB Interface" followed by the detection of a "Human Interface Device (HID)". You can verify that the Stelladaptor is recognized by double-clicking on the "Gaming Options" icon within Control Panel. On a Macintosh OS X system, you can verify that the Stelladaptor is recognized by running the System Profiler and then looking at all connected USB devices.

With the Stelladaptor connected, you can now fire up your favorite emulator and enjoy classic games with the proper controllers! No more using the inferior keyboard and mouse to play 2600 games that were meant to be played with real controllers!

NOTES

- 👉 If you wish to swap controllers (such as switching from a joystick controller to a paddle controller), you can do so at any time. Stelladaptor will automatically detect the change. However, you may need to restart your emulator before it can properly handle the new controller.
- 👉 Multiple Stelladaptors can be connected to your computer. This is ideal for two- or four-player games so each player can use a real controller.
- 👉 Why "Stelladaptor"? "Stella" was the codename for the Atari 2600 while it was in development. The name actually comes from a bicycle owned by Joe Decuir, one of Atari's hardware engineers responsible for designing the 2600. Since our device is an adapter for Atari 2600 controllers to work with modern systems, the Stelladaptor name was born!

TECHNICAL NOTES

The Stelladaptor 2600 controller-to-USB interface is configured as a generic Human Interface Device (HID) class. Generic HID devices, such as game controllers, keyboards, and mice, are supported in major operating systems without the need of additional drivers.

The auto-detection routines in the firmware of Stelladaptor will automatically configure the USB packet to contain the relevant information based on if the attached controller is a joystick, paddle, or driving controller. The USB packet is a 4-byte structure.

| BYTE | FUNCTION |
|------|--|
| 0 | Reserved |
| 1 | X-axis data: Joystick left/right or Paddle A |
| 2 | Y-axis data: Joystick up/down or Paddle B |
| 3 | Buttons (bitwise flags): Padding[6]: Fire B: Fire/Fire A |

When a 2600 joystick is connected, data is configured with the following table. The fire button is denoted by the least-significant bit of byte 3 (logic high corresponding to the fire button being pressed):

| JOYSTICK DIRECTION | BYTE 1 (X) | BYTE 2 (Y) |
|--------------------|------------|------------|
| Left | 0x00 | 0x7F |
| Right | 0xFF | 0x7F |
| Up | 0x7F | 0x00 |
| Down | 0x7F | 0xFF |
| Up-Left | 0x00 | 0x00 |
| Up-Right | 0xFF | 0x00 |
| Down-Left | 0xFF | 0xFF |
| Down-Right | 0x00 | 0xFF |
| Centered | 0x7F | 0x7F |

When a 2600 driving controller is connected, there are four possible positions of the controller (represented in the form of a 2-bit Grey code). The direction that the wheel is spinning is handled by the emulator or other software running on the host computer:

| POSITION | BYTE 1 (X) | BYTE 2 (Y) |
|----------|------------|------------|
| 1 | 0x7F | 0x00 |
| 2 | 0x7F | 0x7F |
| 3 | 0x7F | 0xFF |
| 4 | 0x7F | 0xC0 |

When a 2600 paddle is connected, the analog values of the paddles are sent as byte representations through byte 1 (X-axis) for paddle A and byte 2 (Y-axis) for paddle B. A full rotation of the paddle results in 128 possible values, which are normalized (doubled) to fill a single byte. The value of the byte ranges from 0x00 to 0xFE with 0x7E as the center. Paddle A's fire button is denoted by the least-significant bit of byte 3 and paddle B's fire button is denoted by the adjacent bit. A logic high corresponds to the fire button being pressed.

Stelladaptor will send a USB packet to the host computer every 10ms if a change from the previous controller state is detected. If the controller is not moved, no packet will be sent to the host. This reduces the amount of data sent over the USB interface.

Visit the following sites for more information on the USB specification (www.usb.org) and the HID class (www.lvr.com/hidpage.htm).

ACKNOWLEDGEMENTS

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Label and Manual design by Matthew Bowman.

RETURN POLICY AND WARRANTY

AtariAge is the exclusive distributor of Pixels Past products. Please contact AtariAge support (support@atariage.com) for technical assistance and customer service issues.

Unless otherwise specified, AtariAge warrants all products against defects in materials and workmanship for a period of 90 days. If you discover a defect, we will, at our option, repair or replace your product or refund your purchase price.

This return policy and warranty do not apply if the product has been altered, modified, or damaged by accident, abuse, or misuse.