

## Connecting a Sony EVI-D70 to a PC via USB Adapter for Control Using the EVI-D70 Commander

The Sony EVI series cameras support both the RS-232 and RS-422 interfaces. If your computer has an RS-232 serial port (DB-9 Male), you can buy a Apple/Mac Serial Cable (MiniDin8 Male to male), cut it in half, and terminate the cut end with a DB-9 female connector. Or, you could terminate it with an RJ-45 and use a CAT-5 patch cable and a coupler to extend it. You would then need to have an adapter at the computer end.

If your computer does not have an RS-232 port, you will have to purchase a USB-to-serial. In that case, you will be better off using the RS-422 interface as it is more robust, supports runs up to 1500 meters, and is simpler to interface since the camera comes with an RS-422 connector.

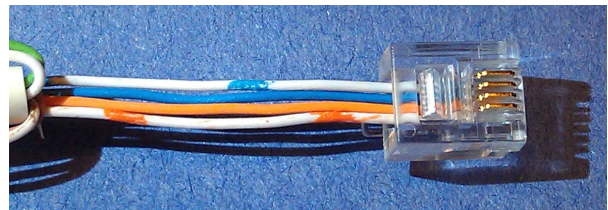
"RS-422" is the name of a specification. You will find these adapters at a wide variety of prices. All of them do the same thing, you don't need anything fancy. Especially do **not** buy one where the USB plug is mounted on the adapter because it may not physically fit if there is something plugged into an adjacent port. Also, a tug on the cable can break the USB connector loose from the motherboard. Buy one that plugs into the computer with a cable. These adapters should cost \$20 or less.



Assuming you purchased one like this, crimp an RJ-11 telephone plug on the end of your Cat-5 control cable as follows:

With the clip away from you and the wires entering from the left, pin 1 is on top. There are 6 wire positions on the connector, but the top and bottom ones may not have contacts. Crimp the wires as follows (This is not how you would wire it for telephone service):

- R+ Pin 2 White/Blue
- R- Pin 3 Blue/White
- T- Pin 4 Orange/White
- T+ Pin 5 White/Orange



It is recommended that you don't remove any more sheath than necessary. I have stripped it way back to show the wire colors.

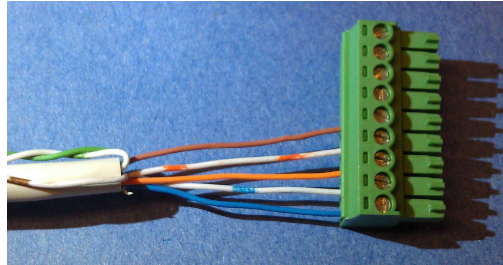
Plug it into the jack on the RS-422 side, and move the slide switch to that side.



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At the other end, take the green connector that comes with the camera. With the screws toward you and the wire entering from the top, the terminals are numbered 1-9 left to right. Connect control cable as follows:

T+ Pin 1 Blue/White  
T- Pin 2 White/Blue  
R+ Pin 3 Orange/White  
R- Pin 4 White/Orange  
Gnd Pin 5 Brown/White (Optional)



**R** means receive, and **T** means transmit.

**White/Blue** means a white wire with a blue stripe.

**Blue/White** means a blue wire with (perhaps) a white stripe.

Upon close examination, you will discover that the polarity seems backwards, i.e. T+ connects to R- instead of R+. This is not an error.

Examine the bottom of the camera, you will see four tiny slide switches. The default positions are all down (toward the back of the camera). To enable RS-422 operation, move switch 3 up, the others should remain down. Do this while the camera powered off.

Plug the green connector into the camera, as well as power and video.

When you connect the adapter to your PC, the driver should automatically install from the Internet. You shouldn't need the CD that came with the adapter, except for the documentation. Download, install, and run the D70 Commander software and you should be operational. You will know immediately if it is because the control panel with the yellow square appears, otherwise you will get an error message.



Pin 5 on the green connector is ground. Since the camera will probably be plugged into a different power circuit than the PC, electrical noise can be introduced into the system reducing it's reliability. Sony recommends connecting the ground. To do this, connect the Brown/White wire to pin 5 (as shown in the photograph), and at the PC end, leave the Brown/White wire long so that you can ground it to the PC. You could use a short 4-40 screw into an unused hex post, like where a VGA connector thumbscrew would go.