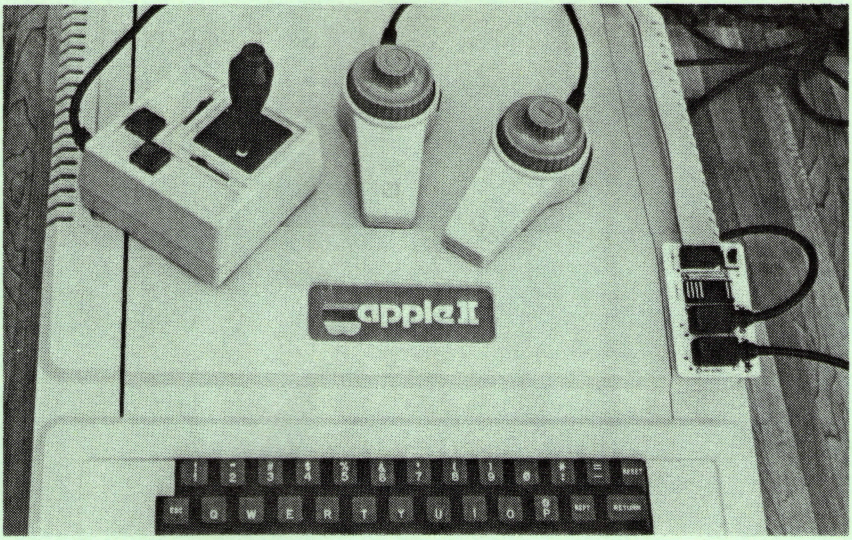
Paddle-Adapple

I/O ADAPTOR FOR APPLE II, //e, & FRANKLIN
for paddles & joysticks with 16 pin connectors

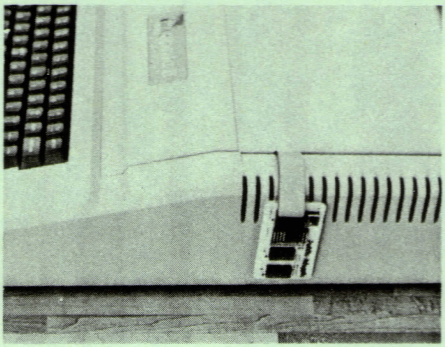


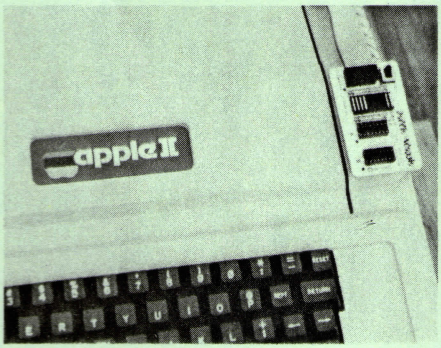
The **PADDLE-ADAPPLE** plugs into the GAME I/O, and is designed to operate in one of two modes. In the first, it enables you to easily select between one of two devices plugged into your **APPLE**. For example, you may have a set of paddles and a joystick plugged into the **PADDLE-ADAPPLE** at the same time. By a switch, you may select one or the other. No longer is it necessary to open your **APPLE**, remove one device, plug in the other, only to have to repeat the performance shortly thereafter. In the second mode, the **PADDLE-ADAPPLE** takes advantage of the **APPLE**'s ability to handle up to four game controllers. The device plugged into one socket is treated as game controllers Ø and 1. The other device is treated as numbers 2 & 3. In either mode, the **PADDLE-ADAPPLE** can be configured to meet your specific needs, such as exchanging X and Y axis, reassigning push-button numbers, etc. Perhaps the most exciting possibility with the **PADDLE-ADAPPLE** is the ability to offer you up to <u>four</u> push-button inputs (the **APPLE** normally has three). Software writers can now write games for four players, each with a paddle AND push-button.

Paddle-Adapple

HOW TO CONNECT THE PADDLE-ADAPPLE

First, **TURN OFF THE POWER TO THE APPLE!!** Remove the top, and unplug anything that may be in the GAME I/O socket. Take the loose end of the 16 pin jumper, and plug it into the GAME I/O socket with pin #1 to the lower right. When plugged in correctly, the blue edge of the cable will be toward the keyboard. Be very careful, as the plug is fragile. At this time, you may remove some or all of the protective cover on the adhesive-backed foam tape. We recommend that you remove only a small portion of the cover in case you later want to remove the **PADDLE-ADAPPLE.** This is an aggressive adhesive, and should be considered permanent, although it can be removed without harming the plastic case. Now firmly press the **PADDLE-ADAPPLE** against a convenient spot on the APPLE, making sure that it is within reach of the cable. Replace the cover. The cover pressing against the cable will act as a "strain relief". Of course, you may route the cable out the back of the computer, if you wish. You may now connect up to two sets of paddles, two joysticks, one of each, or other combinations of devices to sockets "A" and "B" of the **PADDLE-ADAPPLE.** Be sure that the paddles are plugged in correctly. Pin #1 of the socket is marked with a large black dot adjacent to the sockets.





TWO OF MANY WAYS OF
INSTALLING THE **PADDLE-ADAPPLE**

RECONFIGURING THE PADDLE-ADAPPLE

If you will be selecting one of two devices that will be plugged into the **PADDLE-ADAPPLE** (mode 1), then it is already configured for your needs. If you will be using two devices simultaneously (mode 2), you will need to add two jumpers (small white wires) to the board. You will find extra jumpers in the small envelope packed with the **PADDLE-ADAPPLE.** Add them to the second and third sets of holes in the "JUMPERS" socket (from "G2C" to "GØB" and from "G3C" to "G1B"). Also, you may have to change some of the other jumpers, depending on your application. See the wiring diagrams on page 7. Move the slide switch on the **PADDLE-ADAPPLE** to the left ("A" position).

Plug your devices into sockets "A" and "B" of the **PADDLE-ADAPPLE.** Please make sure that pin #1 of each device is plugged into the lower right corner of each socket, adjacent to the large black dot.

HOW TO USE THE **PADDLE-ADAPPLE**

Mode 1 users (those using one of two devices) may easily choose between the devices by moving the slide switch between "A" and "B". When the switch is on "A", the device plugged into socket "A" is selected. Likewise for "B". **BE SURE** that there are **NO** jumpers in the third and fourth set of holes in the "JUMPERS" socket.

Mode two users can now use both sets of paddles or joysticks at the same time. Game controllers "Ø" and "1" of the device plugged into socket "A" will be treated by the computer as PDL(Ø) and PDL(1). Game controllers "Ø" and "1" of the device plugged into socket "B" will be treated as PDL(2) and PDL(3). **BE SURE** that you keep the switch on position "A" at **ALL** times. NOTE: Having the switch in the wrong position, or miswiring the "JUMPERS" socket will not destroy anything. It just might not work.

A NOTE ON NOTATION

The "JUMPERS" socket has a (mostly) three character "shorthand" notation. The first character tells you which type of input/output it is. Game controller (PDL) or push-button Switch (also known as flag inputs).

The second character is the number of the device, using standard APPLE notation.

The third character is the socket on the **PADDLE-ADAPPLE**. "A" or "B" refers to the sockets marked "A" and "B". These are used to plug in the device (such as paddles or joysticks). "C" is the "COMPUTER" socket. This socket comes equipped with a flat ribbon cable which plugs into the computer. "A" and "B" are OUTPUTS from the device. "C" is an INPUT into the computer.

EXAMPLES:

G2C is an input to Game controller #2 of the computer.
G1B is an output from Game controller #1 of socket "B".
S2C is an input to Switch (flag) #2 of the computer.
SØA is an output from Switch (flag) #Ø of socket "A".

There are two exceptions to the three character shorthand. In the upper right corner of the "JUMPERS" socket there are two pins labeled "GØA(B)" and "G1A(B)". This means that if the slide switch is in position "A", then these are equivalent to "GØA" and "G1A". If the slide switch is in position "B", then these pins are "GØB" and "G1B".

THAT FOURTH PUSH-BUTTON SWITCH

There are three "flag" inputs to the computer through the GAME I/O socket. These inputs are located at addresses 49249 through 49251 ($CØ61 through $CØ63). If you will examine the schematic diagram in your APPLE manual, you will see that there is a fourth input available. It is used to test the status of the "CASSETTE IN" jack located in the rear of the computer. We can use this as a fourth flag input, with a little help from the **PADDLE-ADAPPLE** and some software. The address of this input is even contiguous with the above, being 49248 ($CØ6Ø). What we do is to take a standard phone plug with a long wire soldered to the center conductor, and plug it into the "CASSETTE IN" jack of the computer. The other end is plugged into the **PADDLE-ADAPPLE**, into whichever pin we want to be the fourth push-button. In most cases, this will be "SIB". If you do not have a phone plug available, you may obtain one from us (with attached wire) at no charge. Please write or telephone, and we will send it out to you.

IMPORTANT NOTE: The logic on this input is inverted compared to the other three. Of course, this is no problem in software. BASIC users can use "<128" for the fourth switch when they use ">127" for the others. Assembly language writers can use "BPL" instead of "BMI", or vice versa.

SHIFT KEY MODIFICATION

For those of you using the standard shift key modification, you may route the wire directly to either of the "S2C" pins on the "JUMPERS" socket. Thus, you may make use of the shift key modification, and still use the "A" and "B" sockets for your usual **GAME I/O** devices. If you are switching between two devices, this should cause no problem. However, if you are making use of two devices simultaneously, and expecting to use the third push-button input "S2C", you may have to remove the wire from the modification temporarily. Read the next paragraph for more details.

INTERFERENCE

There are certain combinations of devices that might interfere with each other if you attempt to use them together. In general, this might occur when one (or both) of the devices try to pull the flag inputs low. Since the flag inputs are wired in parallel, and not affected by the slide switch, this will prevent the other device from operating the input. In most cases, you can still use the **PADDLE-ADAPPLE** to conveniently switch between the devices. However, it must be done a bit differently. this is best shown by example:

LIGHT PEN: Some light pens use the first flag input. If you have a set of paddles plugged into the other socket, push-button Ø will interfere with the light pen, and vice-versa. The way around this is to plug the paddles in "A", and the light pen in "B". Wire the "JUMPERS" socket as usual, but replacing the jumpers from "SØA" and "SØB" to "SØC" with one of the longer jumper wires. Keep the slide switch on "A", and move the jumper wire to "SØA" to use the paddles, and "SØB" to use the light pen. This is illustrated on the lower left corner on page six of these instructions.

BPI with the shift key modification: Both of these devices use switch #2. Wire the "JUMPERS" socket as shown in the center left diagram on page 6 of these instructions. When you want to use the shift key modification, lift the end of the wire out of "S2C", and replace it with the wire from the shift key.

FORMAT][((tm) Kensington Microware): The only way to use this program with the **PADDLE-ADAPPLE** is to order a modification kit from us (no charge, of course). Just write or telephone us.

APPLE][e: The "sub-miniature D" connector on the back of the computer is wired in parallel with the interior **GAME I/O** socket. This means that, under most circumstances, you may not use both the interior and exterior sockets at the same time. Also, since both the "open APPLE" and "closed APPLE" keys affect the push-button inputs, care should be used when designing unusual applications for the **GAME I/O**.

SOFTWARE PROTECTION KEYS: There are many devices now on the market to prevent the use of software without a device plugged into the **GAME I/O** socket. Many of these are rather complex, and the only way to use them with the **PADDLE-ADAPPLE** is to plug it into "A" only when you need to use it. When you use it, remove the device in the other socket temporarily. Use the wiring diagram that makes the "A" socket an exact duplicate of the **GAME I/O** socket (lower right diagram).

CAUTIONS!!

When crossing wires on the "JUMPERS" socket, be sure to use insulated wire to avoid short circuits. If you lose the extra wires packed with the **PADDLE-ADAPPLE**, replace them with #22 solid (not stranded) tinned copper wire.

The loading limits for LSTTL must be observed if you are using the annunciator outputs or the $CØ4Ø strobe. Remember, these limits apply to **BOTH** sets of devices plugged into the **PADDLE-ADAPPLE.**

HANDY HINTS

If you have played so many one-player games that paddle #Ø has worn out, you can use paddle #1 by running a jumper from "G1A(B)" to "GØC", and from "S1A" to "SØC" (assuming, of course, that the set of paddles are plugged into "A".

If your software requires it, you may "parallel" two or more push-buttons together, so that either one will affect the input. For example, if you run a jumper from "SØC" to "SØB", and from "SØC" to "S1A", then either push-button will affect the input.

If you need additional push-button inputs, you may "borrow" one or more game controller (PDL) inputs. For example, you may run a jumper from "S1B" to "G3C", and it will act as another push-button input. If the button is pressed, PDL(3) will read Ø, and when released, will read 255.

TEST PROGRAM

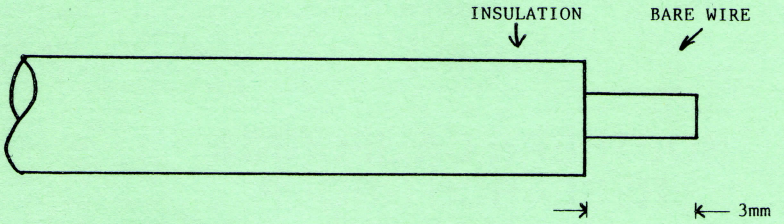
If you are using two sets of paddles, or two joysticks, this program will demonstrate the use of the **PADDLE-ADAPPLE.** Wire the "JUMPERS" socket as per the upper right illustration on page six, and type in the following program:

```
1Ø  HOME
2Ø  VTAB 1Ø
3Ø  FOR I = Ø to 3
4Ø  X(I) = INT (PEEK(49248 + I)/128)
5Ø  NEXT I
6Ø  PRINT PDL(Ø); TAB(5) PDL(1); TAB(9) PDL(2); TAB (13)
    PDL(3); TAB (17) X(1); X(2); X(3); 1-X(Ø)
70 GOTO 2Ø
```

RUN this program, and you will see the results of changing the paddle or joystick settings. You will also see the results of pressing the push-buttons. You may note that the fourth push-button may give an anomalous reading before you press the button for the first time. After pressing the button, however, the readings should be normal.

HOW TO MAKE YOUR OWN JUMPER WIRES

If you have to make your own jumper wire, you will have to make sure that there is enough bare wire beyond the insulation to make good contact in the "JUMPERS" socket. We recommend that you leave about 3mm (1/8") bare wire. If you do not have access to an insulation stripping tool, carefully cut the insulation 3mm back of the end of the wire, using a sharp razor blade. Cut around the entire circumference of the insulation, **WITHOUT NICKING THE WIRE.** Pull off the insulation, and you have one end of your jumper. Repeat for the other end.



REMOVING THE PADDLE-ADAPPLE

As previously mentioned, the adhesive is quite agressive. Removing it is possible if you follow a few simple hints. First, you should cut the foam tape using a piece of fine string (e.g. dental floss), using a sawing motion. To replace it, use some double sided foam tape. If you cannot get some locally, you may order a die-cut piece from us. Send a self-addressed, stamped envelope (or IRC) and 25¢ to us at the address shown under warranty information below.

To remove the adhesive residue from the case of the computer, **DO NOT USE SOLVENTS!** Just rub the area with your thumb, and the residue should come right off.

IF YOU HAVE PROBLEMS

1) Check that the 16 conductor cable is plugged into the computer correctly. Pin #1 (next to the beveled corner) should be on the lower right. Also it is easy to "offset" the plug in the socket, so that some pins are plugged into thin air, and you don't expect it to work under those conditions, do you?

2) While you are at it, check the plugs on your paddles or other devices. Are they plugged in upside down, or "offset"?

3) Be sure that you did not fold a pin over as you plugged your device into the **PADDLE-ADAPPLE**, or the connector into the **GAME I/O** socket. ALL pins should be in the socket.

4) If you are in mode #1, do you have any jumpers plugged into the third and/or fourth set of holes in the "JUMPERS" socket? You shouldn't.

5) Mode #2 users; is the slide switch in the "A" position? It should be.

6) Re-read the paragraph about "INTERFERENCE". Does this apply to you?

7) If you break a pin on the 16 conductor jumper cable, all is not necessarily lost. If you broke pin #1 (+5 volts) or pin #8 (ground), you can reverse BOTH ends of the cable (i.e. plug pin #9 into socket pin #1). **BE SURE** to do this on both ends. If you break a different pin, examine the schematic in the APPLE manual. If, for instance, you broke pin #5, and you never use the $C040 strobe, why worry about it? If worse comes to worse, you can always buy a replacement cable at just about any electronic supply store.

WARRANTY

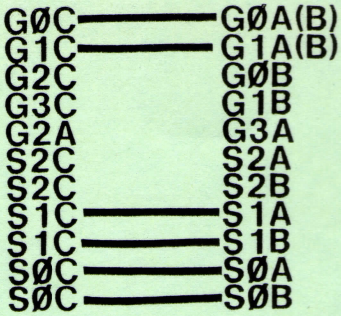
The **PADDLE-ADAPPLE** is warranted for 6 months on parts and labor. If you have any problems within this time, return it postpaid to us, and we will, at our option, repair or replace it. Be sure to send dated proof of purchase when you return it. Our address is:

SOUTHERN CALIFORNIA RESEARCH GROUP

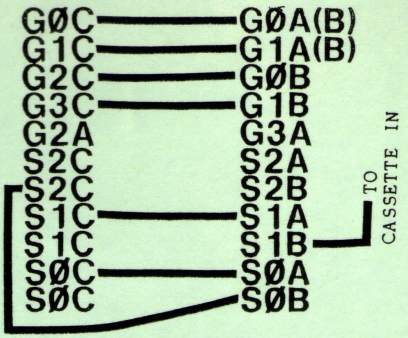
Post Office Box 593

Moorpark, CA 93020

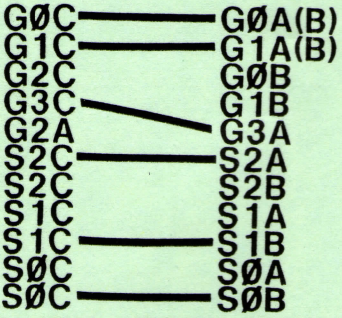
(805) 529-2082



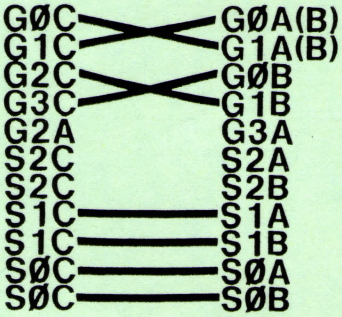
NORMAL CONFIGURATION TO SWITCH BETWEEN TWO DEVICES.



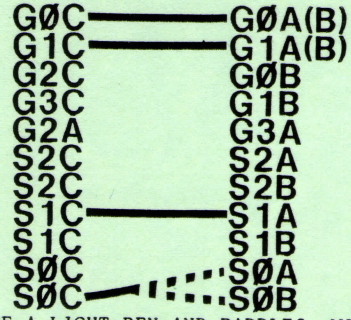
NORMAL CONFIGURATION TO USE TWO DEVICES SIMULTANEOUSLY. KEEP SWITCH ON "A".



BPI USERS: PLUG BPI DEVICE INTO "A", PADDLES OR JOYSTICK IN "B". KEEP SWITCH ON "B".



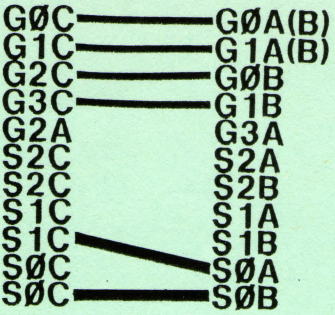
HOW TO EXCHANGE X AND Y AXIS.



TO USE A LIGHT PEN AND PADDLES, WIRE THE SOCKET LIKE THIS, KEEP THE SWITCH ON "A", AND MOVE THE JUMPER REPRESENTED BY THE DOTTED LINE TO SWITCH DEVICES.

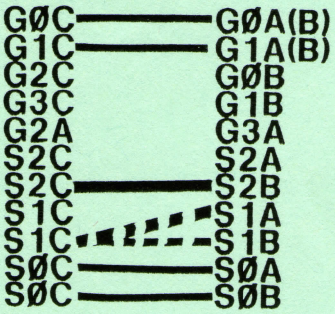
THIS CONFIGURATION WILL MAKE SOCKET "A" AN EXACT DUPLICATE OF THE GAME I/O SOCKET IN THE COMPUTER, ASSUMING THE SWITCH IS IN POSITION "A".

SUPPLEMENTAL INSTRUCTIONS



for the game ONE-ON-ONE
by ELECTRONIC ARTS

NOTE: In some cases, it may be necessary to go from SØA to SØC, & from SØB to S1C.



for the POWER PAD
by
CHALKBOARD

Assuming CHALKBOARD is in "B", keep switch on position "A". Change between devices by moving jumper between S1C and S1B for CHALKBOARD, and S1C and S1A for other device. (use one of the long jumpers packed in small envelope)

SCRG

Paddle-Adapple

I/O ADAPTOR FOR APPLE II, //e, & FRANKLIN for paddles & joysticks with 16 pin connectors

*COMPATIBLE WITH ALL SOFTWARE

*COMPATIBLE WITH MOST GAME I/O DEVICES

*GIVES YOU FOUR PUSH-BUTTON INPUTS

*UNIQUE "JUMPERS" SOCKET ALLOWS YOU TO CONFIGURE THE PADDLE-ADAPPLE TO MEET YOUR NEEDS

*SELECT ONE OF TWO DEVICES PLUGGED IN
OR
*USE FOUR PADDLES SIMULTANEOUSLY

*ACTS AS A HANDY "EXTENSION CORD". NO NEED TO OPEN YOUR APPLE TO CHANGE DEVICES

*BPI USERS CAN HAVE BPI DEVICE AND PADDLES PLUGGED IN SIMULTANEOUSLY

*EXCHANGE X & Y AXIS ON JOYSTICKS

*SUPPORTS SHIFT KEY MODIFICATION

*ALL STROBES, ANNUNCIATORS, AND POWER AVAILABLE AT BOTH SOCKETS

*SIX MONTH WARRANTY

*SUPPLIED WITH CABLE (18 INCHES)

*ADHESIVE FOAM TAPE SUPPLIED

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