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av 

## OPERATION MANUAL

HDMatrix Configuration Utility

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**B-100-HDMatrix-4x4    B-100-HDMATRIX-8x8**

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# 1 Overview

The following document outlines the operation of the configuration utility that is used for configuring the B-100-HDMATRIX-4X4.

Please read through the entire document before attempting to configure a B-100-HDMATRIX-4x4.

Should you have any questions about this software utility for the B-100-HDMATRIX-4x4 after reading this document, please contact SnapAV: Technical Support.

## Contacting Technical Support

Phone: (866) 838-5052 (704) 909-5229

Email: [Techsupport@snapav.com](mailto:Techsupport@snapav.com)

# 2 Software Version

The information below applies to the Configuration Utility and HDMatrix software versions listed below or higher. Some features may not be available when versions lower are used. It is recommended that the latest version of software be installed in the HDMatrix and the latest version of the Configuration Utility be used.

Download the latest versions from the SnapAV website, install the HDMatrix, and open the latest Configuration Utility before proceeding.

Model	Firmware	PC Configuration Utility
B-100-HDMATRIX-4x4	98.01.07	1.00.17
B-100-HDMATRIX-8x8	98.01.16	1.00.22
B-300-HDMATRIX-4x4	98.01.15	1.00.19
B-300-HDMATRIX-8x8	98.01.16	1.00.25

# 3 Before Beginning

Before you begin the setup of a B-100-HDMatrix for RS-232 control make sure the following items are at hand.

- B-100-HDmatrix-4x4
- B-100-HDMatrix Owner's Manual
- PC to run software
- Serial Cable to connect the B-100-HDMatrix-4x4 to the PC
- DB9 to USB adaptor (only if the PC does not have a serial port built-in)

Recommended verified adaptor: Keyspan by Tripp Lite USA-19HS

- List of the sources and displays used in the system
- Knowledge of this document and the devices being used in the system

## 4 Downloading the Utility

The software utility is included on the CD provided with the B-100-HDMatrix-4x4 and can also be downloaded from the product page at [www.SnapAV.com](http://www.SnapAV.com). Check the site frequently for future updates to ensure that the latest version of the utility is being used.

## 5 Utility File Location

The HDMatrix software utility is a standalone program that does not install in the computers program file list. After downloading the utility, unzip the downloaded file to a location that is easy to remember and locate when needed.

Suggested Folder Location:

C:\My Documents\Binary\B-100-HDMatrix\Configuration Utility

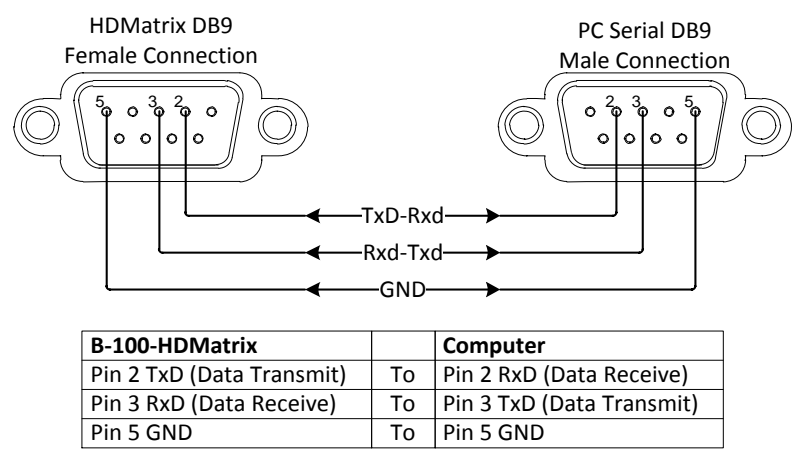
Be sure and write down the chosen location and create a shortcut on the desktop or other location so that it can be accessed when needed.

## 6 Communicating with the HDMatrix

### 6.1 Serial Connection

Communication between the HDMatrix and the PC is via a Male to Female DB9 straight through cable. Before connecting, verify that the pin configuration of the cable matches the diagram below.

Should the PC not have a built in DB9 connection, we recommended the Keyspan by Tripp Lite USA-19HS DB9 to USB adaptor. This adaptor has been tested and is verified to work with this configuration utility.



## 6.2 COM Port Selection



Select the COM port on the computer that is connected to the HDMatrix from the list of available COM ports. If the connected COM port does not appear in the list, refer to the PCs device list to verify that COM ports have been installed and have the right communication settings.

## 6.3 Initializing Communication



Select the CONNECT button to initiate communication between the HDMatrix and the computer.

Once connected:

- Button name will change to DISCONNECT
- Status box will change to CONNECTED and be green

If after a few moments this does not occur, perform these steps.

1. Verify that the correct COM port is selected
2. Verify that the correct communication settings are correct on the PCs COM port
3. Verify that the cable is correct PIN configuration and that it is functioning correctly.

If after performing these steps communication cannot be established, please contact SnapAV tech support.

## 6.4 Stopping Communication



Select DISCONNECT to stop communication between the HDMatrix and the computer.

## 7 EDID Configuration

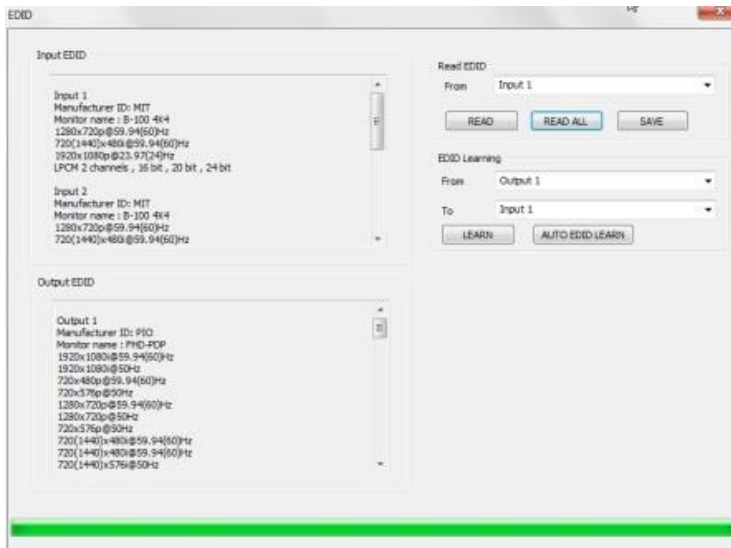
The purpose of EDID Configuration is to set the EDID for each Input appropriately. This EDID will be passed to the connected source and, up to the capabilities available in the source, determines the format of Audio and Video that will be presented by the Source to all of the Displays connected to the B100-HDMATRIX Outputs.

For example, assume you have two displays that will view the source connected to Input 1. One of the displays is capable of 7.1 multi-channel audio but the other is only capable of stereo audio. In this case, you will store an EDID in Input 1 that restricts the audio to Stereo so that both Displays will produce audio.

### CONFIGURE EDIDs

Select to access EDID configurations.

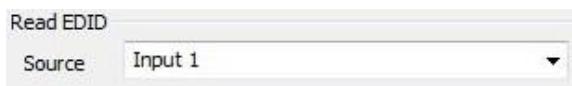
NOTE: If the PC is not communicating with the HDMatrix, a NOT CONNECTED window will appear.



### 7.1 Display EDID for Particular Input / Output

Read EDID allows you to read the currently stored EDID for each Input and to read the EDID from display (if any) connected to each Output. Note that EDIDs for the Inputs are displayed in the upper left box while EDIDs for the outputs are displayed in the lower left box.

1. Select an input or an output from the dropdown list



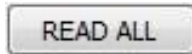
2. Select READ to display the information.



3. The EDID values for the selected Input or Output will be displayed in the box to the left of the screen

## 7.2 Display EDID for All Inputs / Outputs

1. READ ALL will read and display the currently assigned EDID for each Input and the EDID from each connected Display.

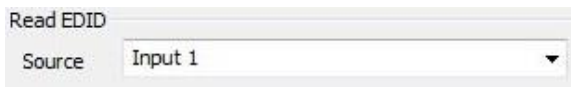


2. The EDID values for all Inputs will be displayed in the top left box. The EDID values for all connected displays will be displayed in the lower left box.

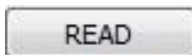
## 7.3 Save Configuration for Inputs / Outputs

This function allows you to save an EDID to disk for future use. A common use of this function is storing the EDID's for commonly used TVs on disk. These can be recalled from disk (see EDID Learning below) and stored in the EDID Input locations even if the display is not currently connected.

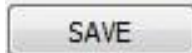
1. Select an input or an output from the dropdown list



2. Select READ to display the information.



3. Select SAVE to save the file.



4. Browse to the location of your choice to save the configuration file.

### Suggested Folder Location:


C:\My Documents\Binary\B-100-HDMatrix\EDID Configurations



5. Create name for the file that indicates the contents.

## 7.4 Learn EDID to Input

1. Select an EDID to learn from in the EDID Learning FROM dropdown list

A screenshot of the 'EDID Learning' section. It features a 'From' label followed by a dropdown menu currently displaying 'Output 1'.

### Available Choices

- Output 1
- Output 2
- Output 3
- Output 4
- 1. 1080p@60Hz 24-Bit 7.1ch
- 2. 1080p@60Hz 24-Bit 2ch
- 3. 1080p@60Hz 24-Bit 3D 7.1ch
- 4. 1080p@60Hz 24-Bit 3D 2ch
- 5. 1080p@60Hz 36-Bit 3D 7.1ch
- 6. 1080p@60Hz 36-Bit 3D 2ch
- 7. 1080i@60Hz / 720p@60Hz 24-Bit 7.1ch
- 8. 1080i@60Hz / 720p@60Hz 24-Bit 2ch
- From File

When From File is selected, a window will open allowing you to navigate to the location where an EDID configuration file was saved. Select the desired file and Select open.

2. Select an Input to learn to in the EDID Learning TO dropdown list

A screenshot of the 'EDID Learning' section. It features a 'To' label followed by a dropdown menu currently displaying 'Input 1'.

### Available Choices

- Input 1
- Input 2
- Input 3
- Input 4
- All Inputs

3. Select the LEARN button

A screenshot of a rectangular button with the word 'LEARN' in capital letters.

The selected EDID is stored in the selected Input locations.



## 7.5 Auto EDID Learn

The B-100-HDMATRIX includes this automatic function that will determine the EDID with the best quality audio and video that will work with all connected displays. If all sources are to be viewable on all displays, this function provides an easy mechanism for determining the EDIDs to store in all Inputs.

If some sources (such as a Blu-Ray for the theater) are only viewed on some displays this method may provide a more restrictive EDID than desired for some displays.

AUTO EDID LEARN

To see the results of Auto Learn, Select the READ ALL button under Read EDID. This will provide a list of EDID values from all sources and all displays connected to the HDMatrix.

**Note:** Auto EDID sets audio to 2ch for all inputs regardless of the capability of the connected displays. If multi-channel audio is desired, embedded EDIDs or Learned EDIDs will need to be used.

## 8 Output Control

VIEW OUTPUTS

Selecting View Outputs opens a window that allows outputs to be turned On or Off. This can be used for trouble shooting the HDMatrix and connections.



## 9 Firmware Update

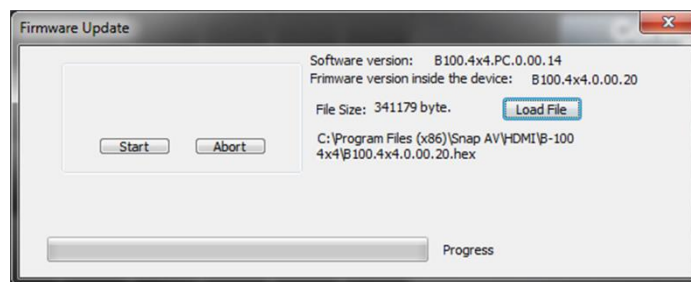
### FIRMWARE Update

The process to update firmware is different for 4x4 and 8x8 matrixes, please read and follow the steps below appropriate for the matrix being updated. Before proceeding with these steps, download the latest firmware update from the B-100-HDMatrix product page and save to your computer.

**Important!** Be sure the firmware file from the downloaded folder is not compressed or in a compressed folder before updating to avoid having the matrix stop responding. We recommend copying the firmware file to the desktop outside of any folders to be sure there is no compression.

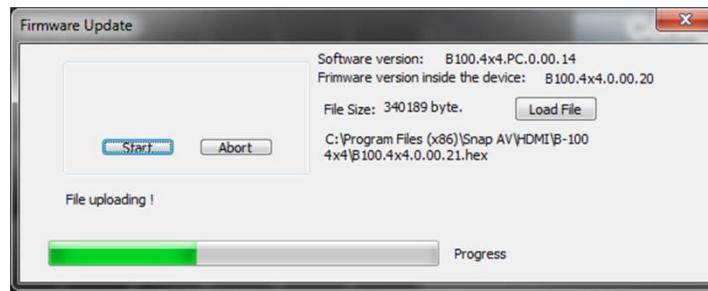
### 9.1 Updating HDMATRIX 4x4

1. Open Configuration Utility and select Firmware Update.
  - A. In the Firmware Update window:
    - A.1. Select **Load File** to open the File Selector.
    - A.2. Find and select the firmware update file.
    - A.3. Select the **Open** button.
    - A.4. Verify the path and selected file name appear in the Firmware Update window.



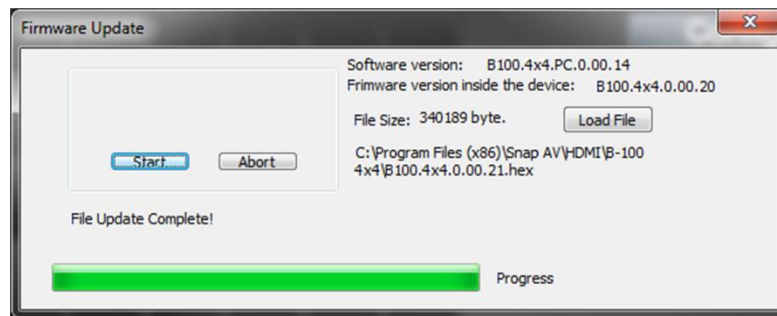
**NOTE:** The steps which follow **MUST** be performed in sequence within given time frames. Please review instructions before proceeding with the update, and follow the steps as directed.

- B. Select the **Start** button.
    - C. The Firmware Update window will indicate, **Waiting!**
2. At the HDMATRIX, verify that the front panel Power button is in the OFF (out) position.
3. At the HDMATRIX, remove power to the chassis by unplugging the power supply connector.
  - A. After **5 seconds**, restore power by plugging the power supply connector back into the HDMATRIX.
  - B. Observe the Firmware Update status bar.
  - C. The Firmware Update window will indicate **File uploading!** and the Progress bar will begin incrementing.



- If the firmware update is successful, the Firmware Update window will indicate **File Update Complete!**.
- If the firmware update does not start or was not successful, repeat steps B. through J. If the update still does not work, see section 9.2. HDMATRIX-4x4 Firmware Recovery.

If the firmware update was successful, reboot the HDMATRIX by removing and restoring power to the unit.



When the firmware update is complete, remove the DB9 RS-232 connection between the HDMATRIX and the PC (unless needed for further configuration).

## 9.2 HDMATRIX-4x4 Firmware Recovery

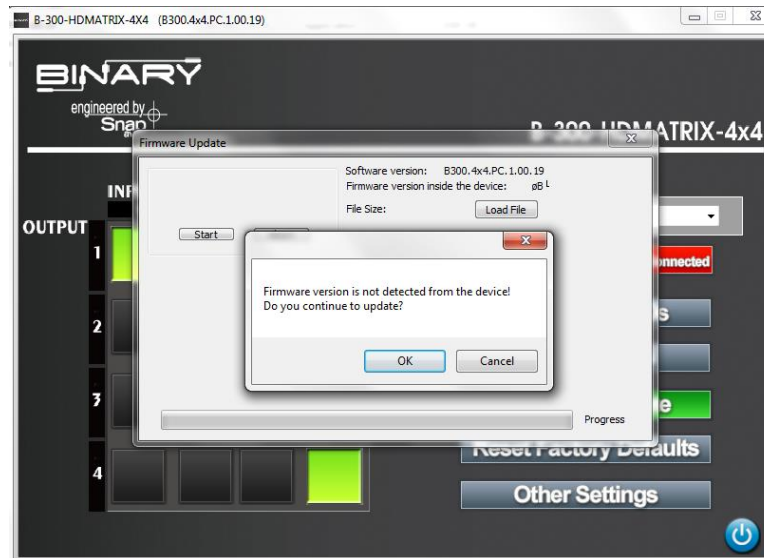
If an error is made in the update process, the B-100-HDMATRIX-4X4 may become unresponsive. Symptoms may include:

- No feedback or control from the matrix when switching zones
- Configuration Utility will not connect to the matrix
- Front display does not show the correct numbers

To resolve these issues, the firmware will need to be pushed to the matrix using the firmware recovery method. If you have changed the set up for troubleshooting since the attempted update, set the matrix back up as it was for the firmware update and then try the following process.

**Important!** Double check that the firmware file is not compressed or in a compressed folder. Attempting an update with a compressed firmware file will cause the update to fail until the file is used in the correct format.

1. Disconnect all cables from the matrix except the power connection and serial connection to the PC. Leave the matrix powered at this time.
2. Toggle the matrix front panel power button to the “On” position.
3. Close and re-open the Matrix Configuration Utility on the PC.
4. Leave the status at “Not Connected.” The Utility does not need to be connected for this procedure.
5. Select the correct COM port that is being used on the PC from the drop down.
6. Click “Firmware Update”. Load the firmware file for the model in use. At this point, a message will appear:



Click “OK” and then click “Start”.

7. The remainder of the procedure is the same as a standard update (see Section 9.1-Updating HDMATRIX 4x4). After the power is cycled, the update should run correctly. After the update completes, power cycle the matrix and use the Configuration Utility to check that the firmware is now current and that switch is operating correctly.

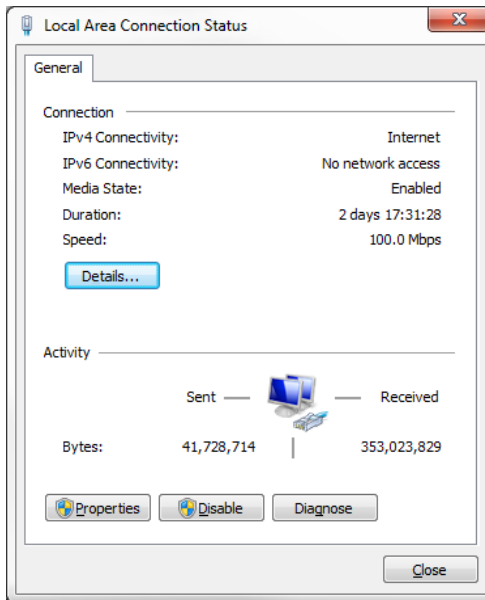
## 9.3 Updating HDMATRIX 8x8

During the firmware update process an 8x8 matrix automatically and temporarily defaults to the IP address **192.168.1.31** regardless of any other configured network settings. It is important that no device other than the 8x8 matrix use this IP address on the network that it is connected to.

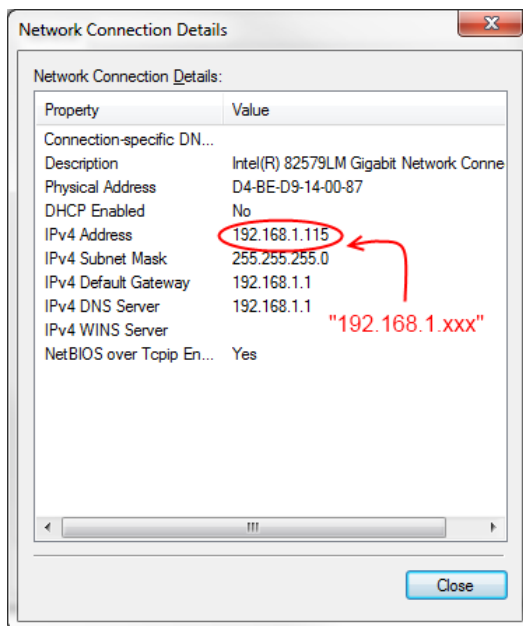
Please read through the following steps in detail before continuing with the firmware update.

If the Configuration Utility is open and connected to an 8x8 matrix, disconnect and close the Configuration Utility application at this time.

8. Connect the 8x8 Matrix to the PC
  - A. Ensure the HDMATRIX is turned OFF (front panel POWER button is in the out position).
  - B. Connect the HDMATRIX RS-232 port to the PC using a DB9 RS-232 cable.
  - C. Connect the HDMATRIX Ethernet port directly to the PC Ethernet port.
9. Verify PC IP Configuration
  - A. Open the Local Area Connection Status window.



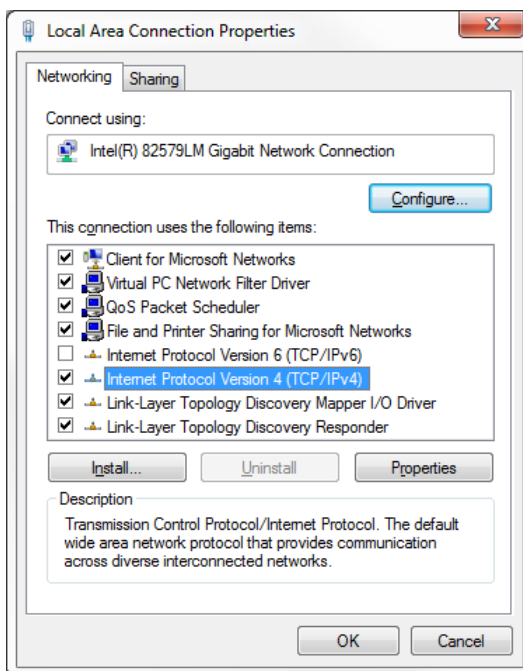
B. Select **Details...** and observe the **IP Address** or **IPv4 Address**:



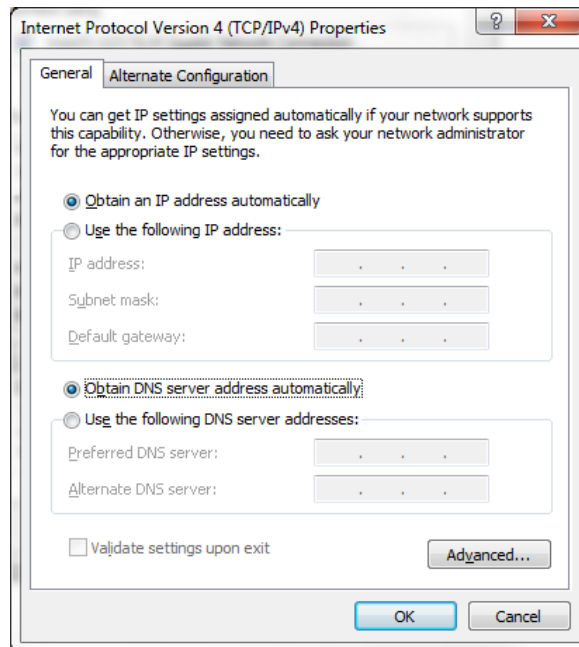
10. If the IP address is 192.168.1.xxx, proceed to step 5.

11. Set the PCs IP Configuration

A. Open the Local Area Connection properties window:

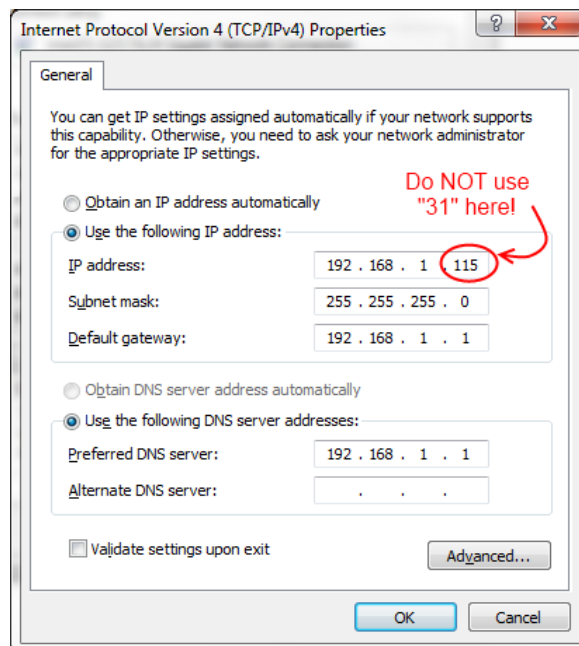


- B. Select Internet Protocol or Internet Protocol Version 4, and then select Properties. Often this will be set to obtain settings automatically:



**NOTE:** If this is **NOT** set to obtain settings automatically, record the information in all fields so it can be restored later.

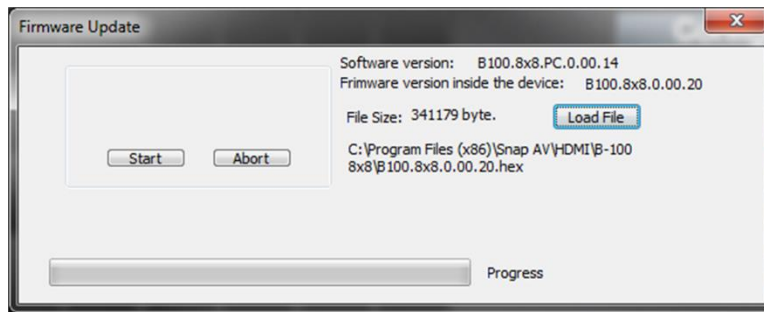
- C. Configure Internet Protocol to use settings for a 192.168.1.xxx domain, where xxx is any available IP address EXCEPT for 31.



- D. Select **OK** and continue with the next step.

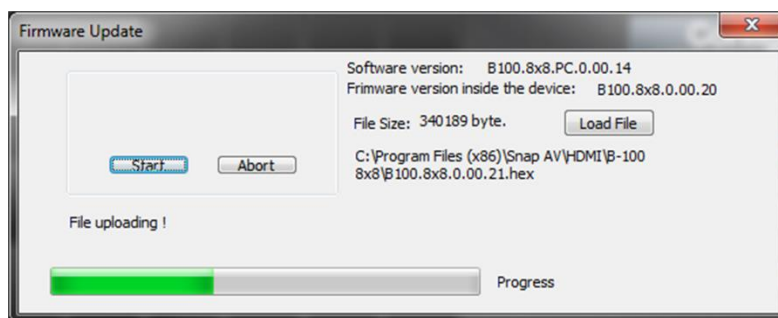
## 12. Update the HDMATRIX 8x8 Firmware

- A. Open Configuration Utility and select **Firmware Update**.
- B. In the Firmware Update window:
  - B.1. Select **Load File** to open the File Selector.
  - B.2. Find and select the firmware update file.
  - B.3. Select the **Open** button.
  - B.4. Verify the path and selected file name appear in the Firmware Update window.



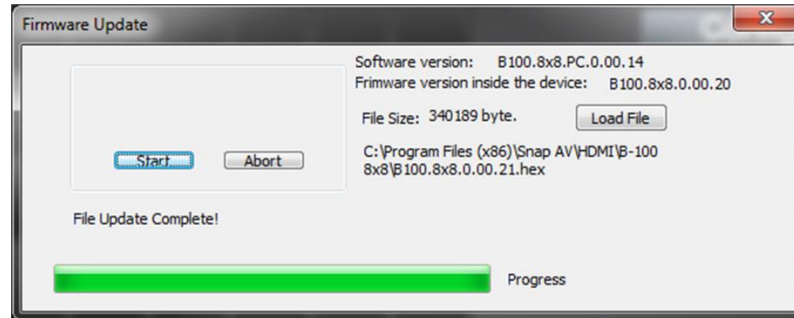
**NOTE:** The steps which follow **MUST** be performed in sequence within given time frames. Please review instructions before proceeding with the update, and follow the steps as directed.

- C. Select the **Start** button.
- D. The Firmware Update window will indicate, **Waiting!**.
- E. At the HDMATRIX, verify that the front panel Power button is in the **OFF** (out) position.
- F. At the HDMATRIX, remove power to the chassis by unplugging the power supply connector.
- G. After **5 seconds**, restore power by plugging the power supply connector back into the HDMATRIX.
- H. Observe the Firmware Update status bar.
- I. The Firmware Update window will indicate **File uploading!** and the Progress bar will begin incrementing.





- If the firmware update is successful, the Firmware Update window will indicate **File Update Complete!.**
- If the firmware update does not start or was not successful, turn the HDMATRIX Off and repeat steps B. through J. If the update still does not work, see section 9.4HDMATRIX-8X8 Firmware Recovery.
- If the firmware update was successful, reboot the HDMATRIX by removing and restoring power to the unit.



- J. When the firmware update is complete:
- J.1. Remove the Ethernet cable from between the HDMATRIX and the PC.
  - J.2. Remove the DB9 RS-232 connection between the HDMATRIX and the PC (unless needed for further configuration).
  - J.3. Refer to Step **4 Set the PCs IP Configuration** and restore the computer Local Area Connection to its previous **Internet Protocol** or **Internet Protocol V4** configuration.

## 9.4 HDMATRIX-8X8 Firmware Recovery

If an error is made in the update process, the B-100-HDMATRIX-8X8 may become unresponsive. Symptoms may include:

- No feedback or control from the matrix when switching zones
- Configuration Utility will not connect to the matrix
- Front display does not show the correct numbers

To resolve these issues, the firmware will need to be pushed to the matrix using the firmware recovery method. This procedure assumes that the PC and matrix are still connected, and an update has just failed. If you have changed the set up for troubleshooting, set the matrix back up as it was for the firmware update and then try the following process.

**Important!** Double check that the firmware file is not compressed or in a compressed folder. Attempting an update with a compressed firmware file will cause the update to fail until the file is used in the correct format.

1. Disconnect all cables from the matrix except the Ethernet cable to the PC, the power connection and serial connection to the PC.
2. Leave the matrix power switch toggled to "Off."
3. Close and re-open the Matrix Configuration Utility on the PC.
4. Leave the status of the application at "Not Connected."
5. Select the correct COM port that is being used on the PC.
6. Click "Firmware Update". Load the firmware file for the model in use.
7. Click "Start" on the firmware update screen. The status bar should begin moving from left to right within a few seconds, indicating the firmware update is in progress.
8. After the update completes, power cycle the matrix and use the Configuration Utility to check that the firmware is now current and that switch is operating correctly.

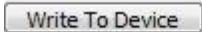
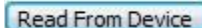
## 10 Network Configuration

### Network Configuration

Displays and Sets the Network IP address for an 8x8 matrix. This feature is not available on 4x4 matrixes.

**Note:** Only Static IP address mode is available – DHCP is not supported.

The screenshot shows a 'Device Setting' dialog box with a title bar containing a close button (X). Inside the dialog, under the 'Ethernet' section, there are five input fields for IP configuration: IP (192 . 168 . 1 . 31), MASK (255 . 255 . 255 . 0), GATEWAY (192 . 160 . 1 . 1), DNS1 (0 . 0 . 0 . 0), and DNS2 (0 . 0 . 0 . 0). At the bottom of the dialog are two buttons: 'Write To Device' and 'Read From Device'.

<b>IP</b>	Current IP address of the matrix
<b>MASK</b>	Subnet Mask for the connected router/network
<b>GATEWAY</b>	IP address of the router/network
<b>DNS1</b>	Directory Name Service address 1
<b>DNS2</b>	Directory Name Service address 2
	Write changes to setting to the matrix
	View the current IP Configuration settings

**Note** that GATEWAY, DNS1 and DNS2 are not necessary for use within the matrix at this time but cannot be left blank, and must be set to "0.0.0.0".

Set the IP and MASK to the appropriate values for the network the 8x8 matrix is connected to. These setting do not need to change for most networks and should only be changed if different settings are required for the installation.

**Note:** After changing network configuration, the HDMatrix must be turned off and on again in order to use the new settings.

## 11 Resetting Factory defaults

### RESET FACTORY DEFAULTS

Select to restore HDMatrix to factory default settings for Inputs/Outputs

#### Factory Values:

EDIDs: 1080p Stereo  
 I/O: All Outputs set to Input 1  
 DHCP (8x8 only): Enabled

## 12 Other Settings

### Other Settings

During the installation of an HDMatrix, there are settings that provide Advanced Configuration beyond the use of the remote. These allow for fine tuning the HDMatrix when used under certain conditions and the settings listed below are not available from the remote.

### 12.1 Front Panel IR Receiver Active

Use this setting to disable the front panel IR receiver to avoid IR command conflicts and prevent IR flooding of the HDMatrix. When IR is disabled, RS232 or IP must be used to control the HDMatrix.

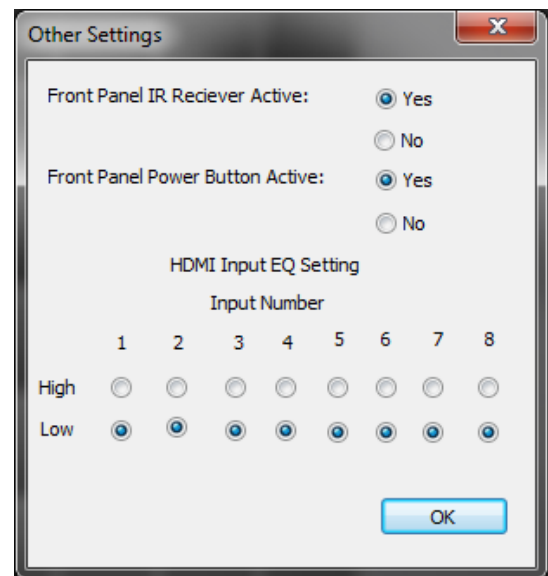
### 12.2 Front Panel Power Button Active

Use this feature to Disable/Enable the front panel power button of the HDMatrix when using an Automation System. This will prevent the HDMatrix from being powered OFF and preventing control of the device from an automation system UI.

### 12.3 HDMI Input EQ Setting

Use these settings when an HDMI image contains video noise and artifacts that can occur during switching or viewing some HDMI sources or displays.

Each input can be set to High when video noise is present. We recommend that this be set to LOW as a starting point, and only changed should video noise be present on a particular input.



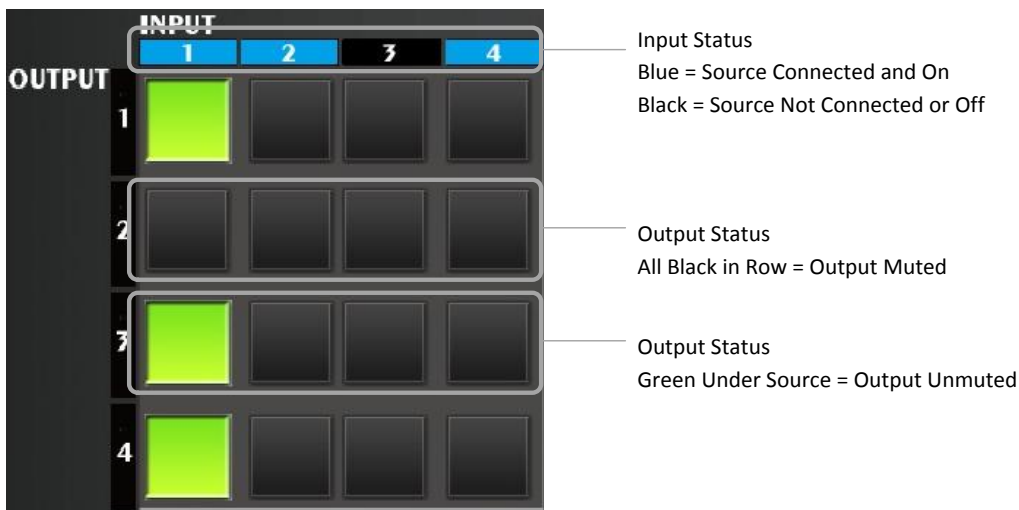
## 13 Input / Output Operation

The operating status is displayed and control of inputs and outputs is performed with the grid on the left side of the screen. It is provided so that the functionality of the system can be tested and controlled.

Here you can perform the following:

- View which inputs have sources connected and turned on
- View which outputs are un-muted
- View which input is assigned to an output
- Assign inputs to outputs

### 13.1 Connection Status



Note that a GREEN box does not indicate if a display is connected or OFF. Should no image be visible on the display, verify that it is connected and ON.

### 13.2 Input / Output Control

#### Assign a Single Input to an Output

Select a gray box under the input and next to the output. The box selected will turn GREEN.

#### Assign Any Input to All Outputs

Select the Input number in the top row. All boxes under that input will turn GREEN.

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