Using Super NES controllers with a NES

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At the time of writing, this redirects to the real location which is:

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sites, FTP sites and the like. But it is best to simply link to the document

on my web page, as this means that you automatically pick up any changes made.

Please contact me if you have any comments, suggestions or questions about

this document.

Revision History

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0.1 5-Apr-98 First release.

Introduction

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The Super NES has different controllers to the NES. Compared to the original

NES ones, the Super NES controllers are more rounded and have four extra

buttons. If you are used to the Super NES controller, you may well prefer it

to the NES one. If only you could use the more comfortable SNES controller to

play games on the NES...

Well, you can. Super NES controllers use a different type of connector than

NES controllers, so you cannot simply plug a Super NES controller directly

into a NES. However, apart from this the Super NES controller is backwardly

compatible with the NES. By making a simple adapter, you can connect your SNES

controller to the NES.

When using the SNES controller to play NES games, the D-pad, Start and Select

buttons function as you would expect. SNES button Y is equivalent to NES

button B, and SNES button B is equivalent to NES button A. The other buttons

(A, X, L and R) have no function on the NES.

Adapter Options

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There are several ways to make an adapter. Some possibilities:

· Buy controller extension cables for both the NES and SNES. Cut each in half

and connect the NES controller plug lead to the SNES controller socket lead.

The advantage of this is that you don't need to modify your controller.

· If you have an old broken NES controller, you can cut the cable off (or

open up the controller and desolder the cable from inside), and use that

along with a cut-up SNES controller extension lead.

· If you have a spare SNES controller, you could remove the cable and replace

it with one which has a NES connector on. The disadvantage of this is that

you cannot use the SNES controller with a SNES any more, and it is specific

to a single SNES controller.

You get the idea. Below I will describe how to make an adapter using two

controller extension cables. These should be available cheaply in video game

shops. The procedure if you are doing it another way should be very similar.

Some Basics

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You need to know which pins go where on the NES and SNES controllers, so

examine the diagrams below. The pin number is next to the corresponding pin.

NES controller connector pin definitions:

\_\_\_

| \

1 | O \

| \

2 | O O | 5

| |

3 | O O | 6

| |

4 | O O | 7

+------+

Super NES controller connector pin definitions:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| | \

| O O O O | O O O |

|\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_/

1 2 3 4 5 6 7

Which Pins to Connect with Which

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See the note about wire colours below!

SNES pin wire colour\* Function NES pin wire colour\*

-------- ----------- -------- ------- -----------

1 white Vcc (+5V) 5 white

2 yellow CUP 2 red

3 orange OUT0 3 orange

4 red D0 4 yellow

7 brown GND (0V) 1 green

\* the wire colours in the table are only applicable to original Nintendo

controller cables. If you are modifying extension cables, the colours will be

different. Basically: ignore the colours in the table, just pay attention to

the pin numbers.

SNES pins 5 & 6, and NES pins 6 & 7 are not used by standard controllers. NES

pins 6 & 7 are definitely used by the NES Zapper, and may also be used by e.g.

the Power Pad or Power Glove. The Super NES Super Scope uses SNES pin 6.

There is no need to connect these remaining two pins, as no SNES peripheral

will function as a NES Zapper, for example.

How to make the Adapter

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This procedure may require some soldering, and is quite fiddly.

1. Cut both the NES controller extension and the SNES controller extension

cables in half. Put the halves with a NES socket and a SNES plug at the end

to one side; they are not needed.

2. Using a sharp knife such as a craft knife, carefully strip the outer cover

from the ends of the NES plug lead and SNES socket lead. (The outer cover

is usually black or grey.) Two centimetres should be sufficient. Be careful

not to damage the multi-coloured wires inside.

3. Carefully strip the end centimetre or so of insulation from each of the

seven wires which were just exposed. To stop the ends from getting frayed,

it is best to twist the exposed metal and tin it with solder after

stripping the insulation from each one. Do the same thing for the other

cable; there are 14 wires to strip and tin in total.

4. Now you need to determine which wire goes to which pin. You will need to

use a multimeter or continuity checker for this. Connect one terminal of

the multimeter to a pin of the connector, and in turn touch the other

terminal to each of the bared wires. For the NES connector, you will

probably need to insert a piece of ridid wire into each pin to make

contact; touch the terminal to the other end of this wire.

Make a note of which wire colour corresponds to each pin, for both NES and

SNES connector cables. Work out which colours to connect to which, by

referring to the table in the "Which Pins to Connect with Which" section

above.

5. Now simply connect the right wires. It is best to solder them together, and

use insulating tape around each joint. Alternatively, if you have stripped

enough insulation from each wire, you can try twisting the two ends of each

pair of wires together. However the connections made like this will not be

as reliable, and I do not recommend it. Insulate the ends of the remaining

two wires on each side.

A better solution is to buy some male and female connectors, for example

9-pin D connectors. If you put a connector on each end of the four cables

(including the cables which you put to one side in step 1), you can swap

them over if you ever want to use a plain SNES or NES extension lead in

future.

6. Double check that you have connected the correct wires. You can verify this

with a multimeter. Now you can plug the adapter into your NES, and a SNES

controller into the other end of the adapter. If everything has gone okay,

you should be able to use the SNES controller to play NES games.

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