Step-by-Step Instructions for:

Building a JAMMA Adapter

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Required items to build your JAMMA Adapter:

- A JAMMA Fingerboard (p/n JB-1)
- An EDGE Connector and possible a specific type of Molex housing connector, depending upon which Arcade board you want to build the adapter for.
- A Polarizing KEY for the EDGE Connector. (Optional – Not Required, only recommended)
- Wire with a minimum of 20 gauge wire for your power / voltage lines.
- Soldering Iron – Any wattage is fine, which ever you are comfortable with using.
- Solder – Either 'No Clean' or 'Rosin Core' solder is recommended.
- A PINOUT diagram for the arcade board that you wish to build the adapter for.

How to obtain the JAMMA adapter items:

- JAMMA Fingerboards, Edge connectors, and polarizing keys can be purchased at http://www.jammaboards.com/ from JammaBoards.com.
- Arcade game board pinout files can be downloaded at http://www.jammaboards.com/pinouts.
- Also JammaBoards.com has a 58-piece wire set which has the proper gauge and color-coding specifically designed for use with building a JAMMA adapter.

Once you have all the required items to build your JAMMA adapter, it's time to get to work! I will not get into any specifics on how to solder or tips in this article, as there are many articles and tip pages already written about the basics of soldering. Of course I recommend you read into them if you are inexperienced with soldering and proper soldering techniques.

For an example, we will show you how to create an adapter for the arcade game board Shinobi. Shinobi was chosen just to simply be shown as a generic reference but the concept is the same and can be applied to virtually any arcade game board. Once the JAMMA adapter has been completed, you will now be able to simply plug in Sega System16 Shinobi game board into your JAMMA arcade cabinet. The Sega System16 Shinobi game board will require a 56-pin edge connector. Here is the pinout for the Shinobi board:

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SEGA Shinobi (System16 PCB)			
Component Side	Pin #		Solder Side
Ground	1	A	Ground
Ground	2	B	Ground
+5 Volts DC	3	C	+5 Volts DC
+5 Volts DC	4	D	+5 Volts DC
+12 Volts DC	5	E	+12 Volts DC
Coin Meter 1 Switch	6	F	Coin Meter 2 Switch
Key Slot	7	H	Key Slot
Player 1 - Button 1 SW	8	J	Player 2 - Button 1 SW
Player 1 - Button 2 SW	9	K	Player 2 - Button 2 SW
Player 1 - Button 3 SW	10	L	Player 2 - Button 3 SW
- No Connection -	11	M	- No Connection -
Player 1 – Joystick Down	12	N	Player 2 – Joystick Down
Player 1 – Joystick Up	13	P	Player 2 – Joystick Up
Player 1 – Joystick Right	14	R	Player 2 – Joystick Right
Player 1 – Joystick Left	15	S	Player 2 – Joystick Left
- No Connection -	16	T	- No Connection -
- No Connection -	17	U	- No Connection -
- No Connection -	18	V	- No Connection -
- No Connection -	19	W	- No Connection -
Coin Switch 1	20	X	Player 1 – Start Button SW
Coin Switch 2	21	Y	Player 2 – Start Button SW
Test Switch	22	Z	- No Connection -
Service Switch	23	a	- No Connection -
Speaker (+)	24	b	Speaker (-)
Video Red	25	c	Video Green
Video Blue	26	d	Video Composite Sync
Ground	27	e	Ground
Ground	28	f	Ground

The main objective in building a JAMMA adapter is to create a low-cost bridge that will allow you to play your non-JAMMA arcade game boards inside a JAMMA standard cabinet. One of the best benefits of building a JAMMA adapter yourself you will save yourself a lot of $$, especially if you have many different non-JAMMA arcade game boards. Buying pre-constructed JAMMA adapters at $50, $60, or even $70+ for each adapter, so if you have 5 different boards you wish to make compatible with your JAMMA arcade cabinet then building your own adapters is definitely the way to go!

I will normally start with soldering the +5Volt DC wiring between the Edge Connector and JAMMA Fingerboard. Also it is a very good practice to use the same code coding wires on every voltage and ground present, as well as using a minimum of 20-gauge wire when connecting to the board voltages and ground.

NOTE: It is very important that when wiring up the voltage and ground pins that you use every available voltage and ground pin. Example as shown on the Shinobi pinout, there are a total of 8 ground pins, 4 +5Vdc pins, and 2 +12Vdc pins...Every one of these pins should be used to prevent any voltage/over current failures.

All the wires you will be using should be properly stripped back showing no more than 5mm of braided wire. This exposed end wires should be 'tinned' prior to soldering to the edge connector or fingerboard. If you are 'crimping' these wires to terminal pins for a Molex connection, then the wire should only be stripped and not tinned.

We will start by connecting all the voltages and ground between the 56-pin edge connector and JAMMA Fingerboard.

- ❑ First, using the BLACK wire (Black wire is commonly used for GROUND applications), solder the wire to **pins 1, 2, 27, 28, A, B, e, & f (GROUND)** on the back of the edge connector.
- ❑ Once soldered, attach the other end of the black wires to the through-holes labeled **GROUND** on the JAMMA Fingerboard.

- ❑ Next, with the RED wire (Commonly used to represent +5VDC applications), solder the stripped back wire to **pins 3, 4, C, & D (+5VDC)** on the back of the edge connector.
- ❑ Once soldered, attach the other end of the red wires to the through-holes labeled **+5VDC** on the JAMMA Fingerboard.

- ❑ Using the YELLOW wires (Commonly used to represent +12VDC applications), solder the stripped back wire to **pins 5 & E (+12VDC)** on the back of the Edge Connector.
- ❑ Once soldered, attach the other end of the YELLOW wires to the through-holes labeled **+12VDC** on the JAMMA Fingerboard.

NOTE: Now that all the voltages and grounds are wired, we can finish the remaining wiring by using 22-gauge wire.

➢ *The Coin Meter Switches are used to 'Count' the number of times a quarter has been dropped through the coin slot.*

- ❑ Using a white wire, solder to **pin 6 (Coin Meter Switch 1)** on the back of the edge connector. Solder the other end of the white wire to **pin 8 (COUNTER 1)** on the JAMMA Fingerboard.

- ❑ Again using another white wire, solder to **pin F (Coin Meter Switch 2)** on the back of the edge connector. Solder the other end of the white wire to **pin J (COUNTER 2)** on the JAMMA Fingerboard.

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➢ *The Key Slot position is a polarizing guide to ensure that the edge connector does not be installed backwards when connecting to the arcade board.*

❑ The edge connector should have a polarizing key installed between **pins 7 & H**. This is optional and not required for the board to operate properly but it's highly recommended to be installed. As stated before it will prevent the edge connector from being installed backwards. If the edge connector is ever installed in the 'reversed' direction, prepare yourself for a lot of smoke to appear…the board will be considered 'fried'…and it probably will not be a simple task to repair.

➢ The Buttons (Uses PURPLE wires)

❑ Using the purple wire, solder to **pin 8 (Player 1 – Button 1 Switch)** on the back of the edge connector. Solder the other end of the purple wire to (P1 – B1) position on the JAMMA Fingerboard.

❑ With another purple wire, solder to **pin J (Player 2 – Button 1 Switch)** on the back of the edge connector. Solder the other end of the purple wire to (P2 – B1) position on the JAMMA Fingerboard.

❑ With another purple wire, solder to **pin 9 (Player 1 – Button 2 Switch)** on the back of the edge connector. Solder the other end of the purple wire to (P1 – B2) position on the JAMMA Fingerboard.

❑ With another purple wire, solder to **pin K (Player 2 – Button 2 Switch)** on the back of the edge connector. Solder the other end of the purple wire to (P2 – B2) position on the JAMMA Fingerboard.

❑ With another purple wire, solder to **pin 10 (Player 1 – Button 3 Switch)** on the back of the edge connector. Solder the other end of the purple wire to (P1 – B3) position on the JAMMA Fingerboard.

❑ With another purple wire, solder to **pin L (Player 2 – Button 3 Switch)** on the back of the edge connector. Solder the other end of the purple wire to (P2 – B3) position on the JAMMA Fingerboard.

➢ The Joystick Controllers (Uses BLUE wires)

❑ Using a BLUE wire, solder to **pin 12 (Player 1 – Joystick DOWN)** on the back of the edge connector. Solder the other end of the blue wire to **pin 19 (P1 – D)** on the JAMMA Fingerboard.

❑ Using a BLUE wire, solder to **pin N (Player 2 – Joystick DOWN)** on the back of the edge connector. Solder the other end of the blue wire to **pin W (P2 – D)** on the JAMMA Fingerboard.

❑ Using a BLUE wire, solder to **pin 13 (Player 1 – Joystick UP)** on the back of the edge connector. Solder the other end of the blue wire to **pin 18 (P1-U)** on the JAMMA Fingerboard.

❑ Using a BLUE wire, solder to **pin P (Player 2 – Joystick UP)** on the back of the edge connector. Solder the other end of the blue wire to **pin V (P2-U)** on the JAMMA Fingerboard.

❑ Using a BLUE wire, solder to **pin 14 (Player 1 – Joystick RIGHT)** on the back of the edge connector. Solder the other end of the blue wire to **pin 21 (P1-R)** on the JAMMA Fingerboard.

❑ Using a BLUE wire, solder to **pin R (Player 2 – Joystick RIGHT)** on the back of the edge connector. Solder the other end of the blue wire to **pin Y (P2-R)** on the JAMMA Fingerboard.

❑ Using a BLUE wire, solder to **pin 15 (Player 1 – Joystick LEFT)** on the back of the edge connector. Solder the other end of the blue wire to **pin 20 (P1-L)** on the JAMMA Fingerboard.

❑ Using a BLUE wire, solder to **pin S (Player 2 – Joystick LEFT)** on the back of the edge connector. Solder the other end of the blue wire to **pin X (P2-L)** on the JAMMA Fingerboard.

➢ *More Switches (Uses WHITE wires)*

❑ Using a WHITE wire, solder to **pin 20 (Coin Switch 1)** on the back of the edge connector. Solder the other end of the white wire to **pin 16 (COIN 1)** on the JAMMA Fingerboard.

❑ Using a WHITE wire, solder to **pin X (Player 1 – Start Button SW)** on the back of the edge connector. Solder the other end of the white wire to **pin 17 (START 1)** on the JAMMA Fingerboard.

❑ Using a WHITE wire, solder to **pin 21 (Coin Switch 2)** on the back of the edge connector. Solder the other end of the white wire to **pin T (COIN 2)** on the JAMMA Fingerboard.

❑ Using a WHITE wire, solder to **pin Y (Player 2 – Start Button SW)** on the back of the edge connector. Solder the other end of the white wire to **pin U (START 2)** on the JAMMA Fingerboard.

❑ Using a WHITE wire, solder to **pin 22 (Test Switch)** on the back of the edge connector. Solder the other end of the white wire to **pin 15 (TEST)** on the JAMMA Fingerboard.

❑ Using a WHITE wire, solder to **pin 23 (Service Switch)** on the back of the edge connector. Solder the other end of the white wire to **pin R (SERVICE)** on the JAMMA Fingerboard.

➢ *Speakers (Uses GRAY wires)*
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❑ Using a GRAY wire, solder to **pin 24 (Speaker '+')** on the back of the edge connector. Solder the other end of the gray wire to **pin 10 (SPEAKER +)** on the JAMMA Fingerboard.

❑ Using a GRAY wire, solder to **pin b (Speaker '-')** on the back of the edge connector. Solder the other end of the gray wire to **pin L (SPEAKER -)** on the JAMMA Fingerboard.

➢ *Video Sections (Use GREEN wires)*

❑ Using a GREEN wire, solder to **pin 25 (Video RED)** on the back of the edge connector. Solder the other end of the gray wire to **pin 12 (RED)** on the JAMMA Fingerboard.

❑ Using a GREEN wire, solder to **pin c (Video GREEN)** on the back of the edge connector. Solder the other end of the gray wire to **pin N (GREEN)** on the JAMMA Fingerboard.

❑ Using a GREEN wire, solder to **pin 26 (Video BLUE)** on the back of the edge connector. Solder the other end of the gray wire to **pin 13 (BLUE)** on the JAMMA Fingerboard.

❑ Using a GREEN wire, solder to **pin d (Video Composite Sync)** on the back of the edge connector. Solder the other end of the gray wire to **pin P (SYNC)** on the JAMMA Fingerboard.

*** Take notice that the Shinobi Arcade board does not have a separate VIDEO GROUND pin. What you must do is simply jumper a wire between pin 14(VIDEO GND) and any available GROUND solder through-holes on the JAMMA Fingerboard. This will provide the ground necessary to base the video signals off of.***

*** It is also a good practice to review your work! Examine your newly built JAMMA adapter, and make sure you have soldered the wires to the correct locations; also all solder points look good and provide a strong connection. It is much better to catch a mistake now then after you have installed the arcade board into your JAMMA cabinet with power applied.***

CONGRATULATIONS!
You have built yourself a low cost JAMMA adapter!
And also have survived reading this guide!