Integration Note

Manufacturer:	Moxa
Model Number(s):	**NPort 5610 (Rev 3.1)**
Core Module Version:	4.0.1158 or Newer (4.0.1544 or newer if using multiple Moxa units)
Document Revision Date:	1/9/2013

OVERVIEW AND SUPPORTED FEATURES

The Moxa NPort 5610 is a rack mountable serial device server. One Ethernet connection the Moxa server provides 8 or 16 serial ports that can be used with the **g!** system.

THIS DEVICE SUPPORTS THE FOLLOWING FEATURES:

RS-232 Ports: The NPort 5610 includes 8 or 16 RS-232 ports that can be used with **g!** system via its Ethernet connection.

Rack Mount or free standing: The unit comes with both rack mount ears and rubber feet for mounting options.

IMPORTANT! THE MOXA 5610 USES RJ-45 PORTS FOR RS-232. THE RJ45 PIN OUT DOES NOT MATCH STANDARD SERIAL AND YOU MUST MAKE CUSTOM RJ45 X DB9 ADAPTERS. SEE NPORT RJ45 X DB9 PIN OUTS BELOW.

INSTALLATION OVERVIEW

1. During the rough-in phase, pull Cat5 from the NPort location back to the System Enclosure.

2. Also during rough-in, pull Cat5 from each serial controlled device back to the location of the NPort. Terminate and test all Cat5 connections.

3. Configure the NPort using its front panel display, see **NPort Configuration** below.

4. Connect the serial devices to be controlled to the NPort, see **NPort RJ45 x DB9** table below to make appropriate DB9 x RJ45 adapter.

5. Connect the NPort to the **g!** system electrically, see **Connection Diagram** below.

6. Configure the **g!** system to use the NPort serial ports, see **g! System Configuration** below.

NPORT CONFIGURATION:

The NPort out of the box is configured with a default IP of 192.168.127.254. This IP will need to be changed to work on the **g!** system network. This can be done using the front panel display and buttons as follows:

1. Power up the NPort. Once it has booted it will show its serial number and current IP address in the front panel display.

2. Press **Menu** once to access the main menu.

3. Press the **Down Arrow** once to show **Network Setting** then press **sel** to access the network menu.

4. Press the **Down Arrow** three times to show **IP address** then press **sel**.

5. Use the **Up and Down Arrows** to change the digits, the **sel** button to advance the curser, and set the IP to the desired address. In a g! system network we recommend setting the first NPort to 192.168.0.42, the second to 192.168.0.43 and so on.

   Note: Make sure that these addresses are not already in use prior to setting the NPort address.

6. Press **Menu** twice until the **save change** is displayed then press the **Up Arrow** to select **Yes**.

7. Press the **sel** button to reboot the system with the new IP address.

8. Open a browser and type in the IP of the NPort to get to its web configuration page.

9. From the main menu expand **Operating Settings** then click on **Port 1.**

10. In the **Operation mode** drop down box select **TCP Server Mode**, check the **"apply the above settings to all serial ports"** then click **submit** button. See first screenshot below.

11. From the menu on the left at the bottom click **Save/Restart** then click the **submit** button to save the changes and reboot the NPort. See second screenshot below.

12. Once the NPort reboots it should be ready to use with **g!**.

NPort Web Console - Mozilla Firefox

File   Edit   View   History   Bookmarks   Tools   Help

http://192.168.0.42/   Google

Getting Started   Latest Headlines   HomeLogic - Home En...   Welcome to UPS   Remote Central's File ...   PortForward.com - Fr...   Google   Yahoo!

MOXA   www.moxa.com

Main Menu
- Overview
- Basic Settings
- Network Settings
- Serial Settings
- Operating Settings
  - Port 1
  - Port 2
  - Port 3
  - Port 4
  - Port 5
  - Port 6
  - Port 7
  - Port 8
  - Port 9
  - Port 10
  - Port 11
  - Port 12
  - Port 13
  - Port 14
  - Port 15
  - Port 16
- Accessible IP Settings
- PPP User Table Setting
- Auto Warning Settings
- Monitor

Operating Settings

Port 1

Operation mode	TCP Server Mode
TCP alive check time	Real COM Mode
Inactivity time	RFC 2217 Mode
Max connection	**TCP Server Mode**
Ignore jammed IP	TCP Client Mode
Allow driver control	UDP Mode
	Pair Connection Slave Mode
	Pair Connection Master Mode
	Reverse Telnet Mode
	PPP Mode
	Disabled

Packing length	0 (0 - 1024)
Delimiter 1	0 (Hex) ☐ Enable
Delimiter 2	0 (Hex) ☐ Enable
Delimiter process	Do Nothing (Processed only when Packing length is 0)
Force transmit	0 (0 - 65535 ms)

TCP Server Mode

Local TCP port	4001
Command port	966

☑ Apply the above settings to all serial ports (Local listen port will be enumerated automatically).

[Submit]

Set Operation mode to TCP Server Mode

Check "Apply above…" box, then click submit

Done

NPort Web Console - Mozilla Firefox

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http://192.168.0.42/   Google

Getting Started   Latest Headlines   HomeLogic - Home En...   Welcome to UPS   Remote Central's File ...   PortForward.com - Fr...   Google   Yahoo!

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- Serial Settings
- Operating Settings
  - Port 1
  - Port 2
  - Port 3
  - Port 4
  - Port 5
  - Port 6
  - Port 7
  - Port 8
  - Port 9
  - Port 10
  - Port 11
  - Port 12
  - Port 13
  - Port 14
  - Port 15
  - Port 16
- Accessible IP Settings
- PPP User Table Setting
- Auto Warning Settings
- Monitor
- Change Password
- Load Factory Default
- Save/Restart

Save/Restart

The configuration has been changed. Please click to reboot with new configuration.

Warning!! Reboot will disconnect both serial and Ethernet connections and data maybe lost.

[Submit]

Done

NPORT RJ45 X DB9 PIN OUT:

The following tables show the pin out required to connect a serial device to the NPort.   Refer to the integration note for the specific device to be controlled to determine which pin out to use.
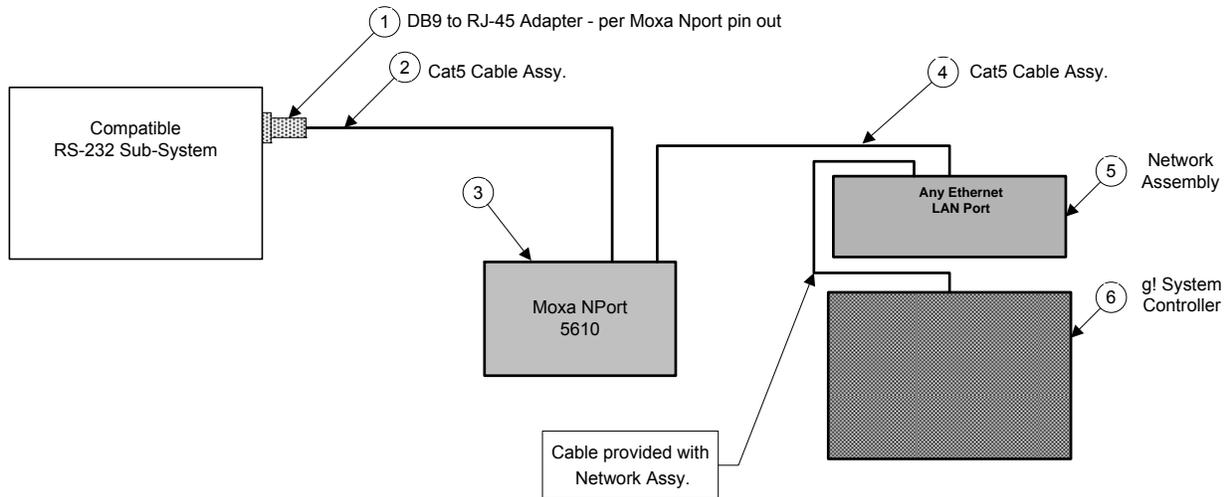
RJ45 NPort to DB-9 Male or Female Straight-Thru connector: This DB9 Male (or female) plugs into the majority of serial controlled devices and is the Moxa pin equivalent of a HA-CB-307/308.

RJ-45 Pin	Signal	DB9M/F Pin Number	Cat5 Color (T568B)
1	DSR	6	Orange/White
2	RTS	7	Orange
3	GND	5	Green/White
4	TX	3	Blue
5	RX	2	Blue/White
6	DCD	1	Green
7	CTS	8	Brown/White
8	DTR	4	Brown

RJ45 NPort to DB-9 Null Modem Female connector: This DB9 Female plugs into serial devices that require a Null Modem cable and is the Moxa pin equivalent to the HA-CB-328.

RJ-45 Pin	Signal	DB9F (Null) Pin Number	Cat5 Color (T568B)
1	DSR	4	Orange/White
2	RTS	8	Orange
3	GND	5	Green/White
4	TX	2	Blue
5	RX	3	Blue/White
6	DCD	1	Green
7	CTS	7	Brown/White
8	DTR	6	Brown

CONNECTION DIAGRAM:

① DB9 to RJ-45 Adapter - per Moxa Nport pin out

② Cat5 Cable Assy.

④ Cat5 Cable Assy.

Compatible
RS-232 Sub-System

⑤ Network Assembly

Any Ethernet
LAN Port

③

Moxa NPort
5610

⑥ g! System Controller

Cable provided with
Network Assy.

BILL OF MATERIALS FOR RS-232 CONNECTIONS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	DB9M to RJ45 Adapter	Installer	N/A	RS-232	DB-9 X RJ-45 Female	Make per pin out table above
2	Cat5 Cable Assy.	Installer	N/A	RS-232	RJ-45 Male X RJ-45 Male	Must terminate all 8 conductors
3	NPort 5610	Moxa	5610	RS-232 x IP	RJ-45 Female	
4	Cat5 Cable Assy.	Installer	N/A	IP	RJ-45 Male X RJ-45 Male	
5	Network Assembly	ELAN	NWA 18	IP	RJ-45 Female X RJ-45 Female	Use any available LAN port
6	g! System Controller	ELAN	Various (e.g. HC 12)	IP	RJ-45 Female	

g! SYSTEM CONFIGURATION DETAILS

The following sections provide details on configuring the NPort. The first step is to define the NPort as a device in the configurator to allow **g!** to access its serial ports. The second step is to define the serial ports to be used by devices in the **g!** system.

In the tables, the following items appear:

- o   "<Select>"   Select the desired item from the list (or drop-down) in the Configurator.

- o   "<User Defined>", etc.   Type in the desired name for the item.

1. CONFIGURING NPORT AS A DEVICE

This table provides settings used in the Configurator to setup the NPort as a device that **g!** can communicate with. This step is done on the **Input/Output tab** in the configurator.

Devices	Variable Name	Setting	Comments
Communication Devices	Name	<User Defined> (Default: **New Device**)	Rename as desired
	Type	**Ethernet**	
	Communication Type	**MOXA NPORT 5610 X Port**	Choose appropriate port number for X
	Location	<User Defined> (Not Required)	
	IP Address	<User Defined> (Default: **192.168.0.42**) (See Note 1)	
	Port	<User Defined> (Default: **80**)	

Notes:
  1. By default, set the NPort to 192.168.0.42. If you have more than one NPort, set the second to 192.168.0.43 and so on.

2. CONFIGURING A SUBSYTEM TO USE A NPORT SERIAL PORT

This table provides settings used in the Configurator to setup a subsystem to communicate using one of the NPort serial ports. This step is done on the tab of the configurator that the subsystem is configured on. For example, if using a security system with an NPort serial port, then configure the following on the security tab. Finish the configuration by referring to the appropriate subsystem integration note.

Devices	Variable Name	Setting	Comments
Communication Devices	Name	<User Defined> (Default: **New Device**)	Rename as desired
	Type	**MOXA 5610/5410 PORT**	
	MOXA 5610 Port	<select>	select the port # that the subsytem is connected to.
	Communication Type	<select>	refer to integration note for the subsystem to be connected
	Location	<User Defined> (Not Required)	

COMMON MISTAKES

1. Attempting to use an ELAN RJ45 x DB9 adapter. Moxa RJ45 serial ports use a unique pin out and are not the same as ELAN RJ45 serial ports. You must make custom RJ45 x DB9's as above.