

RJ Serial

The serial connection system that I have been using for about 20 years has proven to be a real asset in connecting a wide variety of devices to both the Jornada and the LX. The basis of this system are six conductor RJ-11 "modular" telephone type cords which provide an "automatic" null modem (or not) connection to a wide variety of serial connectors.

In the image below all of the connectors shown use telephone type six pin "RJ" connectors, wired in a way that provides significant flexibility. Most of the connectors below that were used with the LX are now serving with the Jornada.



The second part of the system are DB-9 (or 25) connectors with modular RJ-11 (6 or 8 connector) DB shells. These can be found in most electronic shops, but are generally either wired pin to pin or with a pigtail that goes only to a single pin that you decide in which pin position to plug it into. The following requires a bit of cutting, stripping and soldering.

I wire these as follows. NOTE! since I have found a great deal of discrepancy in how RJ connectors are numbered and colored so the following is a "Back side (wire lead side) view" of an RJ-11 jack.

While the colors accurately represent the traditional wire "pairs" it is extremely common for the sequence to be reversed, which is OK for phone connections, but not for serial connections.

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RJ-11 as viewed from
the connection lead "Back (wire lead) Side"
of an "DB-RJ shell" jack
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+-----+
white  |  --  |
black  |  --  ++
red    |  --  |
green  |  --  |
yellow |  --  ++
blue   |  --  |
+-----+
```

Then wire the connections to a DB-9 or other serial connector as follows.

db-9	RJ-11	DB-25
-----	-----	-----
1,6,8	black	5,6,8
2	red	3
3	green	2
4	yellow	20
5	white and blue	7

The six conductor telephone type cords should have six pin RJ-11 modular connectors attached so that the connections on each end are "flipped" after crimping. In the case of the LX connector, after soldering the wires to it, I crimped a modular "plug" on the other end of the wire to keep size to a minimum.

"Flipping" means if you hold the ends side by side so you can see the wire colors through the clear plastic, the colors in the connectors will connect to the pins on each end in reverse order.

That's all there is to it. I originally used a single 10 pin LX serial (shown in the picture) connector with a few inches of six conductor telephone cord ending in a 6 pin telephone type RJ-11 modular connector, but after the camera entered my life, I made a similar cord that included a 4" cord and 1/8" audio plug (from a dead stereo headset) in addition to the HP serial connector and modular RJ-11 crimp. This allows me to start a download using Itoh's LXDC software and put the connected units into the belt pouch. Both the camera and computer automatically shut down after the download.

As for the RJ-11 to DB9 adapter shown in the picture, I was able to cut it's size in half by removing the metal shell from the DB9, then cutting the RJ-11 portion of the plastic shell off and gluing the essential pieces back together. A good molding company could probably cut that size in half again.

The "Carry Kit" shown above includes a 6pin modular coupler and a six foot section of six conductor telephone cord. The cord serves both as a serial cord and as a modem telephone connector.

In addition to the DB-9 unit shown, I have an RJ to DB-25, an RJ to Mac Mini Din plus mini DB-9 and DB-25 gender changers that gives me full null modem connection capability at a fraction of the size and weight of most cables.

I have also replaced the standard serial connectors on a variety of serial devices such as the Tripmate, the X-10 CP290 and other serial devices with an RJ-11 modular crimp connector to provide a simple easy small connection to the LX. Not only the LX, but each of the desktop computers I sit at has at least one RJ-11 cable on the desk next to the keyboard for a variety of uses including LX file transfers.

Coupla notes. The beige modular RJ "End to End" connectors must have six pins and be wired so the pins on the same side of the connector are connected to each other. That provides a continuity of the "null modem" wiring if one or more cables are connected in series. I have successfully run serial with these connections in excess of 200' with no problems. It is also easy to customize connectors to directly connect printers and modems with the same modular cables.

In addition, I carry a short 1" section of "unflipped" telephone cable with modular connectors plus an additional "End to End" connector. When this is included in any cable connection, it serves to effectively remove the "nul modem" effect of any cable/connector combination.

However, the above will system will work almost anywhere *except* for an ActiveSync serial connection which apparently actively uses all of the flow control signals to maximize serial throughput.

Finally, no picking nits about the RJ-"11" description. While I know that there is a different number designation for each "RJ Modular" connector depending on the number of pins and other configuration issues, my experience has shown me that most of the world only responds to "RJ-11"