

## DVT Series 500 Ethernet to Serial RS-232 Converter

This document out-lines setting up the DVT Ethernet to Serial Converter (B&B Electronics: Model DE-311). The objective is to configure the device to provide a serial RS-232 connection to the Series 500 SmartImage sensor using Ethernet. This is accomplished by configuring three parameters in the converter unit; the SmartImage Sensor's IP address to connect to, the SmartImage Sensor's TCP/IP port to connect to, and the converter's communication mode (*Raw-connection (TCP Server) mode*).

This document is designed to ease converter setup with a DVT SmartImage sensor, if you have any questions please refer to the general NPort Express User's Manual that came with serial converter.

### Connect to Converter Serially

In order to configure the converter you will need to establish a serial connection to the converter via a terminal program. It is recommended to use the PComm Lite terminal supplied with the unit. Connect the appropriate power, serial cable and Ethernet cable to unit, and set the Dip Switch 1 on the converter to the ON position. Establish a communications link to the converter using the PComm terminal emulator with the following parameters: baud rate: 19200, Data Bits: 8, Parity: None, Stop Bits: 1, Flow Control: None. Set the terminal type to VT100.

- 1) Connect power, serial, and Ethernet cables to unit.
- 2) Set dip switch 1 on the converter unit to the ON position.
- 3) Open PComm Terminal emulator from the Start|Programs|PComm Lite menu.
- 4) Select Open from the Port Manager menu within PComm.
- 5) Set the baud rate to 19200 in the Communication parameters tab.
- 6) Set the Terminal type to VT100 in the terminal tab.
- 7) Hit OK to connect to the unit serially.
- 8) You will see the following: `Console terminal type (1: ansi/vt100, 2: vt52)`  
: 1. Hit Enter.
- 9) The following menu scene will come up.

```
MOXA NPort Express V1.04
-----
[serverConfig] OP_mode Serialport Monitor Ping Restart Exit
Config server settings|
Enter: select ESC: previous menu
```

## Set TCP/IP Address and Operating Mode of the Converter

First determine if the converter's IP address and subnet mask have been assigned. This is accomplished by using the arrow keys to select the *serverConfig* menu.

If the IP Address is set to a number other than 192.168.127.254 then a DHCP server has set the converter's IP address and subnet mask.

If there is no DHCP server on the network, you will have to manually set the IP address and subnet mask of the converter. If you have any questions, please ask your system administrator. To set the IP address and subnet mask, use the arrow keys to select *IP Address* and *Netmask* (subnet mask) and change their values.

```
MOXA NPort Express V1.04
-----
[serverConfig] OP_mode Serialport Monitor Ping Restart Exit
Config server settings
ESC: back to menu Enter: select

Server Model          DE-311
Server Name          [NP16230
Serial Number        _16230

DHCP                  [Enable ]
Ethernet Status      _100M/Link
MAC Address           _00:90:E8:04:3F:66
IP Address            [192.168.1.131 ]
Netmask               [255.255.128.0 ]
Gateway              [192.168.1.245 ]

Password              [ ]
```

Next, set the Operating Mode to Raw Connection (TCP Server). To do this, press ESC key to exit the *serverConfig* menu. Then move over to and select the *OP\_mode* menu by using the arrow key and hitting ENTER. Finally under Application, hit ENTER to get mode options and select *Raw Connection (TCP Server)*.

```

MOXA NPort Express V1.04
-----
serverConfig [OP mode] Serialport Monitor Ping Restart Exit
Setup OP mode

ESC: back to menu Enter: select

Port Application More setting
01 [Raw Connection (TCP Server) ] [Select for more setting]

```

At this point, you have configured the converter for Ethernet TCP/IP communications. This means that you can connect to the system via telnet to get to the setup menus. This is accomplished by typing telnet <converter IP address> from the Start|Run menu.

### Set Serial and SmartImage Sensor Parameters in Converter

Now, we must set the desired serial parameters and let the converter know which SmartImage Sensor to connect to and which port of the SoftSensor to connect to. In the OP\_mode menu, select *More setting*, by using the arrow key and hitting ENTER. Here you can set the Destination IP address and the TCP port number to the IP address of the SmartImage sensor that will be used with your converter and the Ethernet port you wish to use (the default is port 4001).

```

MOXA NPort Express V1.04
-----
serverConfig [OP mode] Serialport Monitor Ping Restart Exit
Setup OP mode

ESC: back to menu Enter: select

Port Application +-----+
01 [Raw Connection (TCP S| TCP port      : [4001 ] |
| Destination IP addr : [192.168.0.246 ] |
| Inactivity time     : [0 ]ms |
| TCP alive check time: [7 ] minutes |
| Data packing(optional) |
| Delimiter 1 (Hex)  : [ ] |
| Delimiter 2 (Hex)  : [ ] |
| Force transmit     : [0 ]ms |
+-----+

```

To set the serial parameters, go to the *Serialport* menu. Change the serial parameters to your desired values.

```
MOXA NPort Express V1.04
-----
serverConfig OP_mode [Serialport] Monitor Ping Restart Exit
Config serial port settings

ESC: back to menu Enter: select

Port Number          1

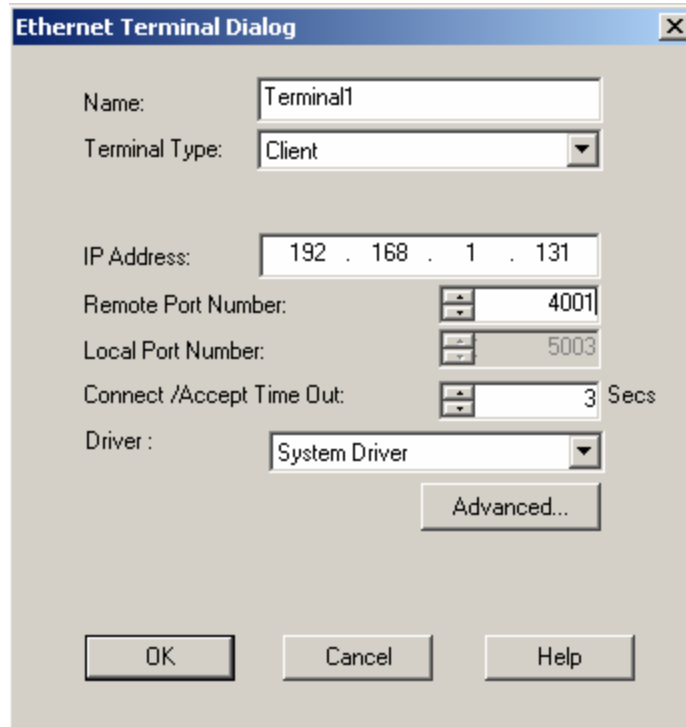
Baud Rate (bps)      [115200 ]
Parity                [None   ]
Data Bit              [ 8     ]
Stop Bit              [ 1     ]
Flow Control          [None   ]
UART FIFO             [Enable ]
```

That concludes the setup of the serial converter device. Hit the escape key and select *Restart* from the main menu to save these changes to the converter's flash memory. Set dip switch 1 of the serial converter back to the OFF position.

## Configure the DVT SmartImage Sensor

Now, we must set up the SmartImage sensor to communicate with the serial converter device over the Ethernet port configured above. This is accomplished within the Ethernet Terminal Controller in the I/O menu within the FrameWork user-interface.

- 1) Connect to the SmartImage sensor via FrameWork 2.4.
- 2) Open the Ethernet Terminal Controller in the I/O menu.
- 3) Create a new Ethernet Terminal by hitting the New button.
- 4) Select the new Terminal and hit the Edit button to bring up the Ethernet Terminal Dialog.
- 5) Change the terminal type to Client.
- 6) Set the IP Address to the IP address of the Serial Converter.
- 7) Set the Remote Port Number to the Ethernet port set in the Serial converter.
- 8) Select the appropriate terminal driver (typically DataLink).
- 9) Hit Ok.
- 10) Highlight the terminal controller and hit the Save button to save the controller to flash.
- 11) Hit the Start button to start the Ethernet Controller and begin communications.



## Test the Device

With the SmartImage sensor's and converter's parameters set, it is time to test the converter. Be sure the Ethernet Controller you created in FrameWork is running and the inspections are running. Connect to the serial converter via the Pcomm Serial Terminal Emulator with the serial setting you set on the converter (115200, 8, N, 1 as shown above) Note, to test DVT's DataLink communications, you must have an inspection with a DataLink string running in the Series 500 and the converter and SmartImage Sensor connected to the same Ethernet network.

For the complete user manual for this device, please visit the following link,  
<http://www.moxa.com/doc/manual/nport/nportexp.pdf>