Tucson Logic, LLC
JVS-Bridge Instruction Sheet r2020.10.12
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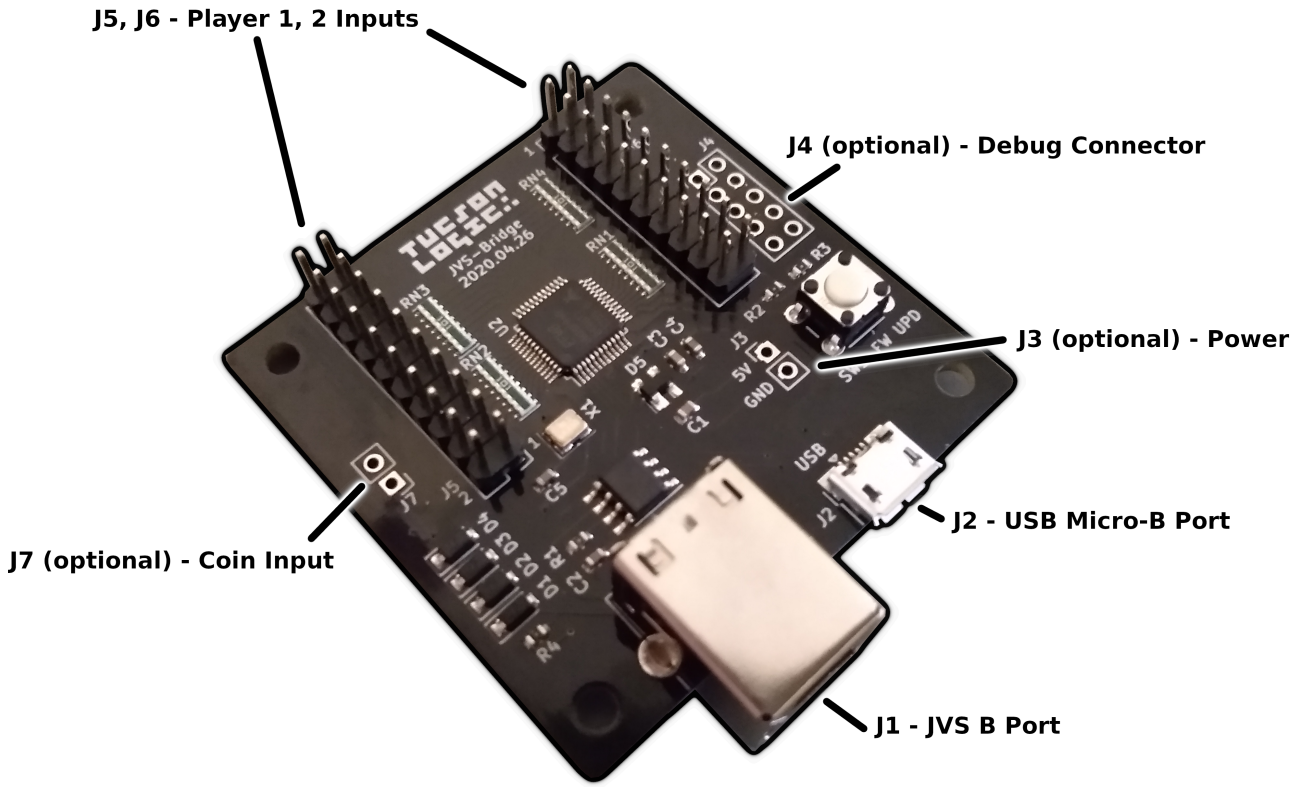
Note: This product is neither endorsed by, nor affiliated with, the Japan Amusement Machine and Marketing Association (JAMMA). Tucson Logic offers no guarantee of compliance with the official JVS specifications or compatibility with any other hardware. This product is intended for hobbyists.

Introduction

The JVS-Bridge is a miniature JVS I/O Board with USB features.

It can be used as a standalone I/O Board to read a set of switches and send this data to a JVS game. In this mode, up to 2 players are supported, each having one eight-way joystick and 8 action buttons. It can also be used as a USB device, to accept data from a USB host, and pass it along to a JVS game. In this mode, up to 4 such players and 4 analog axes are supported.



In the default firmware, the J5 and J6 input pins correspond with JVS switch data as follows:

Pin 1	Pin 3	Pin 5	Pin 7	Pin 9	Pin 11	Pin 13	Pin 15	Pin 17	Pin 19
Up	Right	Service	Start	Button 2	Button 7	Button 4	Button 6	(Ground)	(5V)
Pin 2	Pin 4	Pin 6	Pin 8	Pin 10	Pin 12	Pin 14	Pin 16	Pin 18	Pin 20
Down	Left	Test	Button 1	Button 3	(Ground)	Button 5	Button 8	(Ground)	(5V)

Connectors

The JVS-Bridge has the following connectors:

J1 – JVS B Port, for connection to a JVS Game Board
J2 – USB Micro-B Port, for connection to a USB Host
J3 – 2 pins, optional power input, for 5V power
J4 – 10 pins, optional debugging connector, for firmware development
J5 – 20 pins, Header for Player 1 switch inputs
J6 – 20 pins, Header for Player 2 switch inputs
J7 – 2 pins, optional coin-slot input

WARNING: NEVER CONNECT A JVS DEVICE TO A USB HOST.
The JVS B Port (J1) should never be connected to a USB host. Similarly, the USB Micro-B Port (J2) should never be connected to a JVS host. JVS and USB unfortunately use the same shape of plugs, but they are not compatible. Immediate damage to the power supply, JVS-Bridge, or other devices may result if the JVS and USB ports are misused.

Power

The JVS-Bridge requires a 5V power supply. The JVS-Bridge draws under 50mA.

The JVS-Bridge can accept power from the USB Micro-B Port (J2), from the optional power input (J3), or from the Player 1 or Player 2 headers (J5, J6). The USB Micro-B Port (J2) can be used to power the board, from either a USB Host or a suitable USB Power Supply.

WARNING: USE ONLY ONE POWER SUPPLY.
There are 5V pins on the USB Micro-B Port (J2), the optional power input (J3), and the Player 1 and Player 2 headers (J5, J6). These 5V pins are all wired directly together. If power is being supplied through the Player 1 or Player 2 header (J5, J6), or through the optional power input (J3), do not connect the JVS-Bridge to a USB Host. Similarly, if the JVS-Bridge is connected to a USB Host, do not connect a power supply to any of the other 5V pins on the board.

USB Features

The JVS-Bridge can accept data from a USB Host. Connect the JVS-Bridge to the USB Host; it will appear as a USB Serial Port. Utilities are available from Tucson Logic to send control data to the board, from a variety of other devices on the USB Host.

The JVS-Bridge firmware can be updated via USB. To update the firmware, disconnect the JVS-Bridge from any power supplies. Then, while holding the “FW UPD” button, connect the JVS-Bridge to a USB Host. The USB Host should recognize a Silicon Labs Bootloader device. Then, run the firmware update utility on the USB Host. When the firmware update is complete, the firmware update utility will exit, and the JVS-Bridge will automatically reboot into the new firmware.

Alternate firmware images are available on request from Tucson Logic. Analog controls can be supported on J6 pins 13-16 with one such firmware. Other features may be possible on request.