



NT-LAN232 Hardware Setup Guide

Rev A – 03/28/2008

Getting Started

This document will provide a step-by-step setup procedure to connect the NT-SSA(x)/CLK to an Ethernet network using the NT-LAN232 Device.

What You Will Need

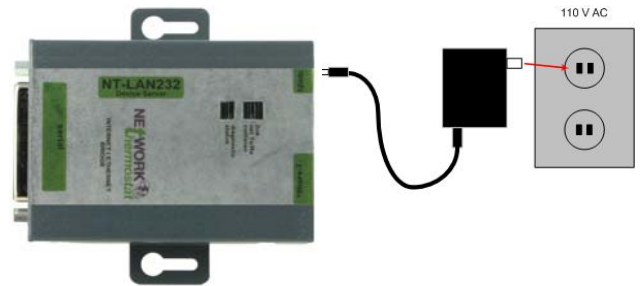
1. PC or Laptop w/ Windows 98, NT, 2000, or XP and one Serial Port.
2. NT-LAN232 Device and Cables provided [DB25-DB9 Serial Cable, RJ45 Ethernet Patch Cable]
3. NetworkThermostat Software & Documentation CD [Provided w/ NT-SSA(x)/CLK]
4. Information needed from the IT Department or Network Administrator (see below table).

What to Ask For:	Example	Your Information
Static IP Address on the LAN (Local Area Network)	66.238.8.44	
Default Gateway IP Address	66.238.8.1	
Subnet Mask (NetMask)	255.255.255.0	

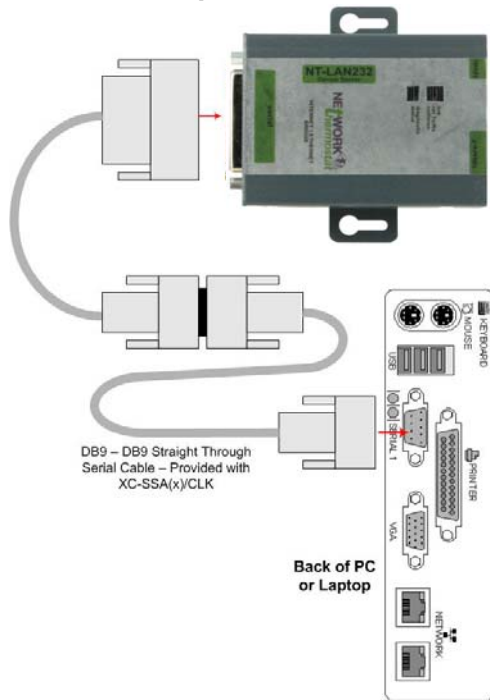
**For more information on Ethernet refer to 'NT-LAN232 Hardware Installation Guide'*

Connecting the NT-LAN232 Device

1. Power Connection



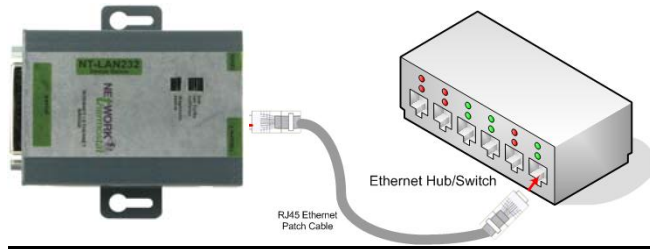
2. **Connecting directly to your PC/Laptop for Configuration** use the provided DB25-DB9 Cable as shown in the figure below. [The DB9-DB9 Cable provide with the NT-SSA(x)/CLK can be used to extend the length of this cable where needed.]



3. **Connection to NT-SSA(x)/CLK** for normal operation. Shown in the figure below.



4. **Ethernet Connection** to Switch or Hub. (Figure 1.4)



Setting the IP Address

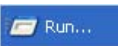
1. **Running HyperTerminal**

Any Terminal Emulation Software can be used; however, HyperTerminal is built into Windows so the example below shows how to use HyperTerminal to configure the IP Address of the NT-LAN232 Device. Refer to the above section about **“Connecting the NT-LAN232 Device directly to your PC/Laptop for Configuration”**

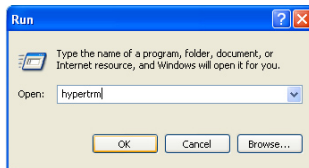
- a. From the PC Desktop click on the “Start” Menu



- b. Click on “Run”



- c. Type “hypertm” in the blank field and Click OK.

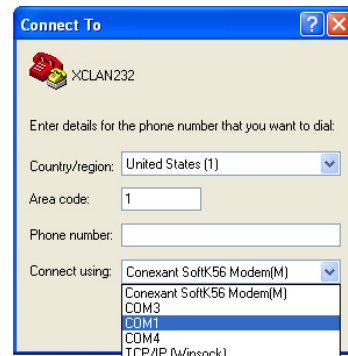


NOTE: If, at this point Windows displays a message that “This program could not be found,” follow these instructions: Go to the **CONTROL PANEL** then to **ADD/REMOVE Programs**, then to **ADD/REMOVE Windows Components**, then Select **HyperTerminal** and follow the ‘on-screen’ installation instructions. You may be required to insert your Windows CD to complete this operation.

- d. Type NTLAN232 in the Connection Description Window and Click OK

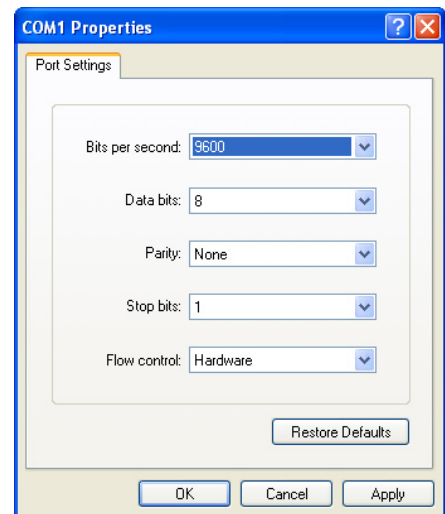


- e. Select Proper COM Port (Usually COM1 or COM2) and Click OK.

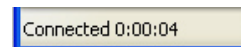


- f. On the Properties Window select the following and Click OK:

Bits Per Second	9600
Data Bits	8
Parity	NONE
Stop Bits	1



- g. At the bottom left hand side of the HyperTerminal Window it should indicate “Connected”



2. **Powering Up the Unit**

Please read the entire section about powering up the NT-LAN232 before continuing.

- a. If the NT-LAN232 is powered up already, unplug the power cable from the NT-LAN232.
- b. With the HyperTerminal Window open, while holding down the lower-case ‘x’ key on the keyboard, plug the power cable into the NT-LAN232.

- c. On the HyperTerminal Window you will see:

```

**
Serial Number 6621020 MAC address 00:20:4A:66:52:1C
Software version 04.5 (011025)
Press Enter to go into Setup Mode

```

- d. Press ENTER on the keyboard within 5 seconds to go to Setup Mode
- e. On the HyperTerminal Window you will see some information scroll by and at the bottom there will be the following Menu:

```

Change Setup : 0 Server configuration
               1 Channel 1 configuration
               5 Expert settings
               6 Security
               7 Factory defaults
               8 Exit without save
               9 Save and exit
Your choice ? 0_

```

3. Entering the IP Address

- a. From the Main Menu (in the above figure) press '0' then ENTER on the keyboard.

```

IP Address : (192) _

```

- b. Type in the digits BEFORE the **first** decimal of the IP Address to be used for this NT-LAN232 Device and press ENTER.

```

IP Address : (192) 66.(168)

```

- c. Type in the digits BEFORE the **second** decimal of the IP Address to be used for this NT-LAN232 Device and press ENTER.

```

IP Address : (192) 66.(168) 238.(000)

```

- d. Type in the digits BEFORE the **third** decimal of the IP Address to be used for this NT-LAN232 Device and press ENTER.

```

IP Address : (192) 66.(168) 238.(000) 8.(010)

```

- e. Type in the digits AFTER the **third** decimal of the IP Address to be used for this NT-LAN232 Device and press ENTER.

```

IP Address : (192) 66.(168) 238.(000) 8.(010) 44
Set Gateway IP Address (N) Y

```

4. Entering the Gateway Address

- a. After the IP address had been entered the HyperTerminal Window will display the question shown in the above example image. Type 'Y' as shown and press ENTER.
- b. Type in the digits BEFORE the **first** decimal of the Gateway Address to be used for this NT-LAN232 Device and press ENTER.

```

Gateway IP addr (000) 66_

```

- c. Follow the same process as entering the IP Address from the above section to complete the entering of the Gateway Address. After pressing enter for the last set of digits, the below message

should appear.

```

Gateway IP addr (000) 66.(000) 238.(000) 8.(000) 1
Netmask: Number of Bits for Host Part (0=default) (08)

```

5. Entering the Subnet Mask (Netmask)

- a. When the above message is displayed, refer to the below table to determine the number to enter that corresponds to the Netmask to be used for this NT-LAN232 Device. (The most common Netmasks are highlighted)

Netmask	Host Bits
255.255.255.252	02
255.255.255.248	03
255.255.255.240	04
255.255.255.224	05
255.255.255.192	06
255.255.255.128	07
255.255.255.0	08
255.255.254.0	09
255.255.252.0	10
255.255.248.0	11
...	...
255.255.0.0	16
...	...
255.128.0.0	23
255.0.0.0	24

- b. Once the 'Host Bits' that correspond to the correct Netmask have been determined, enter the Host Bit value in the HyperTerminal Window as shown below and press ENTER.

```

Netmask: Number of Bits for Host Part (0=default) (08) 08_

```

- c. After pressing ENTER, a message will ask if Telnet Config Password is to be Changed, **press 'N'** as shown in the example image below (Sec. 6a)

6. Save and Exit

- a. Shown below, is the Main Menu that will appear in the HyperTerminal Window after the above process of configuring all Ethernet Information is complete. Type a '9' and press ENTER on the keyboard to Save and Exit.

```

Change telnet config password (N) N

Change Setup : 0 Server configuration
               1 Channel 1 configuration
               5 Expert settings
               6 Security
               7 Factory defaults
               8 Exit without save
               9 Save and exit
Your choice ? 9

```

- b. A conformation "Parameters Stored..." Message will appear, followed by an "*" on the next line in the HyperTerminal Window. At this point HyperTerminal can be closed.
- c. Refer to the above section about "**Connecting the NT-LAN232 Device to the NT-SSA(x)/CLK**" and complete this procedure.

Troubleshooting

1. Check Connections

- a. **Power Connection** – Make sure the power connection is secure and is plugged into an active outlet in the wall or on a power strip. The green power light on the NT-LAN232 Device should be on.



b. **Ethernet Connection**

- i. **Connection on NT-LAN232 Device** – The Link Light should indicate if the device has a good connection to the Ethernet Hub/Switch it is connected to on the Network.



- ii. **Connection to Ethernet Switch/Hub** – Most Hubs and Switches come equipped with a “Link Indication Light.” If you are not sure where the Ethernet Switch/Hub is, ask the Network Administrator.

- c. **NT-SSA(x)/CLK Connection** – Make sure the provided DB9-DB25 cable is securely connected to the LAN/Modem Port on the NT-SSA(x)/CLK.

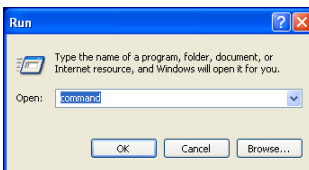
2. Pinging

Ping is a simple utility that sends “packets” of data to the NT-LAN232 and waits for a response to verify that a PC connected to the network can “see” the NT-LAN232.

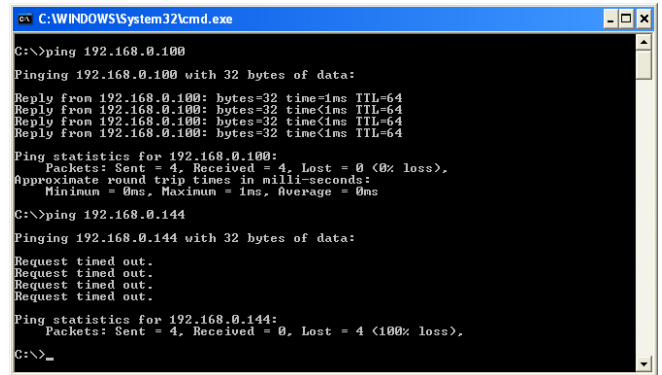
- a. From the PC Desktop click on the “Start” Menu



- b. Click on “Run”  and type “command” in the blank field and Click OK.



- c. When the Command Window Appears type: **ping [ip address of NT-LAN232]** and press ENTER. Potential Results shown in the figure below.



- i. If the response: “**Reply from [ip address of NT-LAN232]**” appears in the Command Window, the device is configured correctly and talking to the Ethernet Network. If there are still problems communicating with the NT-SSA(x)/CLK, refer to the NetworkThermostat DeviceComm Manager Overview or the NT-SSA(x)/CLK Installation Manual.
- ii. If the response: “**Request timed out**” appears in the Command Window, either the IP Address has not been set correctly in the NT-LAN232 Device or the Ethernet Connection with the Network has not been established.

3. Web Browser

- a. From the desktop of a PC or Laptop that is on the same Ethernet Network as the NT-LAN232 [you can ensure that this is the case by pinging the device as in the example above] open Internet Explorer 
- b. In the “Address Bar” of Internet Explorer, type `http://[IP Address of NT-LAN232 Device]`
Example: 
- c. If a Java Plug-in is already installed, the device is ready to be configured using the menus in the Browser window. If a Java Plug-in is not yet installed, go to http://www.java.com/en/download/windows_automatic.jsp

4. Further Information

- a. **NT-LAN232 Hardware Installation Guide**
- b. **NT-LAN232 Installation Guide for Win95/98**
- c. **NetworkThermostat DeviceComm Manager Overview**
- d. <http://www.networkthermostat.com/>