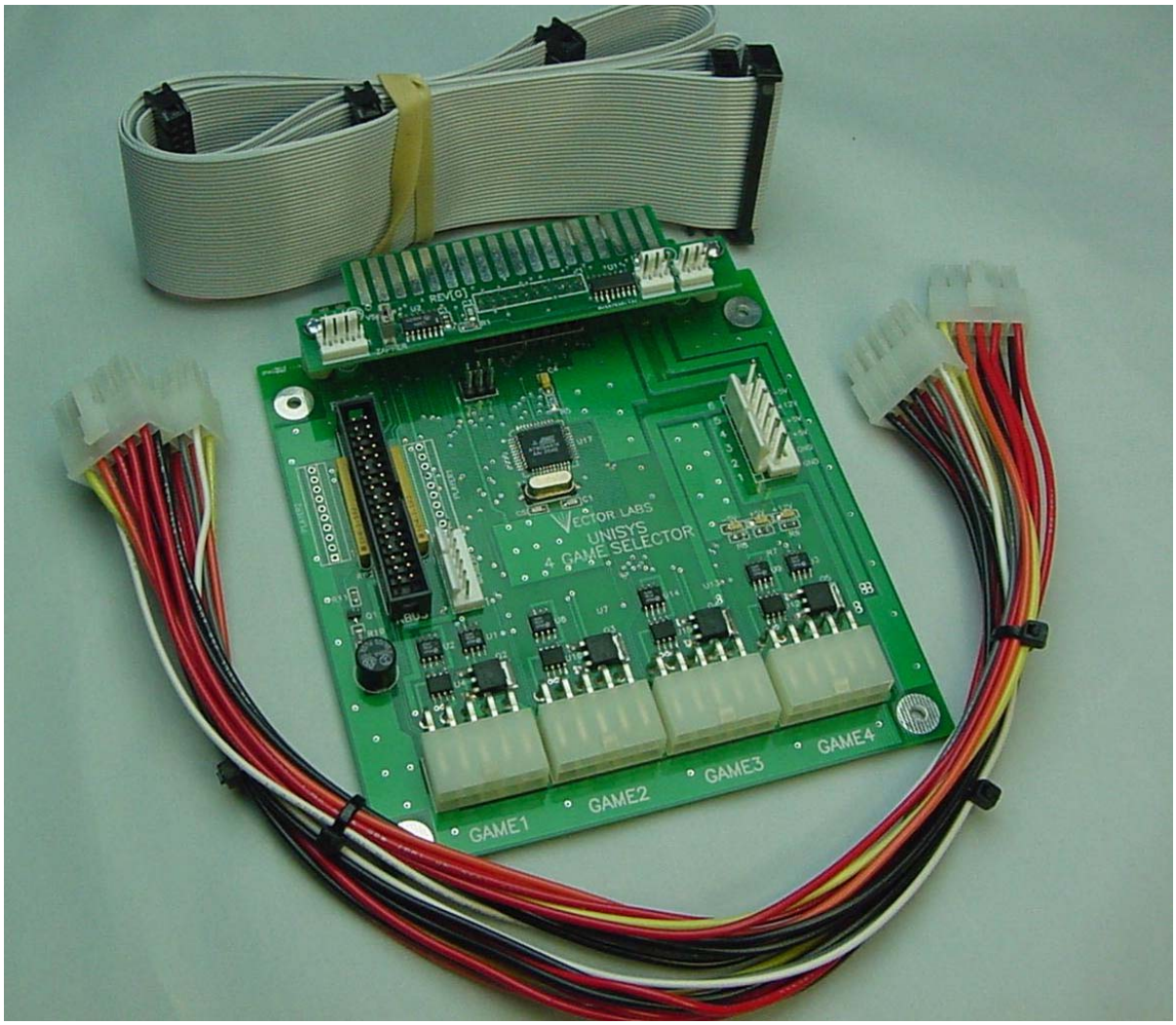
VS. 4in1 Game Selector
INSTALL GUIDE



Each VS Selector includes the following items:

1. VS. 4in1 Game Selector PWB
2. Two 16” power cables
3. 34 pin ribbon daisy chain cable
4. Mounting feet and screws

GAME SELECTOR OVERVIEW

The game selector is an intelligent controller utilizing up to four adapters. The power switching to each adapter uses highly efficient MOSFET's for quiet and reliable operation and does not have any mechanical wear issues like relays. There are four 10pin connectors for power distribution to each adapter board. Power status LED's for +5v, +12v & -5v power rails are provided. A single connector ribbon cable header handles all the control and video signal distribution to each of the adapters.

The selector board controls power switching and communicates with each adapter board on power up. It is necessary for the selector to know what types & how many adapters are plugged in. Since the ribbon cable is common to all adapter boards the power cables determine the order that each game board is powered on.

An example of this is if you had only two adapters installed and they were plugged into The Game1 and Game2 connectors, on power up Game1 would be powered first. When you cycled to the next game Game2 would be powered. Since the selector "knows" that there were no adapters plugged into Game3 & Game4 connectors, when you cycle to the next game it goes back to Game1.

Another example of this is if you plug your two adapters into Game2 and Game4 connectors on the selector board. On power up Game2 would be powered first. When you cycled to the next game Game4 would be powered. Since the selector "knows" that there were no adapters plugged into Game1 & Game2 connectors, when you cycle to the next game it goes back to Game3.

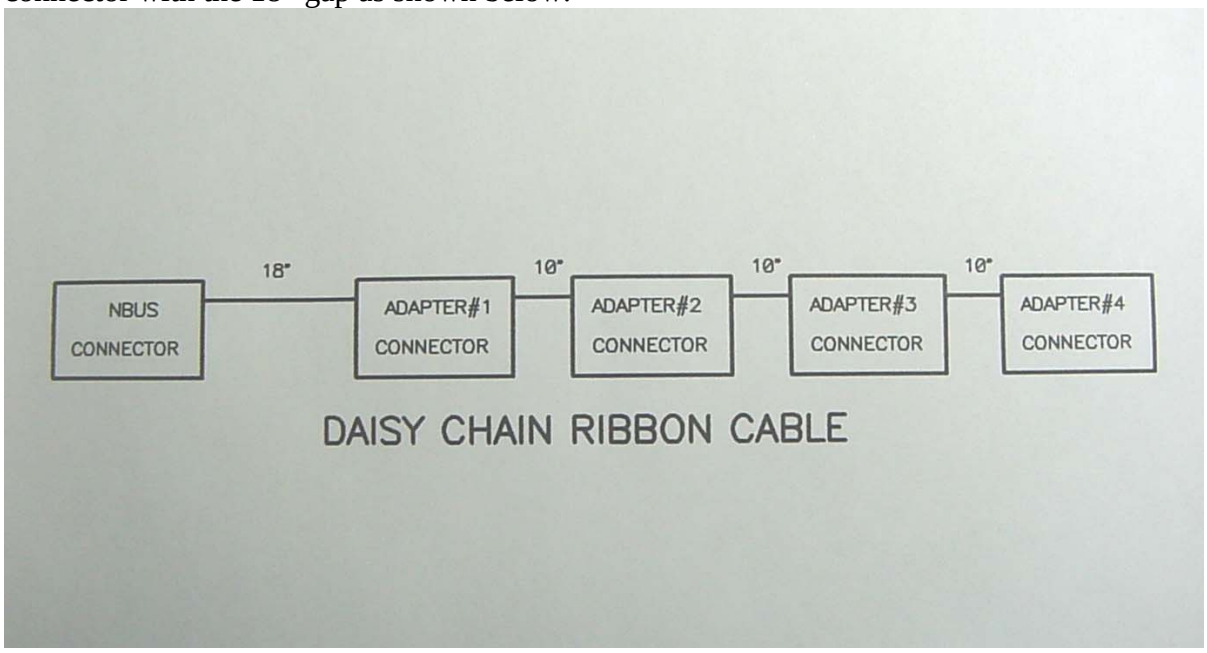
If the selector did not "know" which adapters were plugged in, then when you cycled to the next game and there was no adapter installed you would just get a blank screen until you cycled to one of the four connectors that had an adapter connected. Also on some adapters there are option jumpers that can tell the selector to do special operations.

DO NOT at any time plug or unplug ribbon or power cables when the power is on.

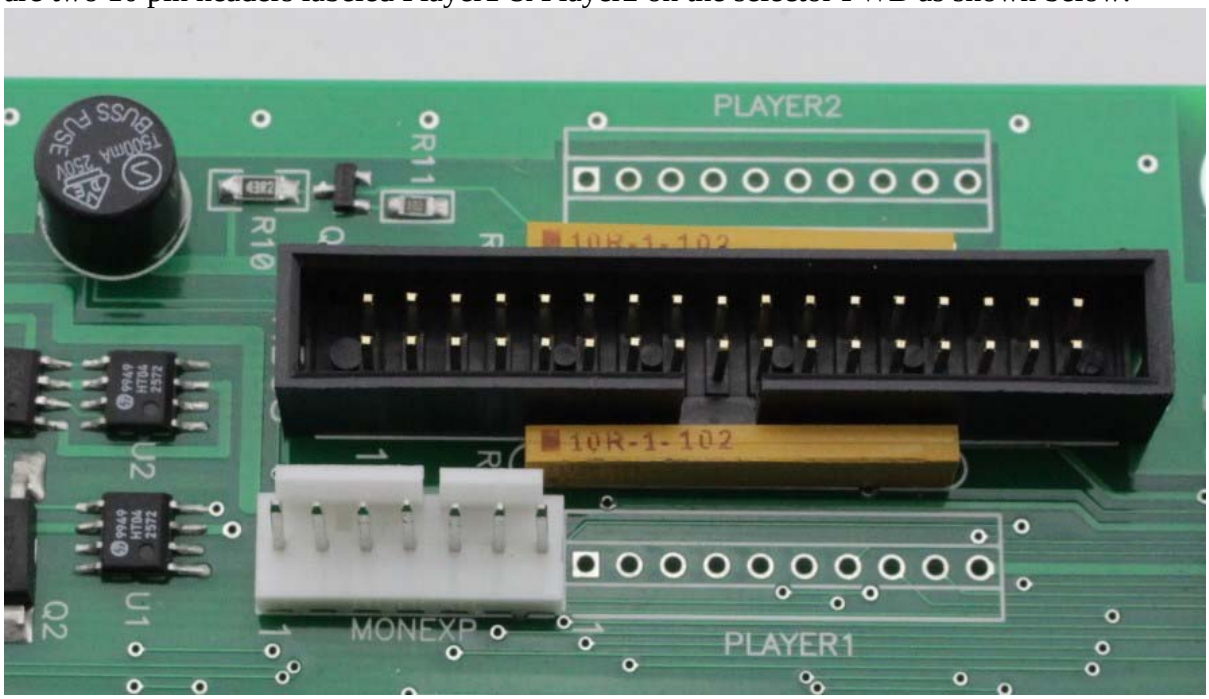
Each 4in1 Selector comes standard with two adapter power cables, additional cables can be purchased for $5 each. The ribbon cable does support up to four adapters.

4 GAME SELECTOR CONNECTORS & CABLING

The supplied 34pin ribbon cable contains five connectors. This 4'cable has connectors spaced as described below. Please make sure that the selector is plugged into the first connector with the 18" gap as shown below.



If for some reason you need to add controls that your cabinet harness does not support, there are two 10 pin headers labeled Player1 & Player2 on the selector PWB as shown below.



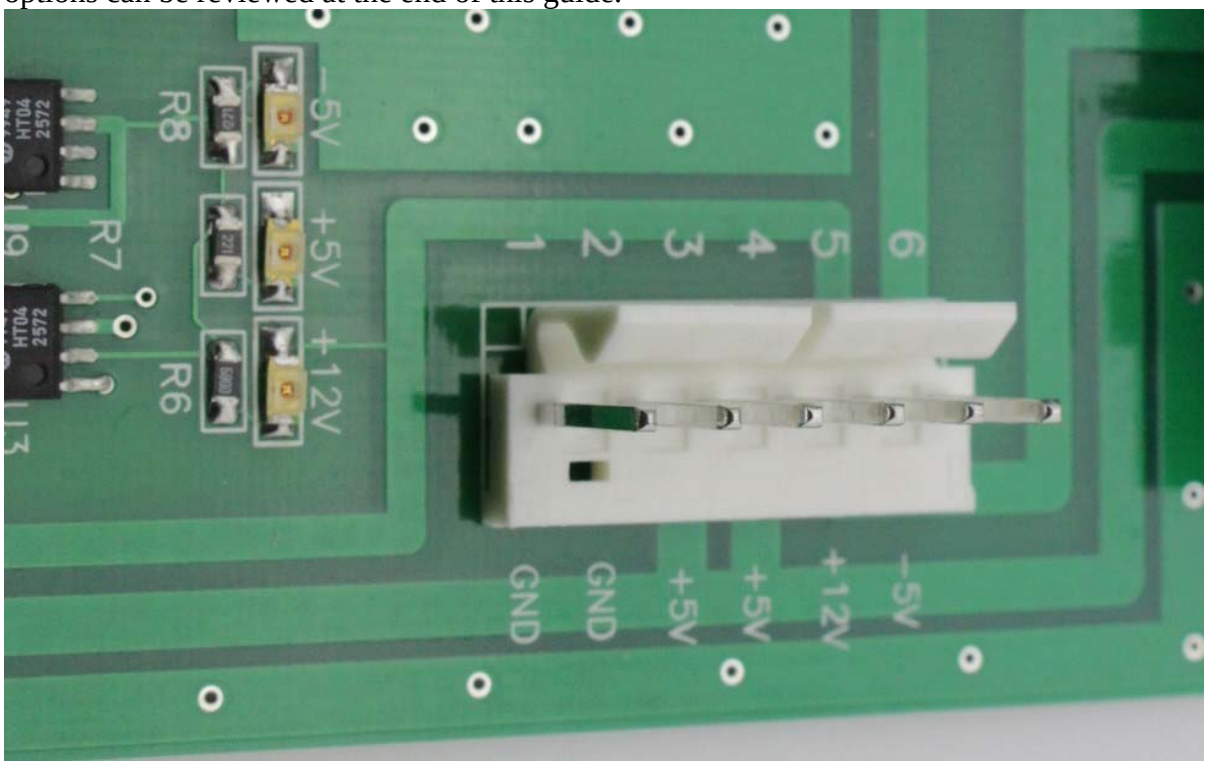
Normally these headers are not installed from the factory, but can be requested free of charge by contacting support@vector-labs.com. The pinout of the connectors is defined below.

PLAYER1 CONNECTOR	PLAYER2 CONNECTOR
1. PLAYER1 START	1. PLAYER2 START
2. JOYSTICK UP	2. JOYSTICK UP
3. JOYSTICK DOWN	3. JOYSTICK DOWN
4. JOYSTICK LEFT	4. JOYSTICK LEFT
5. JOYSTICK RIGHT	5. JOYSTICK RIGHT
6. BUTTON 1	6. BUTTON 1
7. BUTTON 2	7. BUTTON 2
8. BUTTON 3	8. BUTTON 3
9. BUTTON 4	9. BUTTON 4
10. GROUND	10. GROUND

Also notice that there is a 500ma fuse in the picture, this fuse is for the selector microprocessor & standby power for the adapters. It is socketed and replaceable. One quick way to determine if the fuse is blown is that the Yellow standby LED's on the all of the connected adapters will not be lit.

The MONEXP connector is used for an optional VGA conversion board to drive an LCD display. DO NOT use this connector for any other purpose as it may damage the selector.

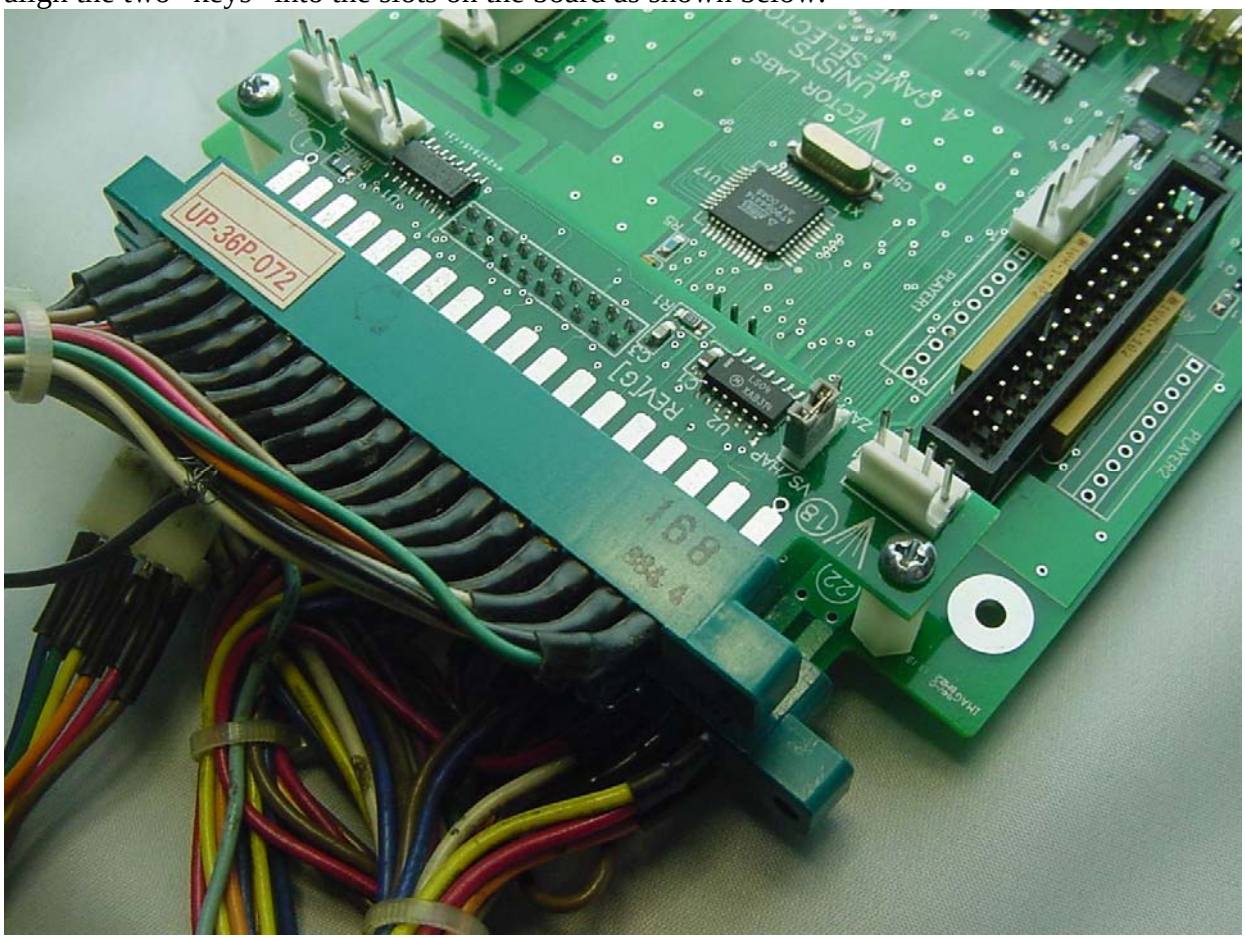
There are ***three green LED's that monitor the +5v, +12V and -5V*** coming from the cabinet wiring harness and supply. However, if your cabinet harness for example only has +5V then only that LED will be lit. The other 6 pin white connector is for direct connection to a HAPP or PC type switching power supply. It is recommended that you use this direct connection to reduce the voltage drop due to long cabinet wire harness lengths. Those power supply options can be reviewed at the end of this guide.



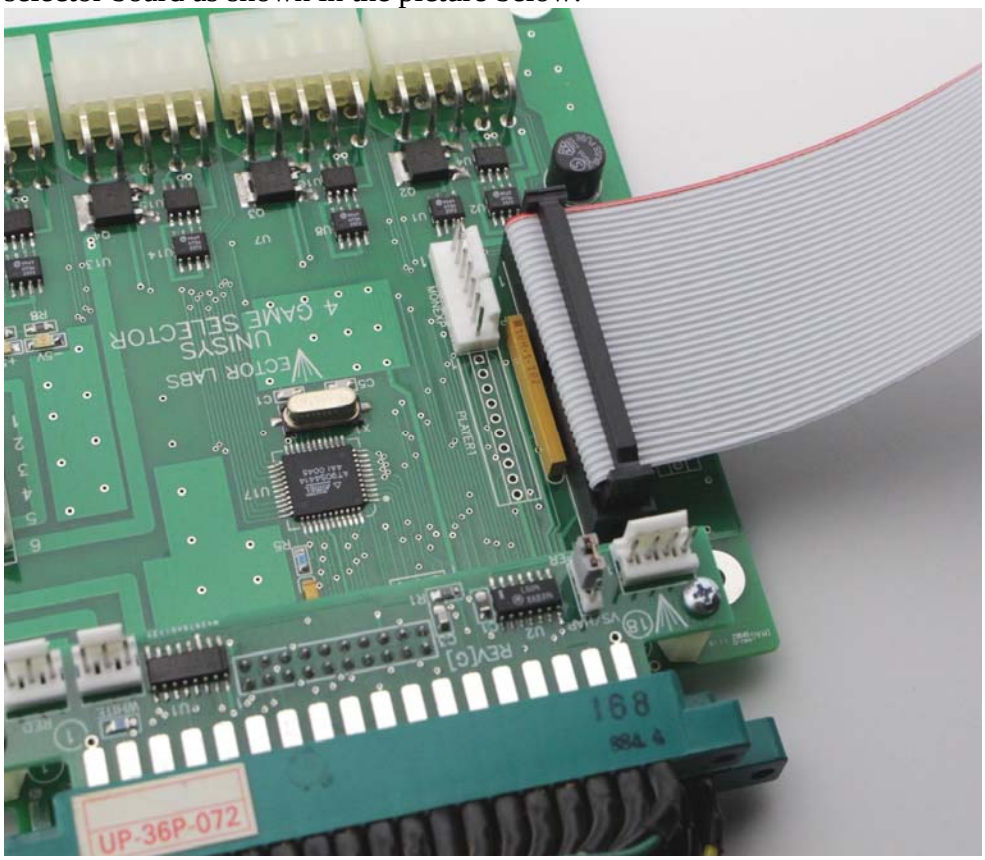
INSTALLING THE 4 GAME SELECTOR

The VS. 4 game selector has an additional riser card to allow connection of both the dual row 22 pin & the dual row 18pin card edge connectors from your cabinet harness.

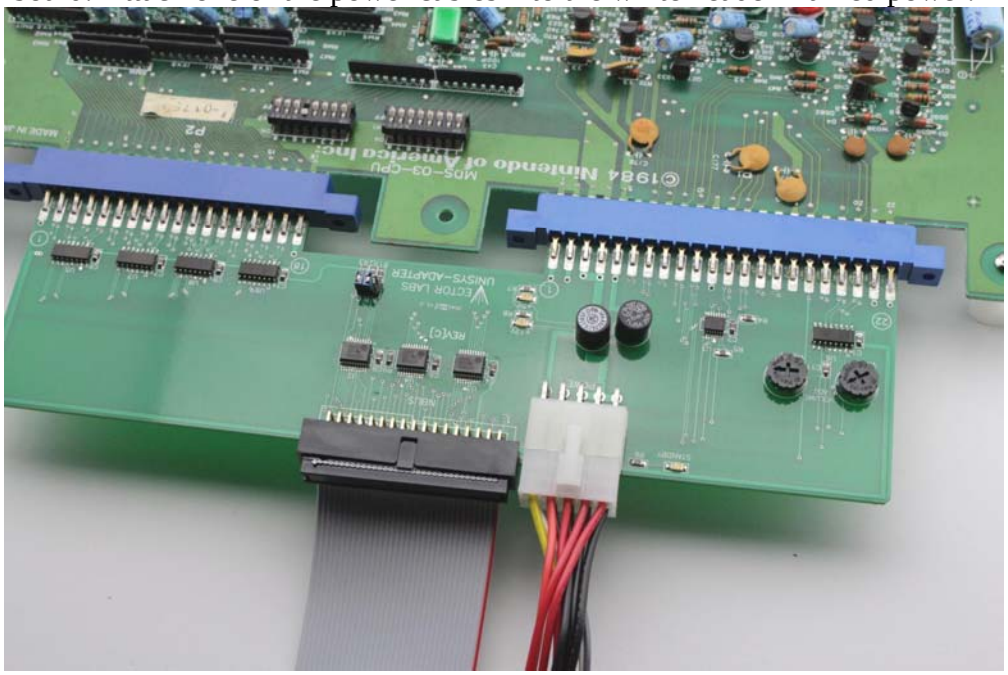
Attach cabinet harness card edge connectors to the selector, making sure to align the two “keys” into the slots on the board as shown below.



Attach ribbon cable connector that has a strain relief into the NBUS header on the selector board as shown in the picture below.



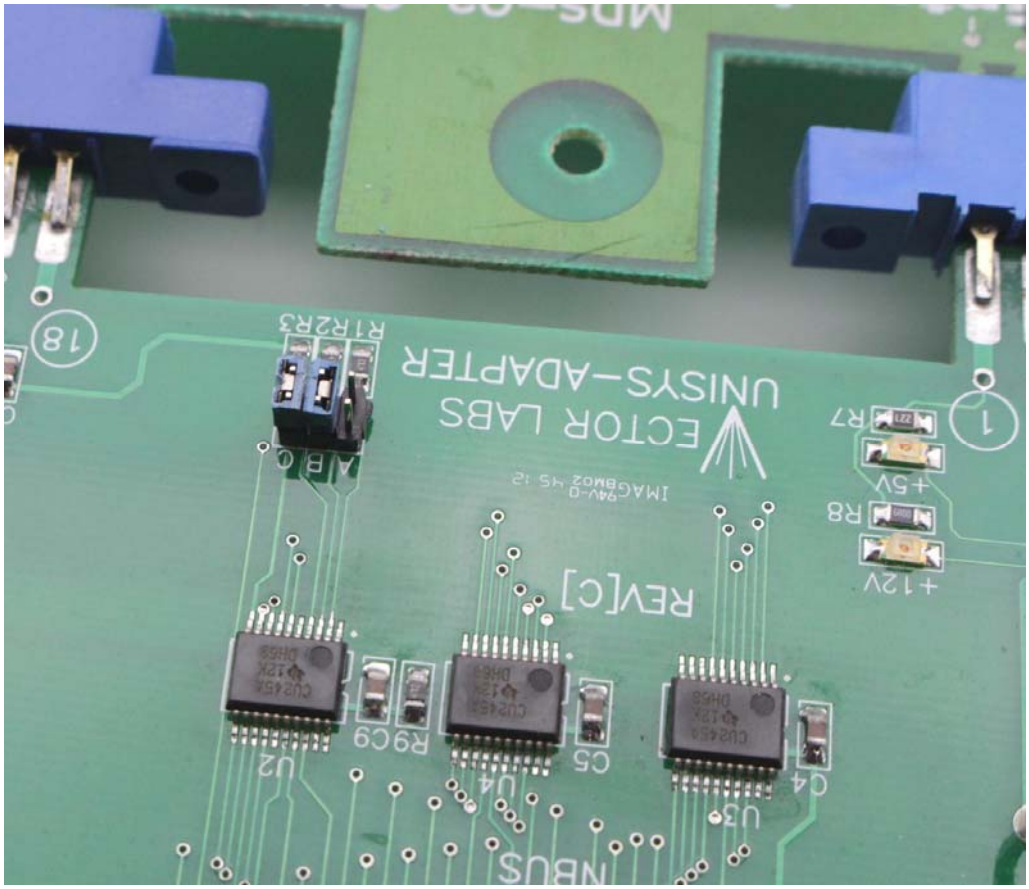
Attach one of the 4 remaining connectors into the NBUS header on the adapter board. Attach one of the power cables into the white header marked power.



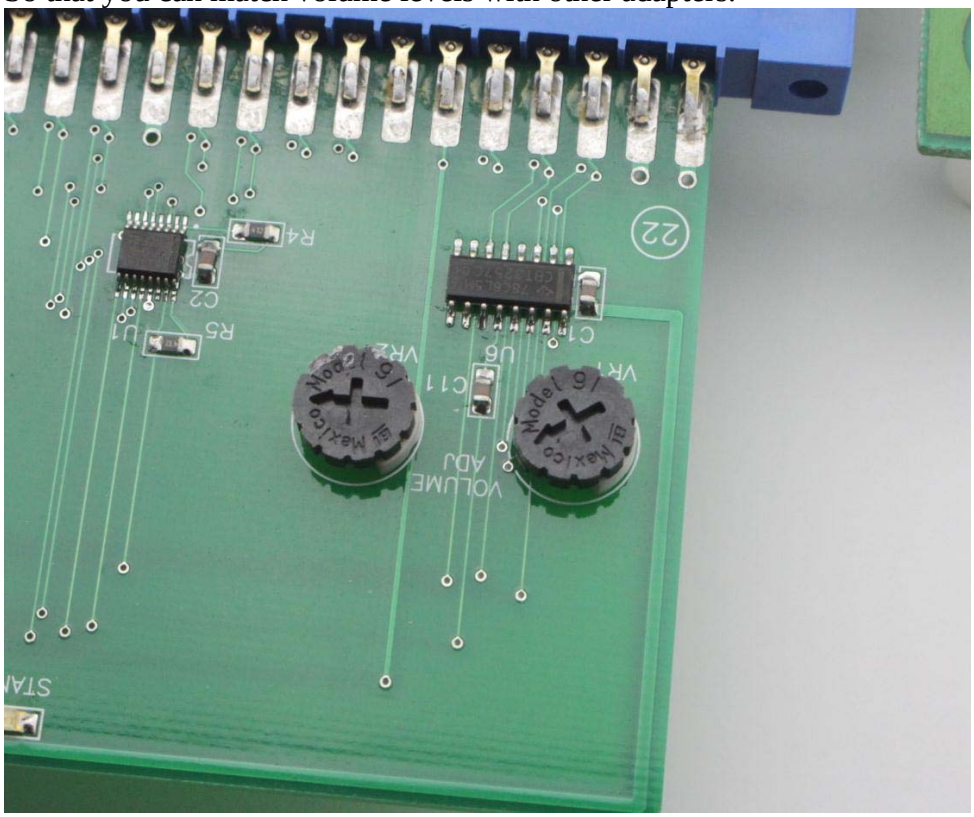
Each VS adapter has a configuration header marked A B C. These jumpers are used to define how the VS game PCB is to be controlled by the selector. This is due to the special nature of the VS board, the different options are as follows:

VS PCB GAME OPTION JUMPERS		A	B	C
SIDE A = NORMAL GAME	SIDE B = NOT POPULATED	L	H	H
SIDE A = GUN GAME	SIDE B = NOT POPULATED	L	H	L
SIDE A = NORMAL GAME	SIDE B = NORMAL GAME	H	L	L
SIDE A = GUN GAME	SIDE B = GUN GAME	H	H	L
SIDE A = NORMAL GAME	SIDE B = GUN GAME	L	L	L

L = DEFINED AS JUMPER INSTALLED H = DEFINED AS JUMPER REMOVED



The VS adapter has separate volume control pots for SIDE A and SIDE B
So that you can match volume levels with other adapters.



Take note of the following features of the adapters:

1. Standby LED: This is illuminated at all times when the ribbon cable is connected to the adapter and the game is powered up. It verifies that the bus isolation circuitry is operating normally

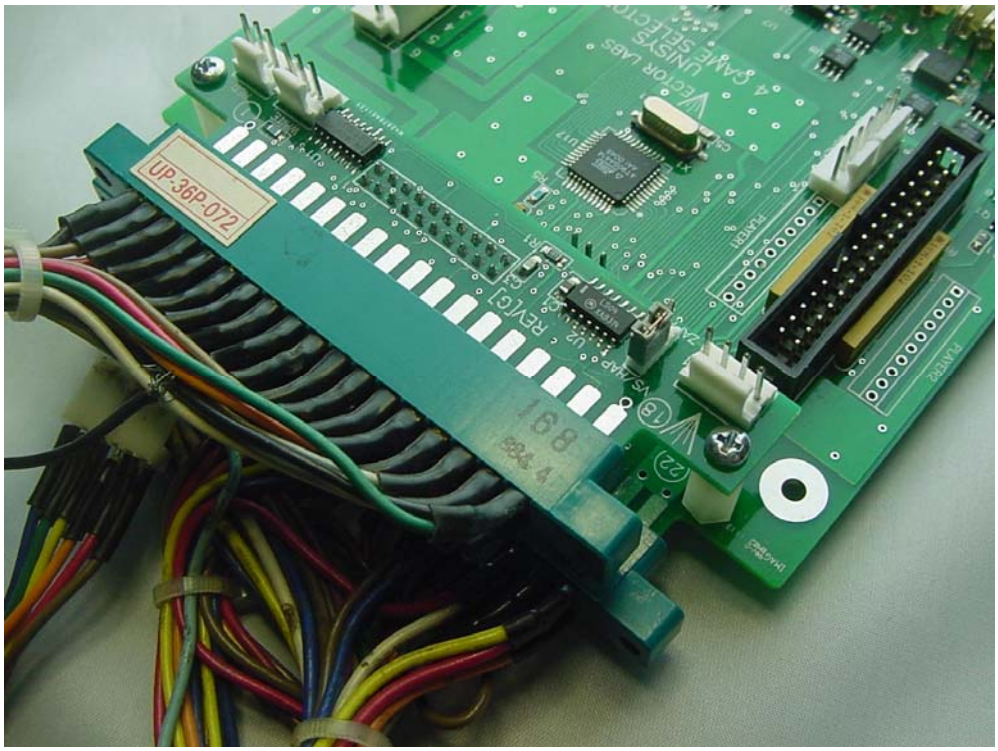
2. Individual green LED's monitor the fuse integrity at each power input to the adapter board. In this example the power inputs are +5V, +12v. These LED's will be illuminated when the adapter is activated by the selector board. If any of the LED's are not illuminated then its associated fuse has been blown due to an over current condition. The fuses are not resettable but can be unplugged and replaced.

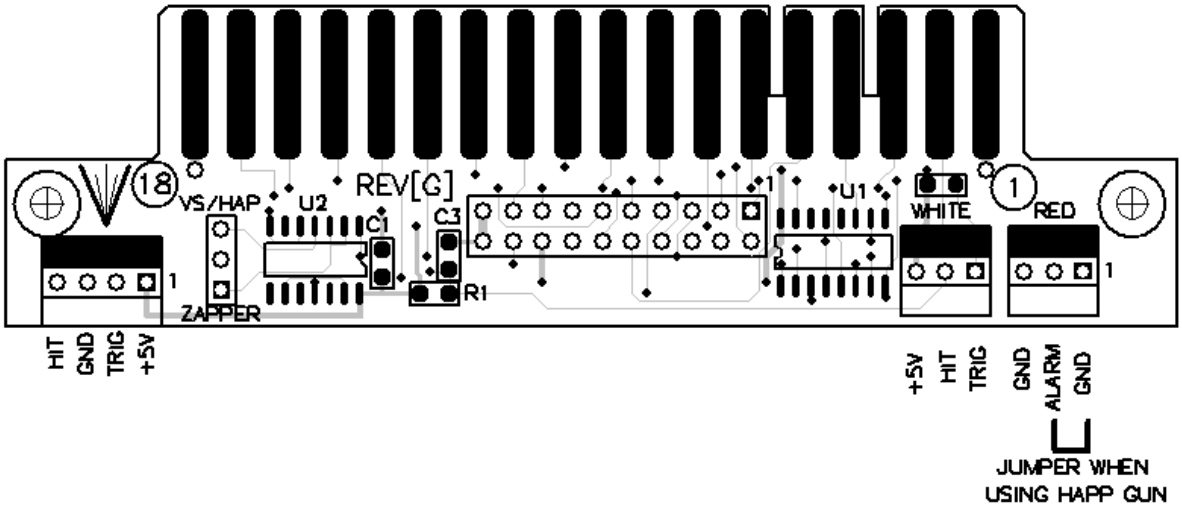
3. Individual fuses for each power rail can be replaced when a critical over-current condition error has occurred.

The values are as follows:

+5v ---- 5.0A +12v ---- 2.5A

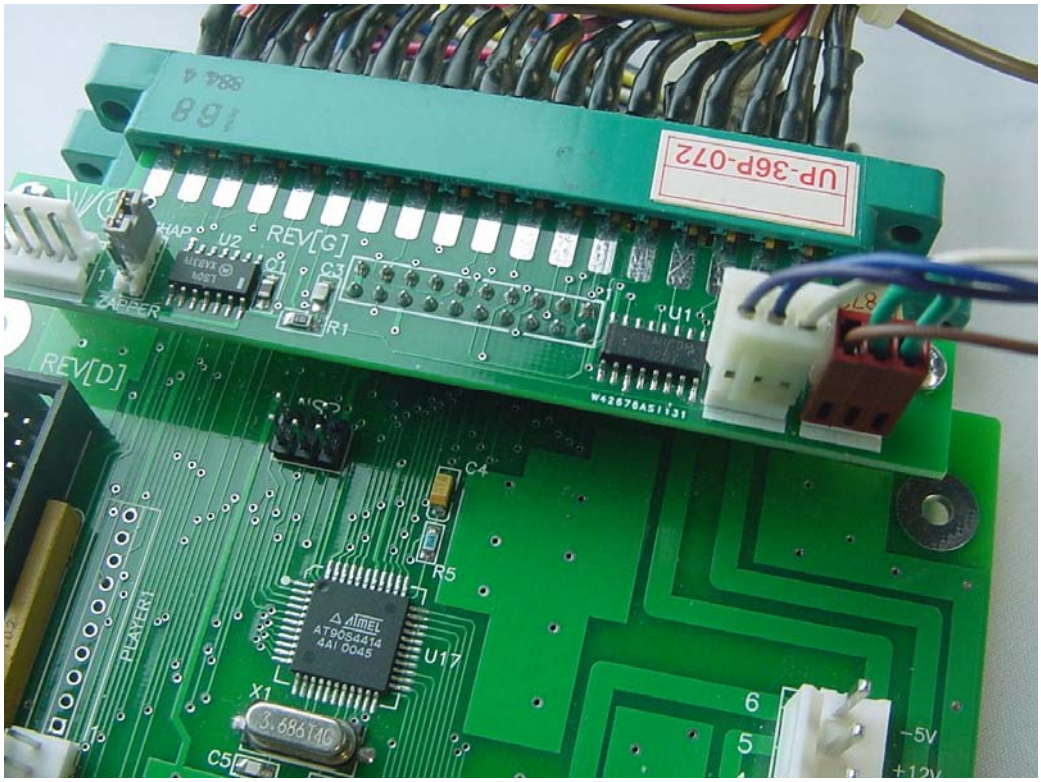
There are three connectors on the top riser board of the selector.
One 4pin connector for Happ guns. Two 3pin connectors for VS guns.
also a 3pin jumper to select the gun type or either VS/HAPP or ZAPPER.



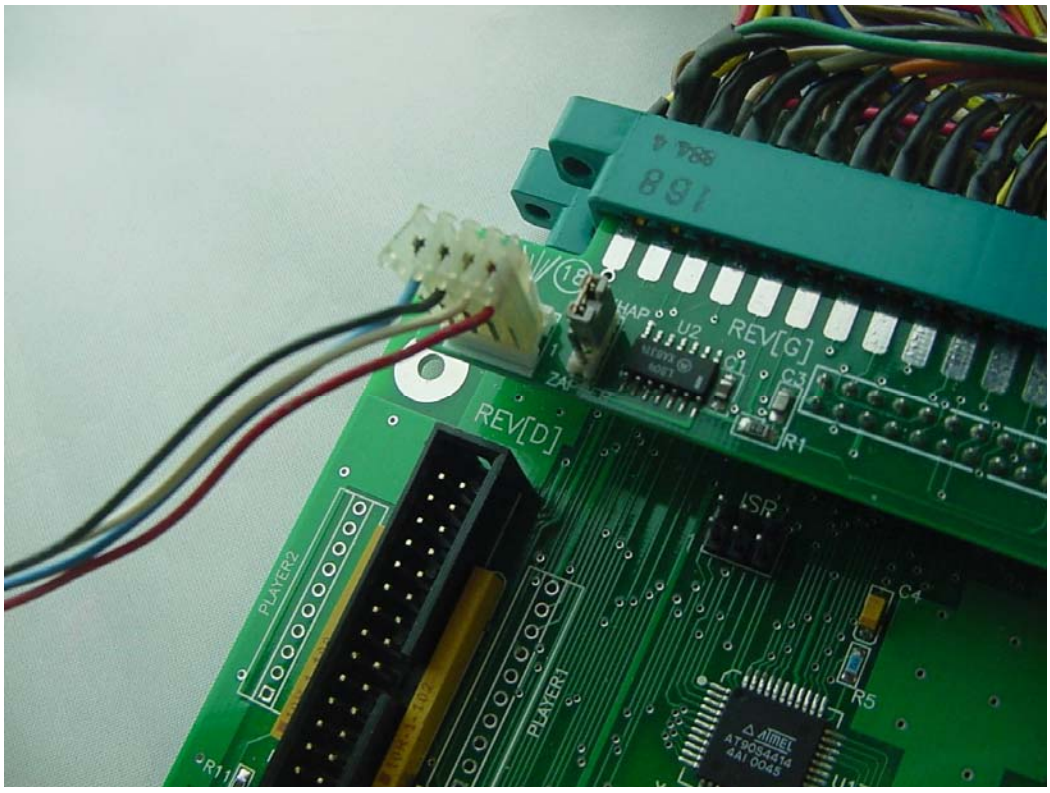


There three gun options that are available on the VS 4in1 selector.

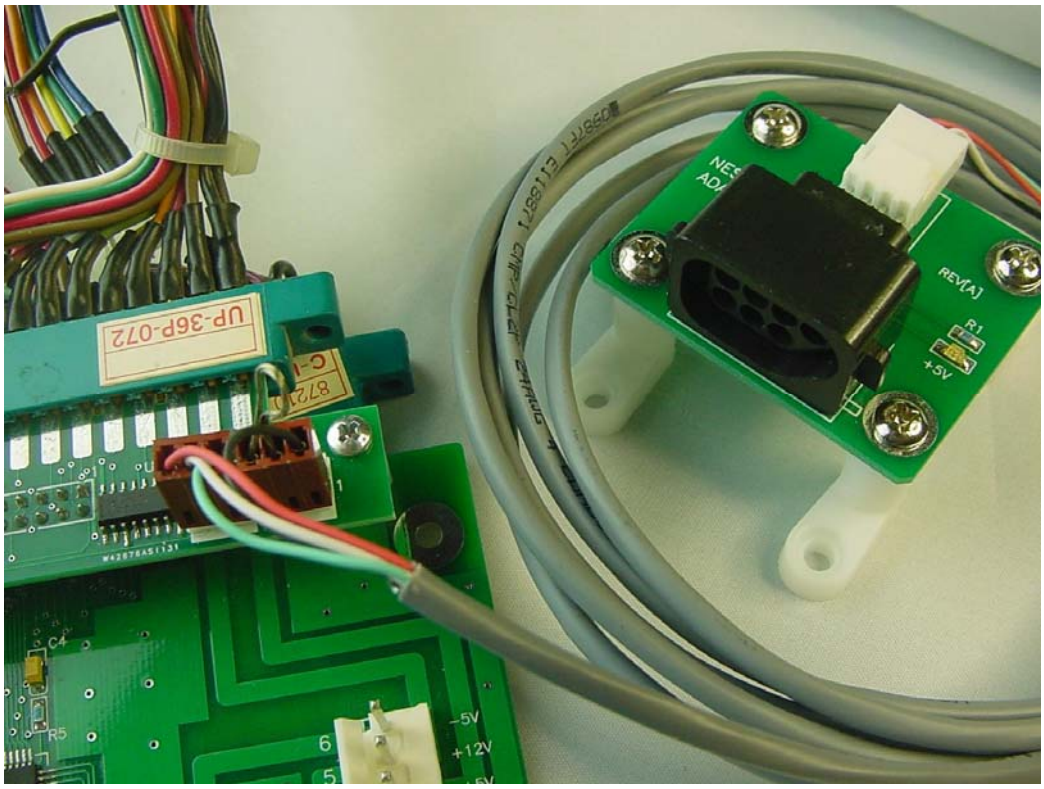
OPTION 1 STANDARD VS GUN



OPTION 2 HAPP GUN



OPTION 3 NINTENDO ZAPPER WITH OPTIONAL INTERFACE BOARD



SPECIAL CONTROL PANEL SEQUENCES

Hold P2 button then press left A button switches to next adapter installed
Hold P2 button then move left Joystick UP or DOWN will add credits
Hold P2 button then move left Joystick RIGHT switches to “A” side of VS. boards
Hold P2 button then move left Joystick LEFT switches to “B” side of VS. boards
**NOTE if option jumpers are set to single sided then LEFT and RIGHT have no effect.

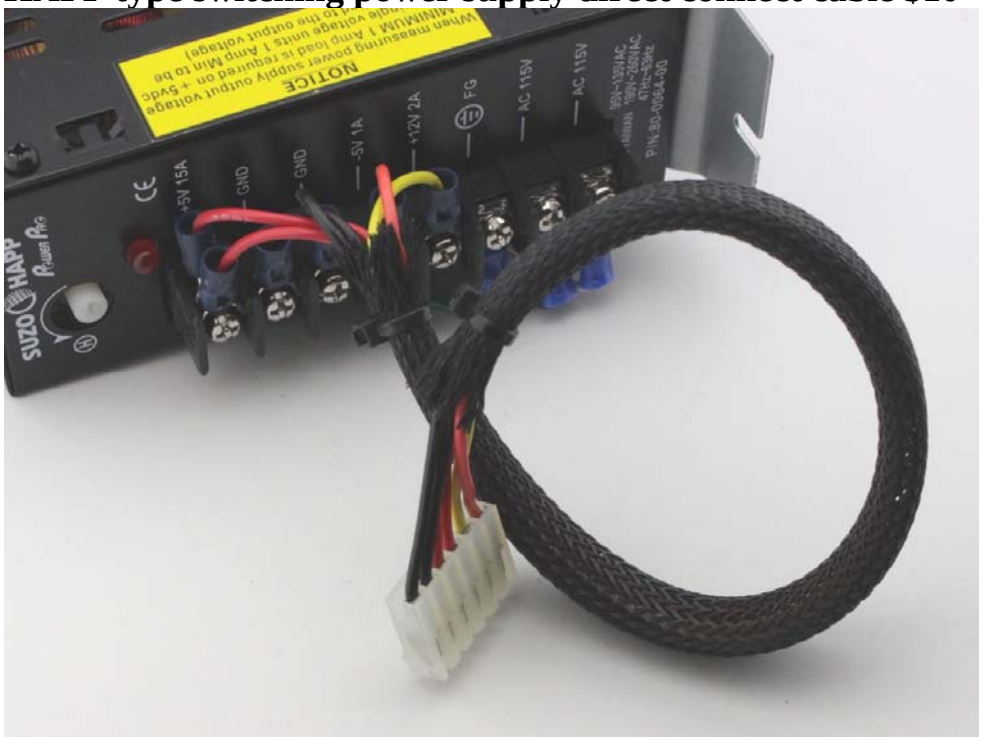
POWER SUPPLY CONSIDERATIONS

The power supplies contained in classic arcade games in general are over 25years old, some may have “drifted” out of spec on the +5v power rails. It may be necessary to replace these aging power supplies with something newer and more stable. We recommend that you perform the following test to ensure reliable & trouble free operation of your arcade game & 4 game selector. It will require an accurate digital voltmeter.
Power up your game and take note of which adapter has its green LED’s lit. Take your volt meter and probe the two corner pins of one of the 20pin IC’s on the game PCB as shown in the picture on the next page.

THE VOLTAGE READING SHOULD BE NO LOWER THAT 4.75VDC. If it is lower and your power supply does not have a way of adjusting the voltage to at least that minimum level then we strongly suggest you purchase a new switching power supply and install it like the one shown on the options page. TTL devices in these older arcade games require that the +5v line be in the range of 4.75v minimum to a maximum of 5.25v.
If you run your game PCB's at a voltage outside this spec it WILL cause intermittent failures at best, or not running the game at all as a worst case.

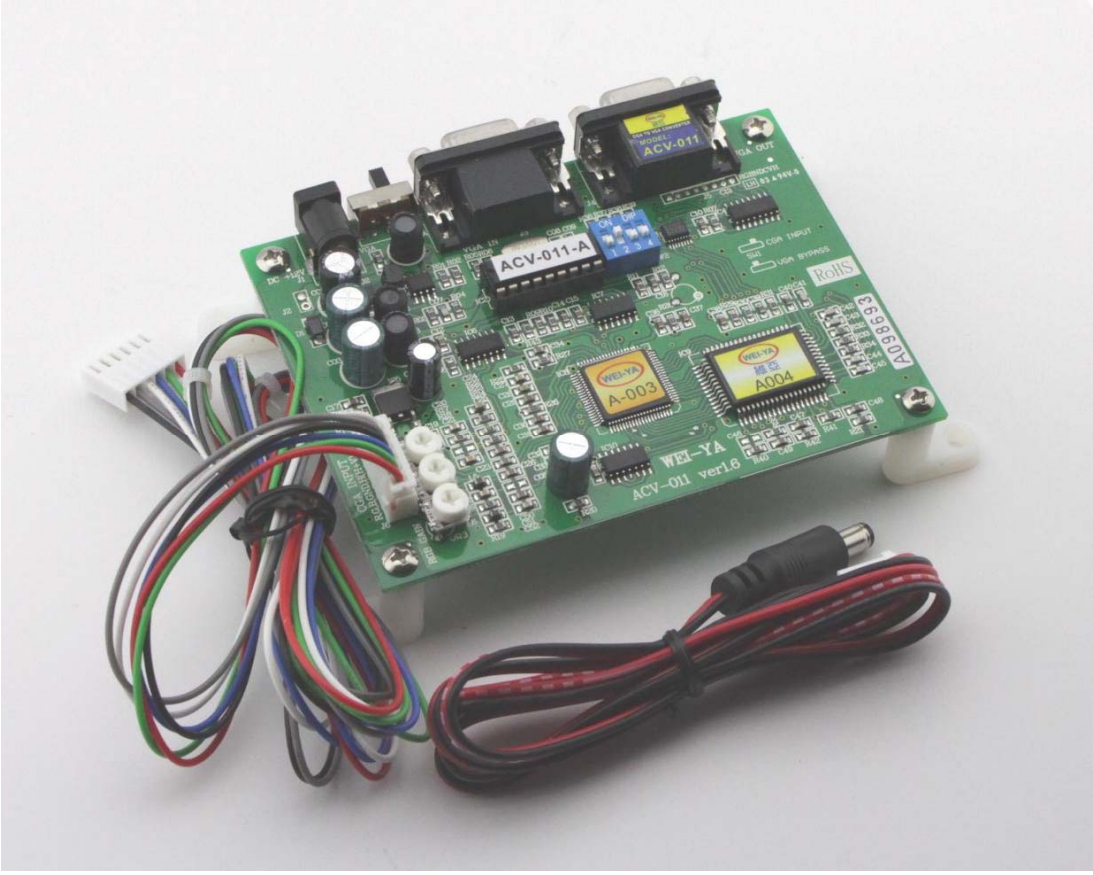
SELECTOR OPTIONAL ACCESSORIES

HAPP type switching power supply direct connect cable $10



ATX PC switching power supply direct connect cable & PCB $29

CONVERSION BOARD TO DRIVE VGA LCD DISPLAY $99



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