

# DIY Joystick/Mouse extension cord

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By solo761

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Gamepads from previous article have pretty short cable, unless you're going to have computer in your lap. All in all not really practical. So, next step is making extension cord.

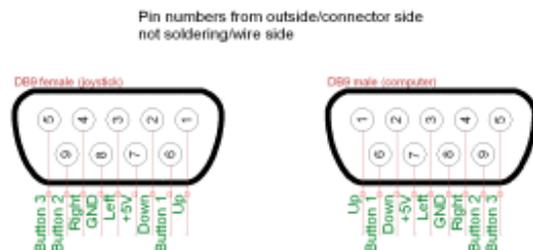
Basically it's simple, connect corresponding pins on two connectors (pin 1 from one to pin 1 from the second and so on). Connectors are not the problem, you'll need one female and one male DB9 connector. They're pretty standard thing in electronics shop, and there's bunch of them on ebay.

The real problem is the cable. Joystick connector has 9 pins, that means we'll need (at least) 9 pin cable, that's where I got stuck. Here in Croatia there aren't that many electronics shops and I haven't found similar cables in shops that sell tools and similar stuff. Problem is that they're kinda pricey. I've found 10 wire round cable but price was almost \$3 per meter (one meter is 3.28 feet, you can round it to 3 feet for easier math :) ). I planned to make two cables of at least 2 meter in length (cca 6 feet), that would make \$12 just for the cable. There are cheaper ones, but they're flat cables and that doesn't look that practical.

So I came to idea to use LAN cable. You can find it almost anywhere (I think I newer saw one on bakers shelf, but I'm not sure :D ). Price is a lot cheaper, when converted to dollars it's about 20 cents per meter. I even saw premade one, 30 meters in length (cca 50 feet) for less than \$3. All in all perfect! ... except one little detail... LAN cables have 8 wires and we need 9, we're short one wire. But all is not lost, depending on computer and what we connect to this cable all wires are not used. So, time for little checkup, here's the picture of connector and pins from previous post

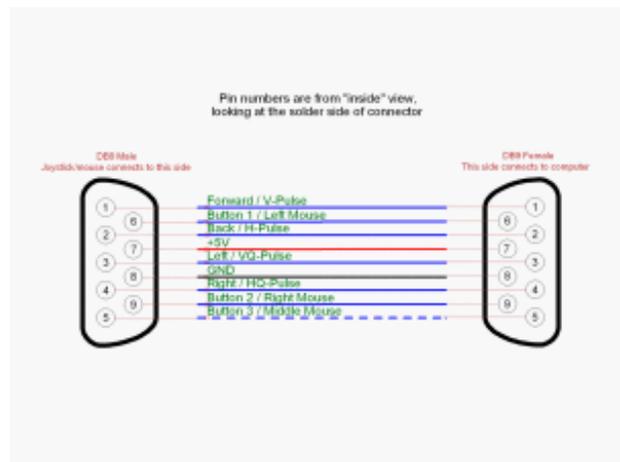
I never saw joystick with three different buttons, or game that supports it, that makes pin 5 the candidate for booting out of the picture. Luckily in case of the mouse pin 5 is middle mouse button and same as mouse so far I haven't seen it used anywhere. That settles it, pin 5 is going out of the picture. This is how I'll connect the wires

Corresponding pins need to be connected (pin 1 to pin 1, pin 2 to pin 2 and so on), and we leave pin 5 unconnected. Those with eye for details might notice that pin numbers and



Pins and their functions

their positions in connector for male/female connectors don't match in this and previous picture. But that's because of point of view. In previous picture we look at the connector from the "outside", and in this from the "inside", side where we'll solder wires. Pin numbers and their functions are the same in both pictures and that's the important part. Nevermind the "looks", numbers are important and they're noted on each connector. When you look at let's say, male connector from solder side pin 1 would be on the right, and on the female connector it would be on the left. That's how you decide where to solder, schematic is just to tell you to connect pin 1 on one connector to pin 1 on the other connector, check on real connectors where exactly is pin 1.



Extension cable schematic

And that's it. Extension cable done for probably less than \$4 a piece. Depends on connector price, if you don't mind waiting you can get them from ebay for about \$4-\$6 for 4 pieces (2 male, 2 female) and their shells. In this case cable is the cheapest part.

Just one more thing. Lately CAT6 LAN cable is getting really popular. In a nutshell it's LAN cable that is guaranteed to work in gigabit networks over longer distances, but older CAT5 cable is better suited for this extension cord. CAT6 has better shielding than CAT5, that's why it can be longer and still work at gigabit speeds, but downside is that it's more rigid than older CAT5. If you use CAT6 cable it will work the same, there won't be any problems, it just isn't so flexible as CAT5 cable.



Almost finished cable

Another potential problem is the nature of LAN cable itself. Original joystick/gamepad/mouse cables have stranded wires, that makes it flexible, easier to bend. LAN cable has only one wire per one conductor. This means that it isn't as flexible as original cable. For it's intended use this is not a problem, it's placed once and stays there for a long time. But as an extension cord it's supposed to bend and move around. I don't think this will be real problem, just don't overdo it, like tying it in a knot, bending 180° and like as there is a chance one of

the wires could break. Stranded conductors are more resilient in this regard. But if you use it normally there won't be any problems. And if it does brake it's easy to make another, just resolder connectors to new cable and problem solved. At least the cable is cheap :).