

EsdTest RS232 to Ethernet converter installation instructions (10/20/2006)



1. Shipping list for each test station:
 - a. 1 combo meter (with power on pin 9 option, and Ethernet/wireless option)
 - b. 1 card reader (with 12V power on pin 9 option)
 - c. 1 RS232 to Ethernet converter (with power on pin 9 option)
 - d. 1 Power over Ethernet converter set (AC to 45VDC, and 45VDC to 12VDC)
 - e. 1 100' 8 pin cat5 Ethernet cable (length may vary on customer requirement)
 - f. 1 6-12' 8 pin cat5 Ethernet cable
 - g. 1 3-6' DB9F to DB9F RS232 serial cable
 - h. optional loopback test connector
2. If the Power over Ethernet (POE) option is included, then
 - a. plug the Ethernet converter RJ45 connector into the POE receiver box "LAN-OUT" connector using the supplied 24" cat5 cable.
 - b. Set the receiver box for 12volt output,
 - c. and plug the receiver box power output jack "DC-OUT" into the Ethernet converter power input jack using the supplied power cable.
 - d. Using the supplied 100' (or any length to 350') cat5 cable connect the receiver box "P+DATA" jack to the POE transmitter box "P+DATA" jack.
 - e. Connect the POE transmitter box 48V AC-DC adapter to its own "48V" jack.
 - f. Run the 6' cat5 cable from the transmitter "LAN-IN" jack to the company lan jack or an Ethernet hub/switch.



If the Power over Ethernet (POE) option is not provided, connect the Ethernet converter AC (to 12VDC) adapter to the Ethernet converter power input jack. Plug the card reader into the Ethernet converter serial port 1. Do not connect the card reader to a power source, since it will receive power over pin 9 from the Ethernet converter.

3. Plug the Combo meter into the Ethernet converter serial port 2. Do not connect the Combo meter to a power source, since it will receive power over pin 9 from the Ethernet converter.
4. When powered, there should be LEDs displayed on the POE boxes, the RS-232 to Ethernet converter, and the card reader.
5. Ether-Serial Link installation:
 - a. At present, the floppy disk that ships with the converter may not have the latest version (ver 4.09 or higher of Lava Ether Link Manager, and ver 4.09 or higher of firmware). If not, then download the latest version of the Lava ESL Dual RS232 port installation software from <http://www.support.lavalink.com/>. Follow the hardware and software installation instructions contained in the Lava Ether-Serial Link Quick Installation Guide, or the ManualD01.pdf file, which is outlined below:
 - b. Plug the Ethernet cable into the Ether-Serial Link and power it up
 - c. Open the Lava Ether Link Device Manager
 - d. Click on Help, About Manager, and make sure you have ver 4.09.00 or higher. If not then reinstall the newer version, and recheck the version number.
 - e. Configure the Lava Ether-Serial Link firmware
 - i. Right click on the Lava Ether-Serial Link item, select Properties, and make sure that the Rev code is 4.09 or higher is installed for firmware. If not then upgrade the firmware by referring to the installation manual, (typically by running Upgrade.exe to upload the firmware to the Ether-Serial Link..
 - ii. Set the IP address. Right click on "Lava Ether-Serial Link" Select Properties. If your LAN network has DHCP capabilities then click DHCP box. Otherwise "Auto Configure" may be your best bet (or refer to the manual) AUTO CONFIG - will load in the same operating parameters that are being used by the host PC, except for the IP address of the ESL unit, which MUST be entered manually, refer to the IP address of the Host PC (this is found in the Host Information section on the Properties page of the ESL device, and included for ref.) make the IP address of the ESL the same as the IP address of the Host PC, EXCEPT for the last numeric field, which must be unique (number between 0 and 255), and not in use or assigned to some other device on the LAN. Click OK
 - iii. Set the Serial Port Parameters:
 1. Click on Lava Ether-Serial Link in the left panel. The Serial Ports (1 and 2) will be shown in the right panel. Right click on serial port 1, Select Properties and select : Set 9600 baud, 8 data bits, no parity, 1 stop bit, no flow control. This sets the default settings of the serial port/s, to the ESD requirements. These default settings are used as initial operating settings when the Serial COM:n port is opened (see section after next).
 2. Right click on serial port 2 do the same thing (i.e Click Parameters. Set 9600 baud, 8 data bits, no parity, 1 stop bit, no flow control).
 - f. Activate the ports. Right click on "Lava Ether-Serial Link" Select Properties. Click "Activate All" and write down the com port numbers that the software assigns to the serial ports.
 - g. Configure the drivers.
 - i. In the left panel of the Lava Ether Link Manager, click on "My Computer" (not the one on the desktop)
 1. Right click on one of the newly created Lava Com:n ports. Select Properties. Several tabs will be available: Port Properties, Network Properties, and Driver. These will need to be set and reviewed. Note Serial Port 1 will have been activated as a COM:x , Serial Port 2 will

have been activated as a COM:y, where x,y are available numbers that are assigned. These numbers can be changed if required to any non assigned number from 1 to 255. Setup each COM:n for the following operating parameters:

2. Port Properties : use 9600,8,N,1,None. Press OK to submit the entries. Re-enter to verify that the values are now in place.
 3. Network Properties : Check that the IP address is correct. Port number will be 4098 or 4097 (for Serial1 or Serial 2).
 4. Press the ADVANCED button : check ON the COMPATIBILITY (it is on by default) check ON PERSISTENT CONNECTION (it is off by default)
Change the time period to 5 seconds (it is at 20 by default)
 5. Press OK to submit and exit the page. Re-enter the page to verify value settings.
 6. Driver : Enter this page to review that the DRIVER being used by this COM:n port is as required (ie 4.09.0.0 or higher).
- h. Reboot. The Lava Manager utility can now be closed, if both Serial Ports are setup as Com:n ports on the PC. At this point it is best to Reboot the PC. The reboot is needed under Windows 2000 to ensure that the COM:n ports are in the device registry.
 - i. After the reboot use the Lava Manager utility to quickly verify that all settings are as required. You can press the CANCEL button instead of the OK button if there are no changes entered into the setup pages.
 - j. NOTE : re firewalls and Virus programs. You will need to allow exceptions in the XP firewall for the Lava Manager/Driver to operate, as well as HyperTerminal and the ESD application program (when HyperTerminal and Application are using the Lava Driver). Some virus protection software may need to be set to permit the above programs to operate with network resources. As a quick test You can temporarily turn off the Firewall and Virus protection, to verify that this is the case. However, it is not recommended to operate without the firewall or virus protection - if the LAN has access to the Internet.
6. Test the connection on the server by clicking Setup, Programs, Accessories, Communications, HyperTerminal) and create a new HyperTerminal session. Name it CommX where X is the number of the first new comport that you wrote down in the previous step. In the "Connect using" box, choose that com port number. Click OK. In the port settings box enter 9600 baud, 8 data bits, no parity, 1 stop bit, no flow control, and click OK. Click File Save. With the card reader plugged into that com port connector, scan a card and the badge number should be displayed. Go to the "troubleshooting" section below if this is not displayed.
 7. If step 6 works OK, then take a small label, write the com port number on it, and stick it just above the DB9 serial port connector. Do this for all the ports – it will greatly aid in setting up the system.
 8. At this time there is a problem in the Lava firmware that requires the EsdTest program to bypass it's port status check. In the EsdTest program, click Setup, MultipleStations, and set the port check status interval to 0. The alternative is to use the LavaEtherLinkDeviceManager to place the port in the "RFC2217" mode, and use the HW group HW Virtual Serial Port redirector driver available free from http://www.hw-group.com/products/hw_vsp/index_en.html.
 9. Follow the "Multiple station" setup instructions in the EsdTest user manual to complete the installation.

Troubleshooting:

- If there are no LEDs displayed on the reader, then recheck step #2 & 3 above.
- If the card reader does not beep when the card is swiped, check the card.
- If the card is not displayed in step #6, then try the following. If a loopback test connector has been included in the system, use it in lieu of the card reader, to determine if the ethernet system is functioning properly. The loopback connector is a small DB9 connector with pin 2 connected to pin 3. It also has an LED connected to pin 9 so it should light up if power is on pin 9. The purpose of the loopback connector is to send back whatever it receives. Thus if HyperTerminal is connected as in step#6, any keys that are typed on the keyboard should be displayed in the HyperTerminal monitor window. Make sure you have the loopback connector plugged into the correct serial port because the first port on the Ether-Serial Link is on the bottom right side, not the left side.
- Note that if installing multiple ethernet converters, and not using DHCP, the default IP of the converter will have to be changed to insure that it is unique. The subnets and the subnet mask must agree with the server computer (in the LavaEtherLinkDeviceManager right click on the LavaEtherSerialLink item and view the host information at the bottom of the window), or the ports will not open. Thus it is probably best just to assign an IP that uses the first 3 sets of your Sever computer's IP address, and just assign it a unique 4th set. (For more info see Subnet configuration with the Ether-Serial Link in the AdvancedFeaturesA08.pdf file).
- In the Lava Ether Link Manager, click on Help, About Manager, and make sure you have ver 4.09 or higher. If not then deactivate the ports and reinstall the newer version,
- In the Lava Ether Link Manager, right click on the Lava Ether-Serial Link item, select Properties, and make sure that the Rev code is 4.09 or higher. If not then upgrade the firmware by referring to the installation manual.
- If you still can not send and receive a character in Hyperlink, try setting the Ether-Serial parameters using the WAN method in the ManualD01.pdf section "Configuring Ether Link network settings using a web browser". Find the IP number of the Ether-Srial Link in the Lava Ether Link Device Manager, right click on the Lava Ether-Serial Link item, select Properties, and write down the IP Address. Enter this into your web browser URL window, for example: <http://192.168.0.35/>. Check that all the previous baud and port settings are set correctly in the Ether Link web browser pages.
- If Hyperterminal still will not display anything, then reboot everything – the computer and the Ether-Serial converter (i.e. unplug it's power cable for 5 seconds and then reconnect it)
- If you can only get one port to work, and not the other, your computer might be reserving the number, so try renaming the com port number to a higher unused number with device manager.
- If you are still having trouble, or have gotten totally frustrated or confused, then call the friendly folks at the Ethernet converter tech support line at 416-674-5942 (9AM – 5:30PM EST).
 - Ask for Lewis Tracker if possible
 - Mention that this is regarding installation of an ESD static control wrist and foot strap tester system
 - Explain that you are having trouble sending characters to the Ether-Serial Link with MS Hyperterminal while testing with a loopback connector