



MUSICA™ MUR2EM

Installation Guide



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Introduction

The *NetStreams*[®] *Musica*[®] *MUR2EM* is a web-based browser interface for control of most of the features offered by a *Musica* MU5066 Multi-Room Audio system. The *MUR2EM* provides realtime, two-way control of the entire *Musica* MU5066 Multi-Room Audio system using web pages on a browser-equipped device (such as a computer or wireless PDA with Macromedia[®] Flash[®]).

The *MUR2EM* provides:

- *MUR2EM*,
- Power cord for *MUR2EM*,
- DB9 Female to DB9 Female Null modem RS-232 cable,
- seamless integration with the *Musica* MU5066 system (no programming required),
- ease of use,
- easy web-based configuration using a Flash-enabled web browser,
- web browser control of any source,
- 10/100 Mbps ethernet through RJ45 connection, and
- compact size.

Specifications

Table 1-1
Specifications

Item	Specification
Network Interface	RJ-45 (10BASE-T) ethernet
Management	Internal HTTP server
System Firmware	Flash ROM standard (firmware can be downloaded from the TCP/IP host (TFTP) or over the serial port)
LEDs	<ul style="list-style-type: none"> ○ Network link ○ Ethernet activity ○ Custom (red)
Physical Dimensions	<ul style="list-style-type: none"> ○ • Length: 3.876 in (9.846 cm) ○ • Width: 1.680 in (4.267 cm) ○ • Depth: 0.999 in (2.537 cm)
Weight	○ Weight: 2.29 oz (6.50 g)
Power	9-30VDC @ 370 mA
Environmental	<ul style="list-style-type: none"> ○ Storage temperature: -40° C to +90° C (-40° F to +194° F) ○ Operating temperature: 0° C to 60° C (32° F to 140° F) ○ Relative humidity: 5% to 90% (non-condensing) ○ Altitude: 12,000 Feet (3658 Meters)
Agency Approvals	<ul style="list-style-type: none"> ○ FCC Part 15, Class A ○ EN 55022 ○ EN5J024 ○ VCCI ○ AS 3548 ○ UL60950 ○ CSA 22.2 NO.60950 ○ EN 60950

Installer Requirements

This manual assumes the installer:

- knows how to install a *Musica* system,
- knows how to use basic installation tools such as an RJ-45 crimper to terminate CAT5e wire.
- has pulled all necessary wire to the locations where the preamp, keypads, and speakers are to be installed.
- understands basic Microsoft® Windows® commands such as how to browse, create folders, save files, etc.

For more information on meeting the prerequisites, contact *NetStreams* Technical Support at 866-353-3496.

Configuring a Single *MUR2EM*

This chapter shows you how to connect and address the *MUR2EM* hardware.

The *MUR2EM* connects to the *Musica* MU5066ADC. It allows the home owner to control the *Musica* system through a Flash-enabled web browser (see Figure 2-1).

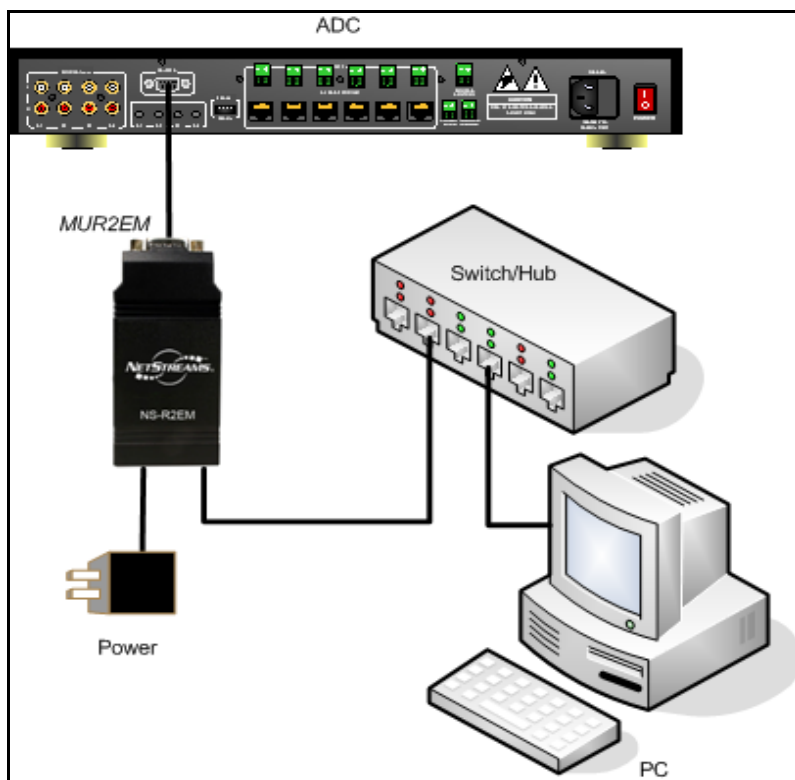


Figure 2-1 Connecting the *MUR2EM* to the ADC

Hardware Requirements

To complete an installation for a single *MUR2EM*, you will need:

- an *MUR2EM*. Part Number: NS-MUR2EM,
- a *NetStreams Musica* MU5066 Audio Distribution Center[®] (ADC). Part Number: NS-MU5066ADC,
- a hub/switch,

- a computer with serial port (or USB to serial adapter),
- an Ethernet cable,
- an RS-232 cable,
- a power cable for the *MUR2EM*,
- a power cable for the *Musica* MU5066ADC, and
- a power cable for the hub/switch.

Software Requirements

- Flash Macromedia[®] running on the web browser device.
- Windows XP, SP2.
- a Flash-compatible web browser.

Configuring the IP Address

To configure the IP address for the *MUR2EM*, you must first connect the hardware, then use HyperTerminal to complete the configuration.

Connecting the MUR2EM

To connect the *MUR2EM* for IP configuration, complete the following steps:

1. Connect the *MUR2EM* to the computer using the null modem cable provided.

NOTE: If your computer does not have a serial port, you need to use an adapter that converts USB to serial. Note the COM port number.

2. Connect the Ethernet port of the *MUR2EM* to the home network switch.
3. Connect the Ethernet port of the computer to the home network switch.
4. Ensure all power cables are plugged in.
5. Start the computer.

Configuring the IP Address

This section shows you how to configure the IP address for your *MUR2EM* that matches the IP address scheme for the home network.

To configure the IP addresses of your *MUR2EMs*, complete the following steps:

1. Select **Start>All Programs>Accessories>Communications>HyperTerminal**.
The HyperTerminal screen displays (see Figure 2-2).

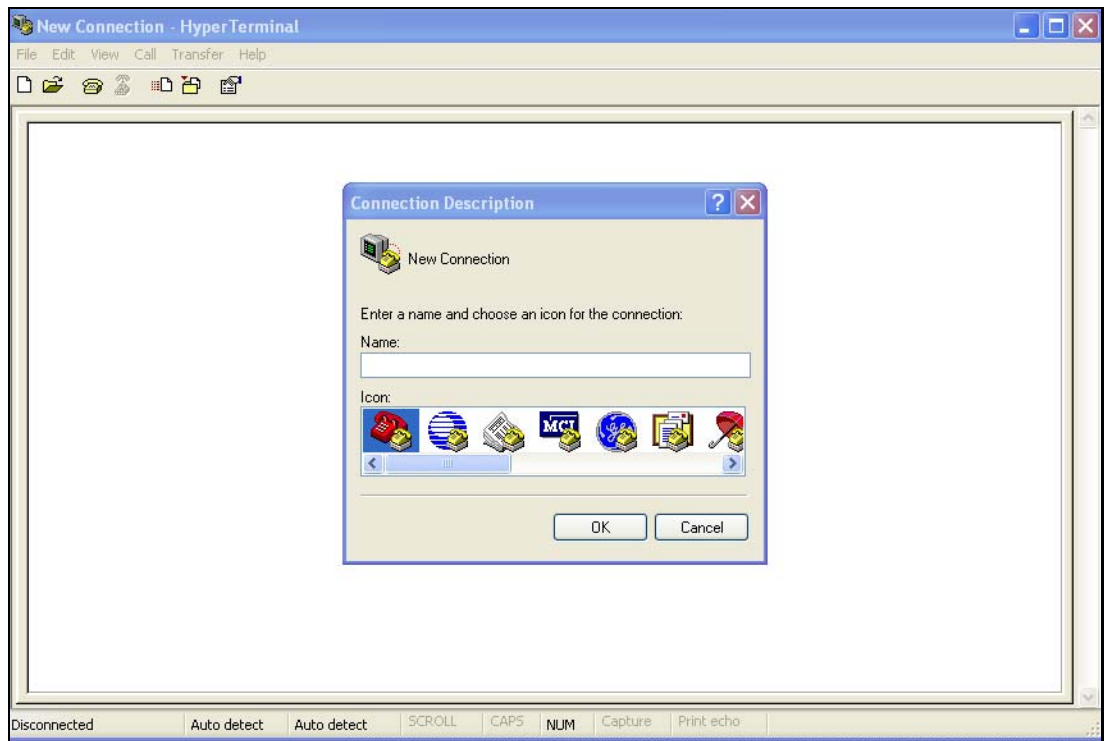


Figure 2-2 HyperTerminal screen

2. In the Connection Description dialog box, enter **MUR2EM** in the Name field.
3. Select **OK**.

The Connect To dialog box displays (seeFigure 2-3).



Figure 2-3 Connect To dialog box

4. In the Connect Using field, enter the COM port you want to use (this will normally be COM1).
5. Select **OK**.
The COM Properties window displays (see Figure 2-4).

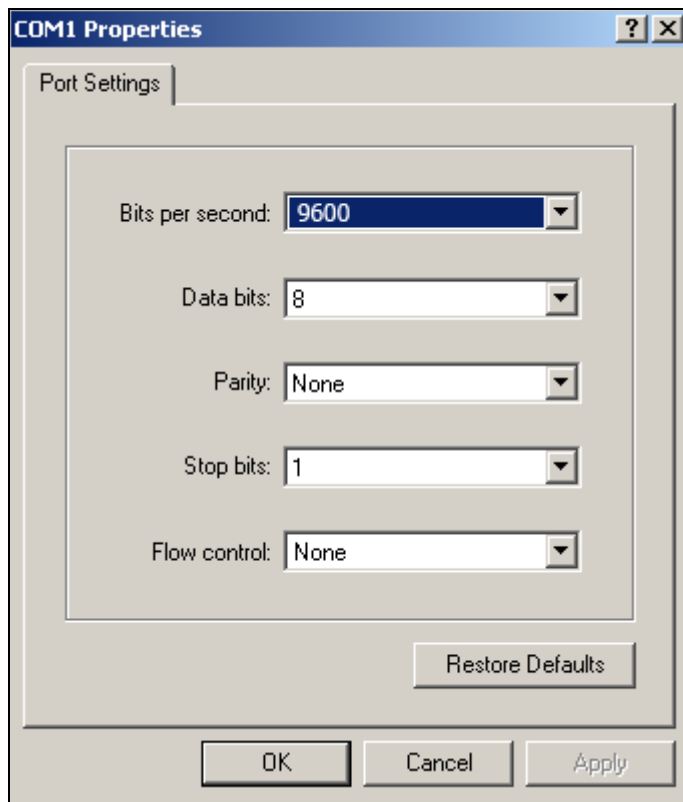


Figure 2-4 COM Properties window

6. Enter the following settings:
 - Bits Per Second: 9600
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1
 - Flow Control: None
7. Select **OK**.
A blank HyperTerminal screen displays (see Figure 2-5).

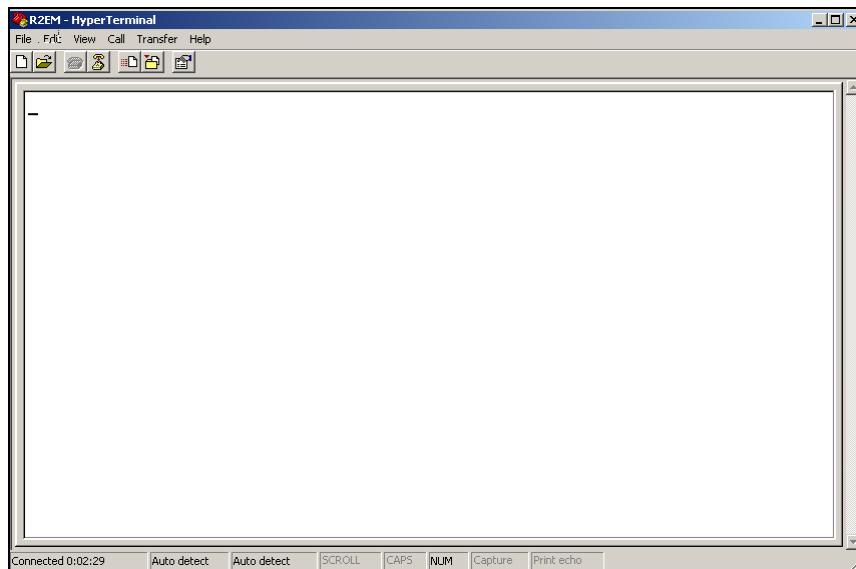


Figure 2-5 Blank HyperTerminal screen

8. Pull the power cable from your *MUR2EM*, wait 5 seconds, then plug it back in. Wait 30-60 seconds while HyperTerminal connects to the *MUR2EM*. Shortly, the screen displays information for the *NetStreams MUR2EM* and says you can make changes if you press any key within five seconds of the information displaying.
9. Press any key.
You are prompted to Accept or Modify the settings.
10. Enter **M** to modify.
You are prompted for the root password.
11. Enter **Netsilicon** (the field is case-sensitive).
You are prompted to enter your IP settings.
12. Enter the Static IP Address and press **Enter**.
You are prompted to enter the Subnet mask.
13. Enter the Subnet Mask and press **Enter**.
You are prompted to enter the Gateway Address.
14. Enter the Gateway address and press **Enter**.
You are prompted that changes are being saved in NV memory and that the configuration is done (see Figure 2-6).

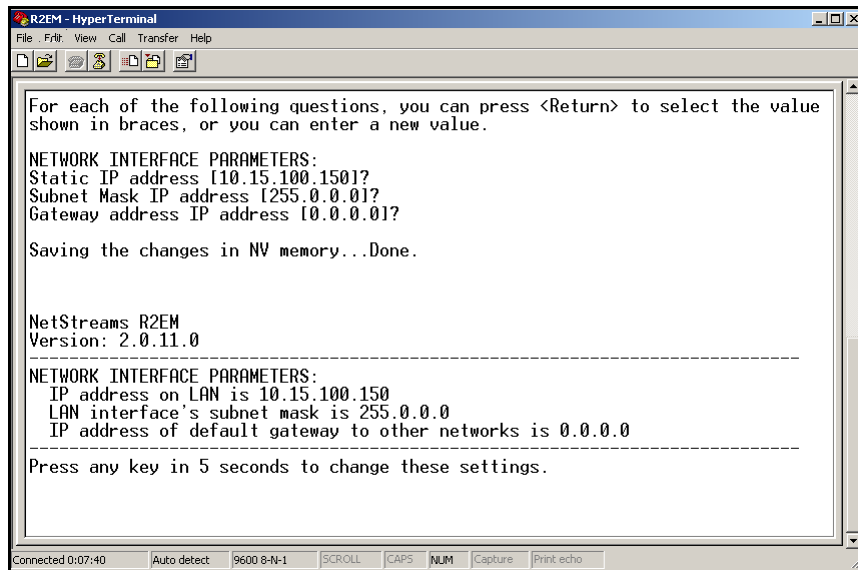


Figure 2-6 Configuration complete

The unit reboots. You will see the new IP, Subnet Mask, and Gateway settings on the HyperLink terminal screen.

IMPORTANT! Do not make any changes to your computer, or any hardware connected to the system until the unit completely reboots.

Connecting the *MUR2EM*

To connect the *MUR2EM* to your home network, complete the following steps:

1. Connect the *MUR2EM* to the *Musica* MU5066ADC using a null modem cable.
2. Connect the Ethernet port of the *MUR2EM* to the home network switch.
3. Connect the Ethernet port of the computer to the home network switch.
4. Ensure all power cables are plugged in.
5. Start the computer.
6. Continue to *Configuring the Interface* on page 4-1.

Connecting Multiple *MUR2EMs*

This chapter shows you how to connect multiple *MUR2EMs*.

You can connect additional *MUR2EMs* to support 18 zones (see Figure 3-1).

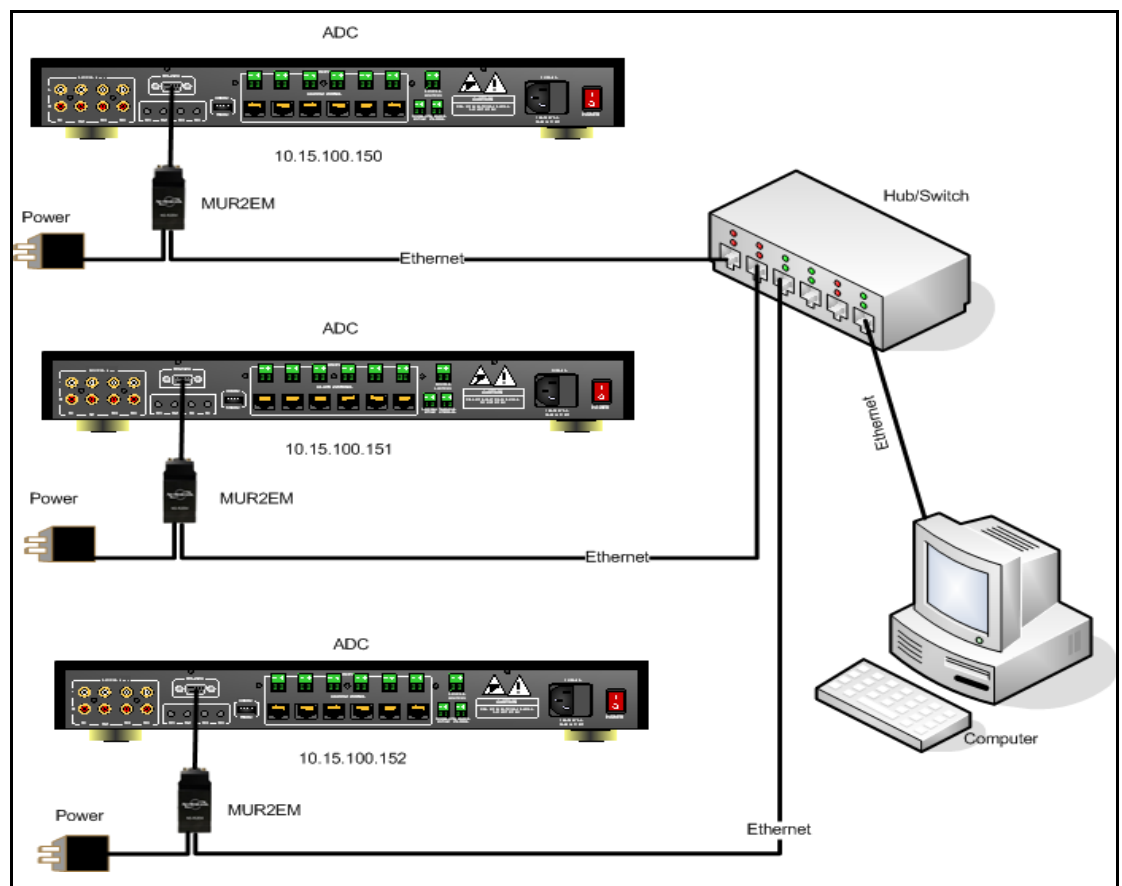


Figure 3-1 18-Zone Configuration

Hardware Requirements

To complete an installation including more than one *MUR2EM*, you will need:

- a *Musica* MU5066ADC (part number NS-MU5066ADC).

NOTE: You'll need two ADCs for an 18-zone implementation.

- an *MUR2EM* (part number NS-MUR2EM) for each ADC,
- a hub/switch,
- a computer with serial port (or USB to serial adapter),
- an Ethernet cable for each *MUR2EM*,
- an RS-232 cable for each *MUR2EM*,
- a power cable for each *MUR2EM*,
- a power cable for each *Musica* MU5066ADC,
- power cable for the hub/switch.

Software Requirements

- Macromedia Flash running on the web browser device.
- Windows XP, SP2.
- a Flash-compatible web browser.

Configuring the IP Address

To configure the IP address for all *MUR2EM*s on the system, you must first connect the hardware, then use HyperTerminal to complete the configuration.

Connecting the MUR2EM

To connect additional *MUR2EM*s and ADCs, complete the following steps:

1. Connect each *MUR2EM* to the computer using the null modem cable provided.

NOTE: If your computer does not have a serial port, you need to use an adapter that converts from USB to serial. Note the COM port number.

2. Connect the Ethernet port of each *MUR2EM* to the network hub/switch.
3. Connect the Ethernet port of the computer to the network hub/switch.
4. Ensure all power cables are plugged in.
5. Start the computer.

Using HyperTerminal

This section shows you how to configure the IP address for each *MUR2EM* in a 12-18 zone system to work with your PC, wireless web tablet, or PDA and the *NetStreams* MU5066ADC.

To configure the IP addresses of your *MUR2EMs*, complete the following steps:

1. Select **Start>All Programs>Accessories>Communications>HyperTerminal**.

The HyperTerminal screen displays (see Figure 3-2).

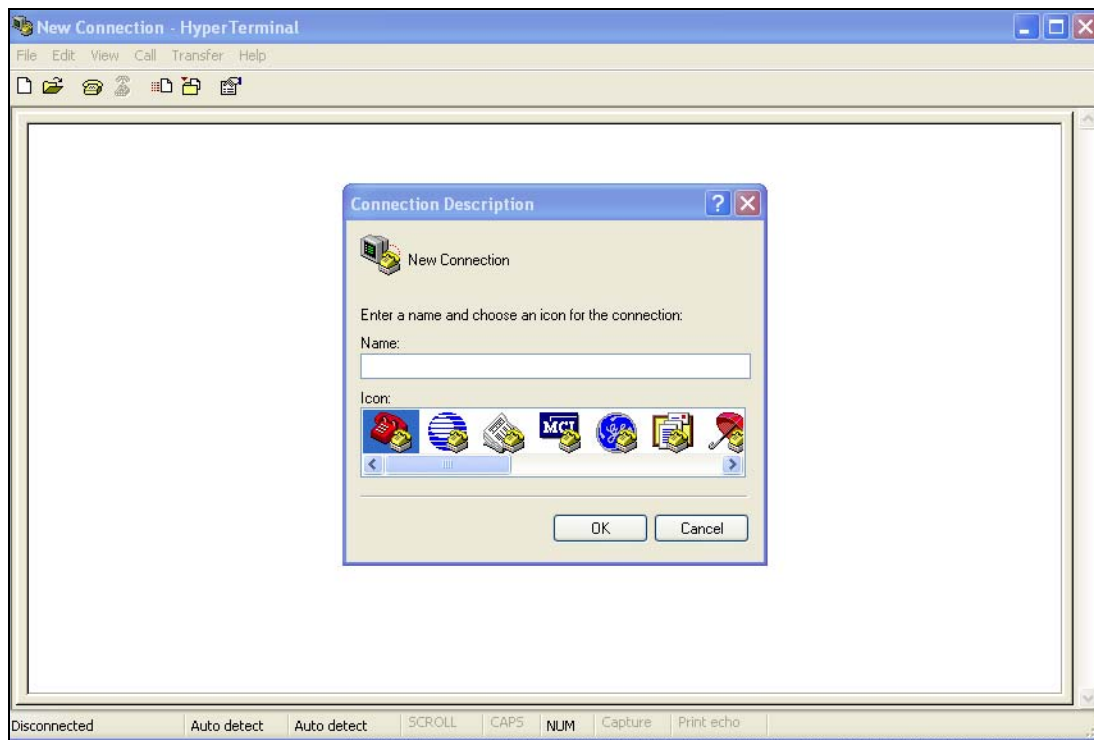


Figure 3-2 HyperTerminal screen

2. In the Connection Description dialog box, enter **MUR2EM** in the Name field.
3. Select **OK**.

The Connect To dialog box displays (see Figure 3-3).



Figure 3-3 Connect To dialog box

4. In the Connect Using field, enter the COM port you want to use (this will normally be COM1).
5. Select **OK**.
The COM Properties window displays (see Figure 3-4).

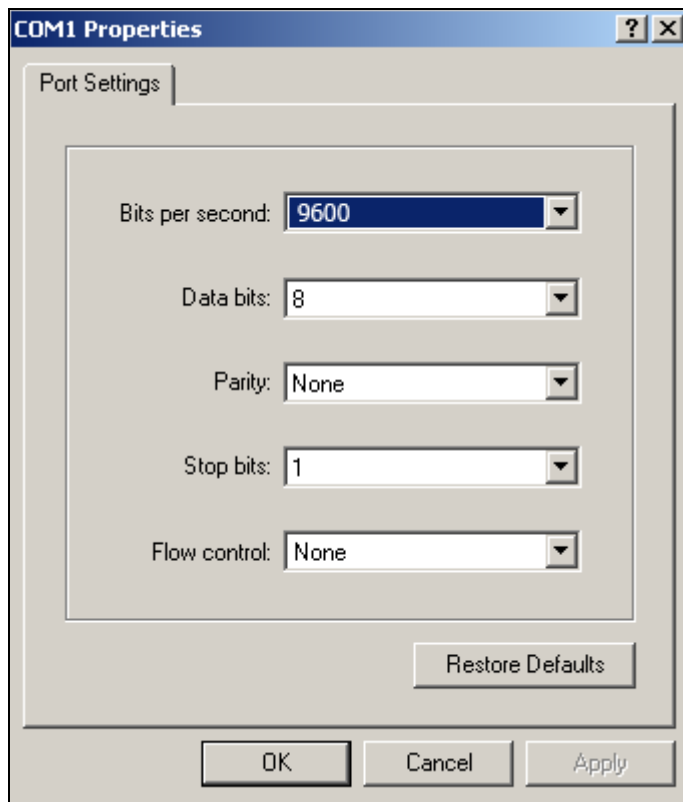


Figure 3-4 COM Properties window

6. Enter the following settings:
 - Bits Per Second: 9600
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1
 - Flow Control: None
7. Select **OK**.
A blank HyperTerminal screen displays (see Figure 3-5).

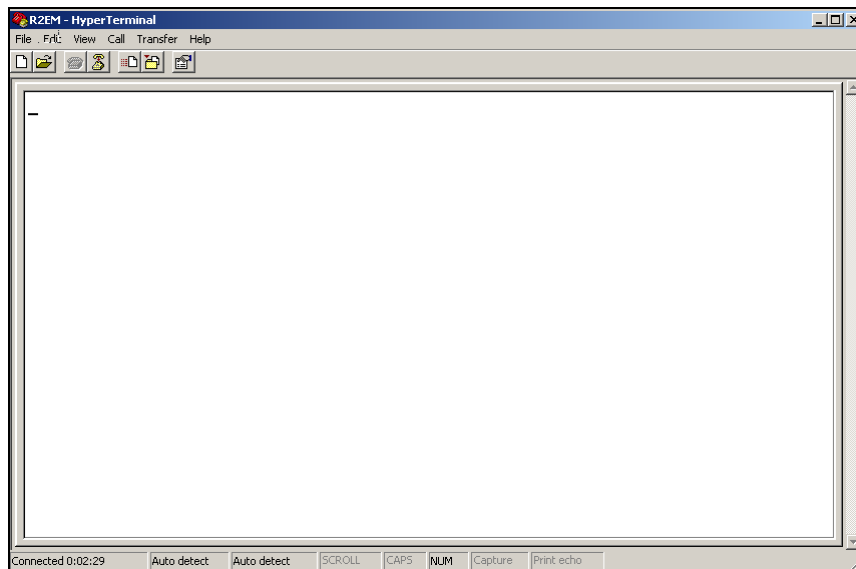


Figure 3-5 Blank HyperTerminal screen

8. Pull the power cable from the first of your *MUR2EMs*, wait 5 seconds, then plug it back in.

Wait 30-60 seconds while HyperTerminal connects to the *MUR2EM*. Shortly, the screen displays information for the *NetStreams MUR2EM* and says you can make changes if you press any key within five seconds of the information displaying.

9. Press any key.

You are prompted to Accept or Modify the settings.

10. Enter **M** to modify.

You are prompted for the root password.

11. Enter **Netsilicon** (the field is case-sensitive).

You are prompted to enter your IP settings.

NOTE: These will typically be settings from the PC you are using with the *MUR2E*.

12. Enter the Static IP Address and press **Enter**.

NOTE: If you have more than one *MUR2EM*, the IP addresses must be sequential. For instance, the first *MUR2EM* might be 10.15.100.150, and the next two would be 10.15.100.151 and 10.15.100.152.

You are prompted to enter the Subnet mask.

13. Enter the Subnet Mask and press **Enter**.

You are prompted to enter the Gateway Address.

14. Enter the Gateway address and press **Enter**.

You are prompted that changes are being saved in NV memory and that the configuration is done (see Figure 3-6).

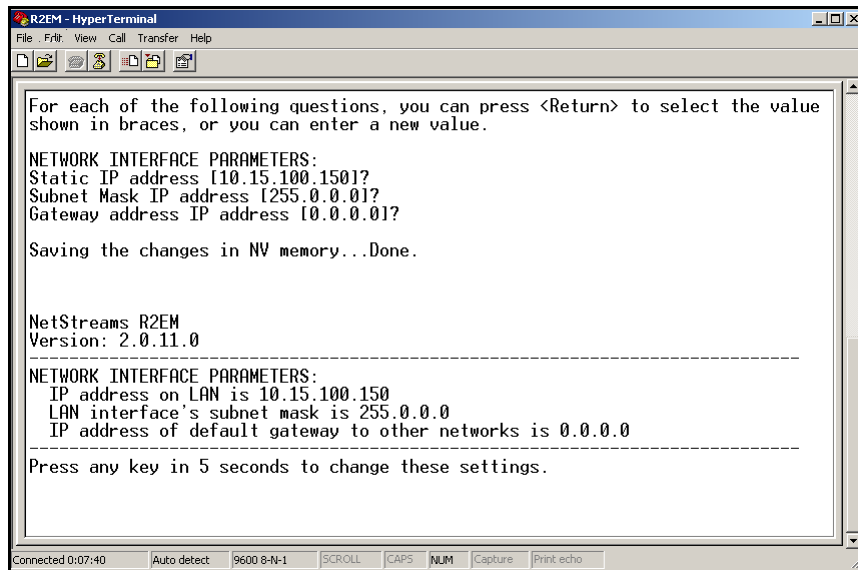


Figure 3-6 Configuration complete

The unit reboots. You will see the new IP, Subnet Mask, and Gateway settings on the HyperLink terminal screen.

15. Repeat steps 1. through 14. for each *MUR2EM*.

IMPORTANT! Do not make any changes to your computer, or any hardware connected to the system until the unit completely reboots.

Connecting the *MUR2EM*

To connect additional *MUR2EMs* to your home network, complete the following steps:

1. Connect each *MUR2EM* to the *Musica* MU5066ADC using a null modem cable.
2. Connect the Ethernet port of each *MUR2EM* to the network hub/switch.
3. Connect the Ethernet port of the computer to the network hub/switch.
4. Ensure all power cables are plugged in.
5. Start the computer.

Configuring the Interface

When you enter the IP address of the *MUR2EM* in your browser, the *MUR2EM* interface displays (see Figure 4-1).



Figure 4-1 *MUR2E* Interface

The interface can be configured for portrait or landscape mode as follows:

- Portrait Mode - to view the *MUR2EM* interface in portrait mode, type:
<http://<IP Address>/Portrait.html>
- Landscape Mode - to view the *MUR2EM* interface in landscape mode, type:
<http://<IP Address>/Landscape.html>

NOTE: The URLs are case sensitive.
