



TechNote

Configuration of a Moxa NPort for Use With AudioCore

Introduction

AudioCore offers support for direct Ethernet socket connections to suitable serial converters, allowing devices to be effectively connected to existing computer networks remotely and anywhere in the world. The device XTA recommends for this purpose is manufactured by Moxa and is part of their "NPort" range of serial servers. The particular device we will refer to in this TechNote is the NPort Model 5150 which features a direct 2 wire RS485 serial interface – convenient for direct connection to our processors.



Preparation for Setting Up the Device

Initially, we will connect the NPort directly to the computer to gain access to its built-in web-based configuration utilities. These web pages are stored directly within the NPort device so no internet connection is necessary. You will need a standard network cable to connect the NPort to the computer.

Start With A Reset!

The majority of the default settings are either correct, or do not matter for connection to AudioCore, so to ensure we have to change the minimum number of parameters, please ensure your NPort is set to factory defaults. Power the device up, and then hold in the reset button for FIVE seconds. During this time the Power LED will flash regularly as a warning – hold the reset until this stops and the device reboots.

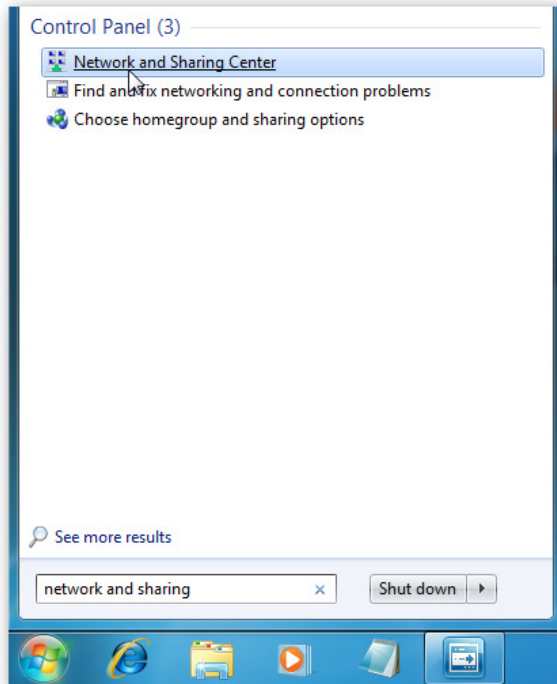


Fix Your Computer's IP address

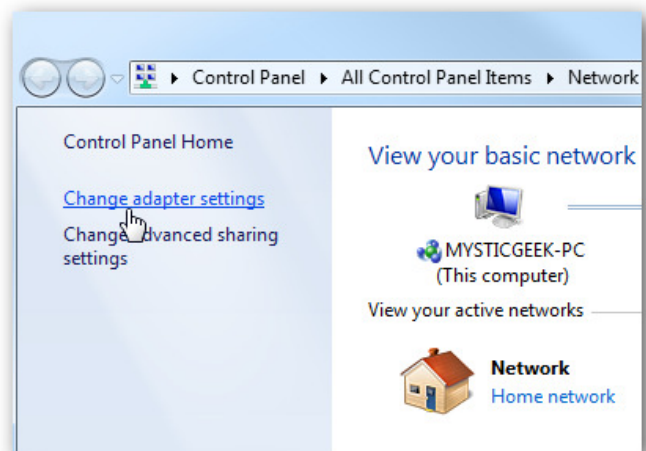
To ensure a simple connection direct to the NPort, it is best to set your computer's Ethernet adapter's IP address to a static (as opposed to dynamic) one. Depending on your operating system and version, this will be achieved by slightly different means.

For Windows 7/8:

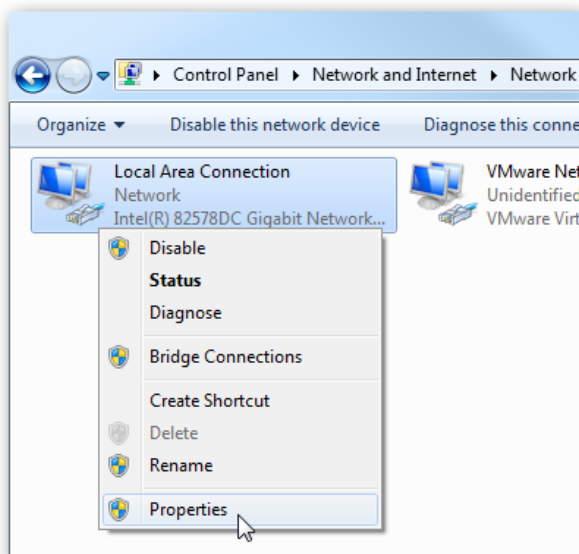
To change the computer's IP address in Windows 7, type *network and sharing* into the Search box in the Start Menu and select Network and Sharing Centre when it comes up. If you are in Windows 8.x it will be on the Start Screen itself.



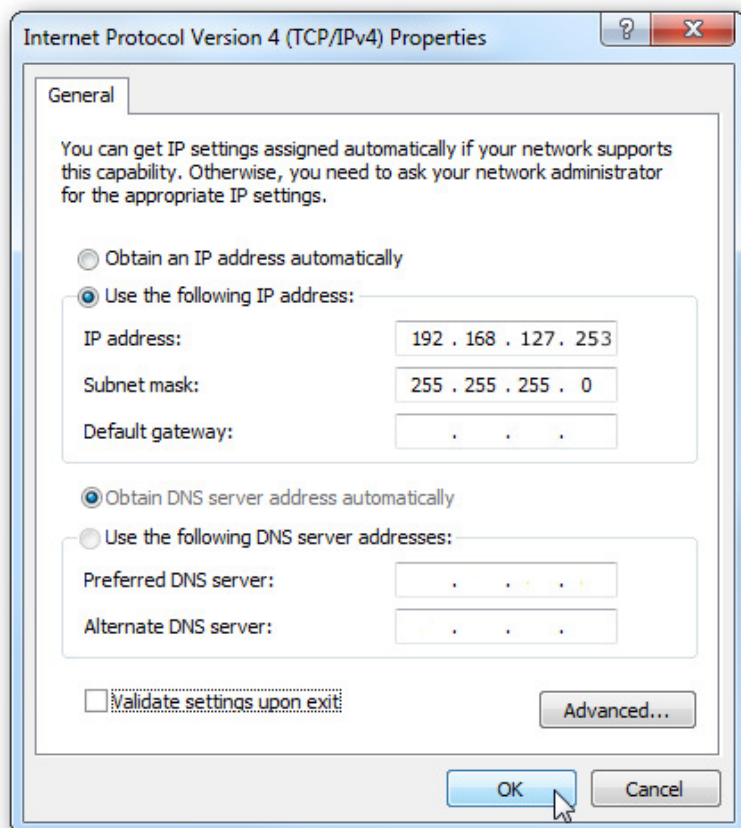
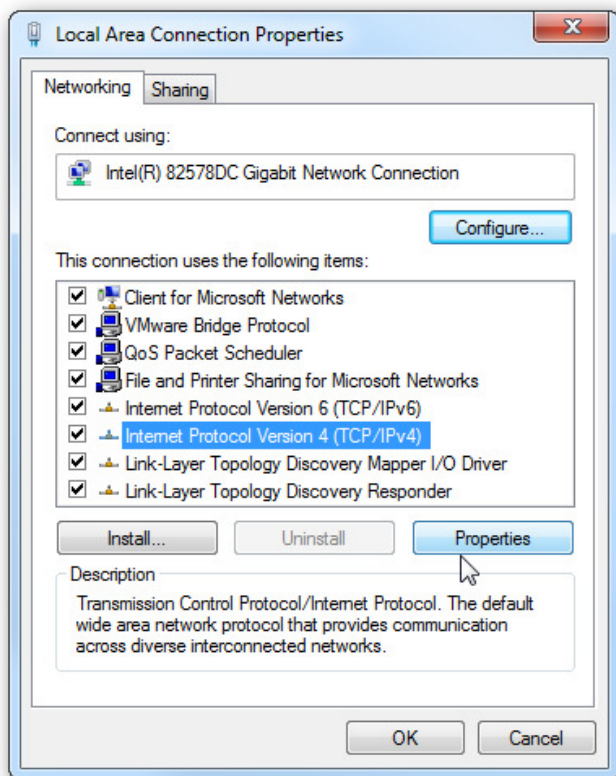
Then, when the Network and Sharing Centre opens, click on Change adapter settings. This will be the same on Windows 7 or 8.x.



Right click on your local adapter and select Properties.



In the Local Area Connection Properties window highlight *Internet Protocol Version 4 (TCP/IPv4)* then click the Properties button.



Now select the radio button *Use the following IP address* and enter in the static IP of

192.168.127.253,

and Subnet mask of

255.255.255.0

Leave all other sections blank.

Connect the NPort to your Computer

Now we have fixed the IP address of your computer's network adapter, and reset the NPort so it also has a known IP address, we can get them talking to each other.

Connect a standard network cable directly between the Ethernet port on your computer and the NPort.

The "Link" LED on the NPort should illuminate and might flicker – this is normal.

Next, open your Internet browser and type the following into the address bar (no "www" or anything else – just the numbers and full stops) as shown:

192.168127.254

This is the fixed IP address of the NPort and it should reply to the browser's request by displaying a webpage which is the home page of the configuration console "website", stored directly in the Nport itself.



MOXA www.moxa.com

Welcome to NPort's web console !

Model Name	NPort 5110
MAC Address	00:90:EB:19:A7:29
Serial No.	7075
Firmware Version	2.2 Build 08042219
System Uptime	0 days, 00h:06m:05s

NPort's web console provide the following function groups.

- Basic Settings**
Server name, real time clock, time server IP address, and Web console, Telnet console Enable, Disable function.
- Network Settings**
IP address, netmask, default gateway, static IP or dynamic IP, DNS, SNMP, IP location report.
- Serial Settings**
Baud rate, start bits, data bits, stop bits, flow control, UART FIFO.
- Operating Settings**
Operation mode, TCP alive check, inactivity, delimiters, force transmit timeout.
- Accessible IP Settings**
"Accessible IP or Accessible IP group". Disable to accept all IP's connection.
- Auto Warning Settings**
Auto warning E-Mail, SNMP Trap server IP address.
- Monitor**
Line, Async, Async-Setting
- Change Password**
Change Password support user to set the password for login the console screen.
- Load Factory Default**

Most of the default settings are correct for our purposes and will not need changing, but there are a few settings that have to be adjusted – we will go through them all now.

Adjust the TCP Port Settings on the NPort

From the home page in the console view now in the browser, click on Operating Settings > Port 1 (in the blue navigation area to the left)

The screenshot shows the Moxa NPort configuration web interface. The left sidebar contains a navigation menu with the following items: Main Menu, Overview, Basic Settings, Network Settings, Serial Settings, Operating Settings (selected), Accessible IP Settings, Auto Warning Settings, Monitor, Change Password, Load Factory Default, and Save/Restart. The main content area is titled 'Operating Settings' and is divided into sections for 'Port 1', 'Data Packing', and 'TCP Server Mode'. The 'Port 1' section includes the following settings: Operation mode (TCP Server Mode), TCP alive check time (7 min), Inactivity time (0 ms), Max connection (1), Ignore jammed IP (No), and Allow driver control (No). The 'Data Packing' section includes: Packing length (0), Delimiter 1 (0), Delimiter 2 (0), Delimiter process (Do Nothing), and Force transmit (0). The 'TCP Server Mode' section includes: Local TCP port (8002) and Command port (966). A 'Submit' button is located at the bottom of the form. Red arrows point to the 'TCP Server Mode' dropdown and the '8002' input field.

Set "Operation Mode to "TCP Server Mode"

Set "Local TCP port" to 8002.

Press "Submit".

Adjust the Serial Port Settings on the NPort

From the home page in the console view now in the browser, click on Serial Settings > Port 1 (in the blue navigation area to the left)



Set "Baud Rate" to either "115200" (if connecting exclusively to 4&5 Series, DC/Ti1048) systems or "38400" if you also use older DP224 or DP226 units.

Set "Flow Control" to "None".

Depending on which NPort device you have the "Interface" option might be fixed at "RS232" if it's a 5150, or you have the choice of "RS232", "RS485 4-wire" or "RS485 2-wire" modes. Choose "RS232" or "RS485 2-wire" mode.

Press "Submit".

And that's it! You should now be able to see the NPort in either AudioCore or use the iPad/iPhone app to connect to your units. All that's required now is the cable between the serial port of the NPort and the serial port of your first XTA unit...

Connect to the Serial Port on the NPort

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If you're working in RS232 mode, you need a 9-pin serial cable wired 1-1.

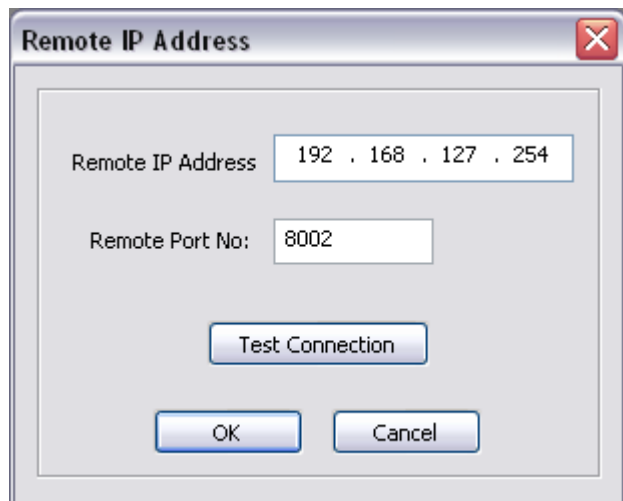
If you're working in RS485-2-wire mode, you need an adapter wired as below:

9 Pin DSub	XLR 3 Pin (Male)	Line Name
5	1	Ground
3	2	Data+
4	3	Data-

Remember to select the correct interface connection(s) on the units via their Interface Sub-Menu as appropriate for the settings you chose when configuring the Serial Port on the NPort (so baud rate and 232/485 mode).

Connect to AudioCore...

Open AudioCore and from the Remote Menu select TCP/IP, and set the address and port as shown:



Press "Test Connection" and if successful then start a new file File > New and then "Build System From Connected Units" as if this was a standard wired serial connection. Start remote control!

Connect to iPad...

In the DP4 Remote App, tap the action symbol in the navigation bar and select “Settings”



Set “IP” to “192.168.127.254”.

Set “Port” to “8002”.

Tap on “Done” to close the window.

Tap on “offline – remote: 192.168.127.254 @ 8002” to connect.

A menu should appear which offers you to “Send settings to device”, “Receive from Network” or “Just connect”.

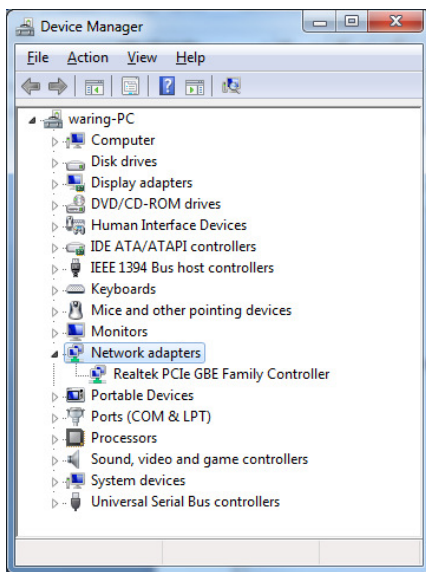
Choose one and, if you did everything right you should be connected to your units and metering should start on the iPad!

Troubleshooting

If you experience problems getting the Moxa to be recognised by your computer or just can't get a unit to respond in AudioCore, please try the following additional tips before you get in touch – you'll feel much more satisfied if you fix it yourself!

- During the initial set-up of the Moxa, make sure you turn your Wi-Fi off – this has caused problems on Windows 8 laptops where Wi-Fi is normally enabled by default and there can be conflicts with one network operating with a fixed IP address and one (your Wi-Fi) having a dynamically assigned IP address.

Turning your Wi-Fi adapter off will vary from machine to machine but you can always do it through Control Panel > System > Device Manager



Choose your WiFi adapter under Network Adapters, right click and Disable.

Remember, if you are going to connect the Moxa to a Wi-Fi router and run wirelessly, that you'll need to turn this back on after the initial configuration!

- If you've been able to set up the Moxa and are having an issue with AudioCore seeing devices, remember to check that the units' interface(s) have been set to RS485 mode – by default they will be on RS232 mode (and remember to set them all to different ID numbers!)
- If you are using older devices, these have a maximum serial speed of 38400 so make sure you've used this speed when setting up the serial port on the Moxa or nothing will be recognised by AudioCore.