Thank You

We at Boulder Amplifiers would like to thank you for selecting the 1021 Network Disc Player for your audio system.

The 1021 represents the concerted efforts of numerous Boulder craftsmen, designers, engineers and technicians working to bring you the very finest audio playback components in the world. We are certain it will provide years of enjoyment.

Please take a few minutes to read through this owner's manual prior to the installation and use of your 1021. This will help you to understand the basic functions and abilities of the Player and allow you to maximize the exceptional performance for which it was designed.

Jeffrey P. Nelson, President
Boulder Amplifiers

Using the 1021 with a Home Network

Overview

In addition to being used as a traditional disc player, the 1021 can be used as the digital-to-analog converter ("renderer") portion of a networked computer audio system adhering to DLNA and UPnP protocols. Digital audio files can be streamed from a computer or NAS (network-attached storage) media server over a home computer network to the 1021 via the rear panel Ethernet port with no loss of fidelity.

The 1021 network system consists of three basic parts: a server (a home computer or media server), a renderer (the 1021) and a control point (a remote user interface). The control point may be located either on-screen in a computer-based system or as a downloadable application for mobile devices.

AIFF, ALAC, FLAC, OGG Vorbis, MP3 and WAV file streaming are supported at resolutions up to 32-bits or 192 kHz.

Possible System Configurations

There are five most likely system configurations:

1. **Storing music on a networked, Windows-based personal computer.** The control point in this scenario can be either on-screen or on a mobile device. *Please see page 3.*
2. **Storing music on a networked NAS media server that is coupled to a Windows-based personal computer.** The control point can be either on-screen or on a mobile device. *Please see page 7.*
3. **Storing music on a networked, Apple/Mac-based personal computer.** At the time of this writing, the control point in this scenario is only available on a mobile device. *Please see page 12.*
4. **Storing music on a networked NAS media server that is coupled to an Apple/Mac personal computer.** At the time of this writing, the control point in this scenario is only available on a mobile device. *Please see page 15.*
5. **Storing music on a networked NAS media server.** In this scenario, the control point must be on a mobile device. *Please see page 19.*

In all possible system configurations, the server, renderer and control point must be connected to the same network via a network router or switcher. For most solutions involving the use of a computer, server software will have to be downloaded onto the computer.

Note: *At the time of this writing, the DLNA and UPnP protocols were relatively new and the number of software suites for managing, serving and controlling media were limited. As time goes by, more and more options will become available with better and greater capabilities. A list of recommended software for both the control point and server is included on page 24.*

What You Will Need

The following items will be needed in addition to the 1021:

1. One (1) computer network router or switch
2. One (1) network ready computer
        and/or
   One (1) NAS Media Server
3. CAT-5 (or better) Ethernet cables to connect the system
4. *Optional:* a wireless network capable mobile device where control point software can be downloaded.

Connecting the 1021 to Your Network

Because there are many different ways to operate the 1021 within a networked audio system, you will need to discuss all options with your dealer. Once you have settled on a system option, please locate the portion of this manual that refers to the configuration you will use for basic installation instructions.

Connecting the 1021 to a Networked, Windows-based Personal Computer

1. All connections to all pieces of equipment should be made with the power **OFF**.

2. The 1021 must be connected to your computer network via a network router with CAT-5 (or better) data cable. With the 1021 rear panel **Master AC Power** switch in the **OFF** position, place the 1021 near the location where it will be permanently installed. Connect one end of a CAT-5 data cable to the Ethernet port on

the rear panel of the 1021. The AC power cord and Left and Right analog output cables should also be connected.

3. Install the 1021 where it will be permanently located.

4. Locate the position where the network router will be permanently installed. It is recommended that the local network you will use for the 1021 has Internet access, though it is not required. In the event that the track list information for some CDs is not available in the 1021's internal database, a live Internet connection will allow it to download this information and add it to its internal memory.

    Note: *For a list of recommended router specifications please see page 25. The set up and installation of different routers will vary by manufacturer. Please refer to the instructions that came with your router for the proper set up procedure.*

5. The router location should have clear access to the Ethernet cable for the 1021 and the network computer. Any additional products you wish to connect to your network should also be available at this location.

    It is not possible to connect the 1021 to your network wirelessly. It may be possible, however, to connect your computer to the network via a wireless connection. Boulder strongly recommends a wired connection to your computer whenever possible, as there may be problems with interrupted data delivery to the network in certain wireless installations. This connection should be made via CAT-5 (or better) cable.

6. Your home Internet source should be connected at the router's "INTERNET" input connection. The Ethernet cable to the 1021 should be installed in one of the available data ports. The Ethernet cable to the computer should be installed in one of the remaining data ports.

7. If you will be using a mobile device as a control point, you must now download and install the control point software on your mobile device. *For a list of recommended mobile devices and software applications, please see page 24.* If you will not be using a mobile device as a control point, you will need to select a server software suite for your computer that includes an on-

screen control point. *For a list of recommended server software suites, please see page 24.*

8. Server software must now be loaded onto your computer. *For a list of recommended server software suites, please see page 24.* Please install the software on your computer as per the instructions provided by the software manufacturer. Power down the computer after the installation is complete. You should now connect your computer to the 1021 network via a CAT-5 Ethernet cable.

9. You must now choose the file format you wish to use to store any music you rip to your computer from existing CDs. WAV and AIFF files are uncompressed and will allow you to store your music exactly as it is encoded on the disc, however your music will take up larger portions of space on the computer's hard drive. All other file formats feature some form compression with varying degrees of transparency, though they will take up much less space on the computer's hard drive.

    If you are using **iTunes** to manage your music, select "**Preferences**" under the **iTunes Menu**. In the "**General**" section of the iTunes Preferences, click on the "**Import Settings**" button and select the file type you would like to use on the "**Import Using**" drop down list. On the "**Setting**" drop down list, select "**Custom**." In the **Encoder Menu** that appears, select "**44.100 kHz**" for the Sample Rate, "**16 bit**" for the Sample Size, and "**Auto**" for the Channels.

    If you are using **Windows Media Player** to manage your music, go to the "**Tools**" menu and click on "**Options**." In the Options menu, click on the tab labeled "**Rip Music**" and uncheck the box marked "**Rip CD Automatically**."

    In the "**Format**" drop down list, you will need to select "**MP3**" or "**WAV**." If you are going to use Windows Media Player as your server software, "**MP3**" must be selected. If you will use other server software, either "**MP3**" or "**WAV**" can be selected. If you select "MP3," the "**Audio Quality**" slider must be moved all the way to the right for the best sound quality.

10. Once your media manager is configured, you are now ready to play music through the system. Power **ON** the 1021 using the rear panel **Master AC Switch**. If you are using a mobile device as

a control point, please wait until the 1021 has completed its boot-up sequence prior to turning **ON** the control point. When the 1021 is turned **ON**, it will automatically connect to the Ethernet. This may take a minute or two. No manual I.P. address assignment is necessary.

11. At this time you should check the I.P. address of the 1021. To navigate to this page of the **Network Menu**, press the **Options** button on the remote control or the front panel of the 1021. Use the **Navigate Up** or **Navigate Down** button and then press **Enter** once the **Network Menu** option is highlighted. The following options are available in the Network Menu:

    a. **Link**

    The Link option indicates whether or not the 1021 has an active Ethernet connection. If an active connection is present, the Link option will read **Up**. If an active connection is not present, the Link option will read **Down**.

    b. **Address**

    The Address option shows the network address that has been automatically assigned to the 1021. The network address cannot be adjusted or changed from the menu system.

12. Using the control point on your computer or mobile device you should now be able to select individual tracks, complete genres, artists, albums or any number of other playlists. For help with the control point navigation, you will need to follow the instructions for the software you have selected.

    a. If you are using a mobile device-based control point application, you will be able to use the mobile device as a touch screen "remote control." For iPhone or iPod Touch mobile devices, Boulder recommends the use of **PlugPlayer** as a control point.

        i. To set up PlugPlayer as a control point, open the application and touch the gear icon in the lower right-hand corner labeled "**Devices**."

        In the section labeled "**Select a Media Renderer…**," the 1021 should appear as "**Boulder 1021**." When

you touch the 1021, a check mark should appear to the left of the Boulder 1021 icon to indicate you have selected it. Scroll down the screen to the section labeled "**Select a Media Server….**" The computer server software should appear in the list. When you touch the server, a check mark should appear to the left of the server software icon to indicate you have selected it.

Touch the list icon on the bottom of the screen labeled "**Browse**." You will then see the music you have loaded onto the computer. It is possible to select a particular artist, genre, album or track, etc., and it will be added to a cued playlist.

Touch the "**Playlist**" icon at the bottom of the screen. You will see all of the music you have selected. Touch the track you wish to hear first to begin playing the system and music will start playing immediately.

Touch the "**Now Playing**" icon at the bottom of the screen to see cover art, a volume control slider and a "scrub bar" where you can move to any point in the track immediately.

ii. If you are using computer-based control point software, you will be able to use your computer to control the music you play through the system. You will need to follow the instructions for the server software to select your computer as a server, the 1021 as a renderer, select music and stream selections. *For a list of recommended server software suites, please see page 24.*

Connecting the 1021 to a Networked NAS Media Server that is Coupled to a Windows-based Personal Computer.

For a list of recommended NAS servers, please see page 25.

1. All connections to all pieces of equipment should be made with the power **OFF**.

2. The 1021 must be connected to your computer network via a network router with CAT-5 (or better) data cable. With the 1021 rear panel **Master AC Power** switch in the **OFF** position, place the 1021 near the location where it will be permanently installed. Connect one end of a CAT-5 data cable to the Ethernet port on the rear panel of the 1021. The AC power cord and Left and Right analog output cables should also be connected.

3. Install the 1021 where it will be permanently located.

4. Locate the position where the network router will be permanently installed. It is recommended that the local network you will use for the 1021 has internet access, though it is not required. In the event that the track list information for some CDs is not available in the 1021's internal database, a live internet connection will allow it to download this information and add it to its internal memory.

    Note: *For a list of recommended router specifications please see page 25. The set up and installation of different routers will vary by manufacturer. Please refer to the instructions that came with your router for the proper set up procedure.*

5. The router location should have clear access to the Ethernet cable for the 1021 as well as the network computer and NAS server connections. Any additional products you wish to connect to your network should also be available at this location.

    It is not possible to connect the 1021 to your network wirelessly. It may be possible, however, to connect your computer and/or NAS server to the network via a wireless connection. Boulder strongly recommends a wired connection to your computer and NAS server whenever possible, as there may be problems with interrupted data delivery to the network in certain wireless installations. This connection should be made via CAT-5 (or better) cable.

6. Your home Internet source connection should be installed in the router's "INTERNET" input port. The Ethernet cable to the 1021 should be installed in one of the available data ports. The Ethernet cable to the computer should be installed in one of the available data ports. The Ethernet cable to the NAS server should be installed in one of the remaining available data ports.

7. If you will be using a mobile device as a control point, you must now download and install the control point software on your mobile device. *For a list of recommended mobile devices and software applications, please see page 24.* If you will not be using a mobile device as a control point, you will need to select a server software suite for your computer that includes an on-screen control point. *For a list of recommended server software suites, please see page 24.*

8. You should now connect your computer to the 1021 network via a CAT-5 Ethernet cable.

9. The NAS sever must now be set up for your network according to the manufacturer's instructions. Your computer must be set up so that all music downloaded and ripped from existing discs will be organized by your media managing software and stored on the NAS server.

    If you are using **iTunes** to manage your music, the media folder location is set up in the "**Advanced**" section of "**Preferences**" in the iTunes menu. The file location address should be on the NAS server.

    If you are using **Windows Media Player** to manage your music, the media folder location is set up in the "**Tools**" menu. Click on "**Options**" in the Tools menu and then click on the tab labeled "**Rip Music**." In the section titled "**Rip Music To This Location**" Windows Media Player should be pointed at your NAS music server.

10. You must now choose the file format you wish to use to store any music you rip to the server from existing CDs. WAV and AIFF files are uncompressed and will allow you to store your music exactly as it is encoded on the disc, however your music will take up larger portions of space on the server's hard drive. All other file formats feature some form compression with varying degrees of transparency, though they will take up much less space on the server's hard drive.

    If you are using **iTunes** to manage your music, select "**Preferences**" under the **iTunes** menu. In the "**General**" section of the iTunes Preferences, click on the "**Import Settings**" button and select the file type you would like to use on the "**Import**

Using" drop down list. On the "**Setting**" drop down list, select "**Custom**." In the **Encoder Menu** that appears, select "**44.100 kHz**" for the Sample Rate, "**16 bit**" for the sample size, and "**Auto**" for the Channels.

If you are using **Windows Media Player** to manage your music, go to the "**Tools**" menu and click on "**Options**." In the Options menu, click on the tab labeled "**Rip Music**" and uncheck the box marked "**Rip CD Automatically**."

In the "**Format**" drop down list, you will need to select "**MP3**" or "**WAV**." If you are going to use Windows Media Player as your server software, "**MP3**" must be selected. If you will use other server software, either "**MP3**" or "**WAV**" can be selected. If you select "MP3," the "**Audio Quality**" slider must be moved all the way to the right for the best sound quality.

11. Once your media manager software is pointed at your server, the file format is selected and music has been stored, you are now ready to play music through the system. Power **ON** the 1021 using the rear panel **Master AC Switch**. If you are using a mobile device as a control point, please wait until the 1021 has completed its boot-up sequence prior to turning **ON** the control point. When the 1021 is turned **ON**, it will automatically connect to the Ethernet. No manual I.P. address assignment is necessary.

12. At this time you should check the I.P. address of the 1021. To navigate to this page of the **Network Menu**, press the **Options** button on the remote control or the front panel of the 1021. Use the **Navigate Up** or **Navigate Down** button and then press **Enter** once the **Network Menu** option is highlighted. The following options are available in the Network Menu:

   a. **Link**

      The Link option indicates whether or not the 1021 has an active Ethernet connection. If an active connection is present, the Link option will read **Up**. If an active connection is not present, the Link option will read **Down**.

   b. **Address**

      The Address option shows the network address that has been automatically assigned to the 1021. The network

address cannot be adjusted or changed from the menu system.

13. Using the control point on your computer or mobile device you should now be able to select individual tracks, complete genres, artists, albums or any number of other playlists. For help with the control point navigation, you will need to follow the instructions for the software you have selected.

   a. If you are using a mobile device-based control point application, you will be able to use the mobile device as a touch screen "remote control." Boulder recommends **PlugPlayer** as a control point for the iPhone or iPod Touch.

      i. To set up PlugPlayer as a control point, open the application and touch the gear icon in the lower right-hand corner labeled "**Devices**."

      In the section labeled "**Select a Media Renderer…**," the 1021 should appear as "**Boulder 1021**." When you touch the 1021, a check mark should appear to the left of the 1021 icon to indicate you have selected it. Scroll down the screen to the section labeled "**Select a Media Server…**." The server should appear in the list. When you touch the server, a check mark should appear to the left of the server icon to indicate you have selected it.

      Touch the list icon on the bottom of the screen labeled "**Browse**." You will see the music you have loaded onto the server. When you touch a particular artist, genre, album, track, etc., it will be added to a cued playlist.

      Touch the "**Playlist**" icon at the bottom of the screen. You will see all of the music you have selected. Touch the track you wish to hear first to begin playing the system and music will start playing immediately.

      Touch the "**Now Playing**" icon at the bottom of the screen to see cover art, a volume control slider and a "scrub bar" where you can move to any point in the track immediately.

      ii. If you are using computer-based control point software, you will be able to use your computer to control the music

you play from the system. You will need to follow the instructions for using the server software to select the 1021 as a renderer, select music and stream selections. *For a list of recommended server software suites, please see page 24.*

Connecting the 1021 to a Networked, Apple/Mac-based Personal Computer

1. All connections to all pieces of equipment should be made with the power **OFF**.

2. The 1021 must be connected to your computer network via a network router with CAT-5 (or better) data cable. With the 1021 rear panel **Master AC Power** switch in the **OFF** position, place the 1021 near the location where it will be permanently installed. Connect one end of a CAT-5 data cable to the Ethernet port on the rear panel of the 1021. The AC power cord and Left and Right analog output cables should also be connected.

3. Install the 1021 where it will be permanently located.

4. Locate the position where the network router will be permanently installed. It is recommended that the local network you will use for the 1021 has Internet access, though it is not required. In the event that the track list information for some CDs is not available in the 1021's internal database, a live Internet connection will allow it to download this information and add it to its internal memory.

   Note: For a list of recommended router specifications please see page 25. The set up and installation of different routers will vary by manufacturer. Please refer to the instructions that came with your router for the proper set up procedure.

5. The router location should have clear access to the Ethernet cable for the 1021 and the network computer. Any additional products you wish to connect to your network should also be available at this location.

   It is not possible to connect the 1021 to your network wirelessly. It may be possible, however, to connect your computer to the network via a wireless connection. Boulder strongly recommends a wired connection to your computer whenever

possible, as there may be problems with interrupted data delivery to the network in certain wireless installations. This connection should be made via CAT-5 (or better) cable.

6. Your home Internet source connection should be installed in the router's "INTERNET" input port. The Ethernet cable to the 1021 should be installed in one of the available data ports. The Ethernet cable to the computer should be installed in one of the remaining data ports.

7. When using an Apple/Mac computer to store your music, a mobile device must be used as a control point. You must now download and install the control point software on your mobile device. *For a list of recommended mobile devices and software applications, please see page 24.*

8. Server software must now be loaded onto your computer. *For a list of recommended server software suites, please see page 24.* Please install the software on your computer as per the instructions provided by the software manufacturer. Power down the computer after the installation is complete. You should now connect your computer to the 1021 network via a CAT-5 Ethernet cable.

9. You must now choose the file format you wish to use to store any music you rip to your computer from existing CDs. WAV and AIFF files are uncompressed and will allow you to store your music exactly as it is encoded on the disc, however your music will take up larger portions of space on the computer's hard drive. All other file formats feature some form compression with varying degrees of transparency, though they will take up much less space on the computer's hard drive.

   When using **iTunes** to manage your music library, select "**Preferences**" under the **iTunes Menu**. In the "**General**" section of iTunes Preferences, click on the "**Import Settings**" button and select the file type you would like to use on the "**Import Using**" drop down list. On the "**Setting**" drop down list, select "**Custom**." In the **Encoder Menu** that appears, select "**44.100 kHz**" for the Sample Rate, "**16 bit**" for the Sample Size, and "**Auto**" for the Channels.

10. Once your media manager is configured, you are now ready to play music through the system. Power **ON** the 1021 using the

rear panel **Master AC Switch**. Please wait until the 1021 has completed its boot-up sequence prior to turning **ON** the control point. When the 1021 is turned **ON**, it will automatically connect to the Ethernet. This may take a minute or two. No manual I.P. address assignment is necessary.

11. At this time you should check the I.P. address of the 1021. To navigate to this page of the **Network Menu**, press the **Options** button on the remote control or the front panel of the 1021. Use the **Navigate Up** or **Navigate Down** button and then press **Enter** once the **Network Menu** option is highlighted. The following options are available in the Network Menu:

    a. **Link**

       The Link option indicates whether or not the 1021 has an active Ethernet connection. If an active connection is present, the Link option will read **Up**. If an active connection is not present, the Link option will read **Down**.

    b. **Address**

       The Address option shows the network address that has been automatically assigned to the 1021. The network address cannot be adjusted or changed from the menu system.

12. Using the control point, you should now be able to select individual tracks, genres, artists, albums or any number of other playlists. For help with the control point navigation, you will need to follow the instructions for the software you have selected.

    a. When using a mobile device-based control point application, you will be able to use the mobile device as a touch screen "remote control." For iPhone or iPod Touch mobile devices, Boulder recommends the use of **PlugPlayer** as a control point.

       i. To set up PlugPlayer as a control point, open the application and touch the gear icon in the lower right-hand corner labeled "**Devices**."

          In the section labeled "**Select a Media Renderer…**," the 1021 should appear as "**Boulder 1021**." When you touch the 1021, a check mark should appear to

the left of the Boulder 1021 icon to indicate you have selected it. Scroll down the screen to the section labeled "**Select a Media Server….**" The computer server software should appear in the list. When you touch the server, a check mark should appear to the left of the server software icon to indicate you have selected it.

Touch the list icon on the bottom of the screen labeled "**Browse.**" You will then see the music you have loaded onto the computer. It is possible to select a particular artist, genre, album, track, etc., and it will be added to a cued playlist.

Touch the "**Playlist**" icon at the bottom of the screen. You will see all of the music you have selected. Touch the track you wish to hear first to begin playing the system and music will start playing immediately.

Touch the "**Now Playing**" icon at the bottom of the screen to see cover art, a volume control slider and a "scrub bar" where you can move to any point in the track immediately.

ii. If you are using computer-based control point software, you will be able to use your computer to control the music you play through the system. You will need to follow the instructions for the server software to select your computer as a server, the 1021 as a renderer, select music and stream selections. *For a list of recommended server software suites, please see page 24.*

Connecting the 1021 to a Networked NAS Media Server that is Coupled to an Apple/Mac-based Personal Computer.

For a list of recommended NAS servers, please see page 25.

1. All connections to all pieces of equipment should be made with the power **OFF**.

2. The 1021 must be connected to your computer network via a network router with CAT-5 (or better) data cable. With the 1021

rear panel **Master AC Power** switch in the **OFF** position, place the 1021 near the location where it will be permanently installed. Connect one end of a CAT-5 data cable to the Ethernet port on the rear panel of the 1021. The AC power cord and Left and Right analog output cables should also be connected.

3. Install the 1021 where it will be permanently located.

4. Locate the position where the network router will be permanently installed. It is recommended that the local network you will use for the 1021 has Internet access, though it is not required. In the event that the track list information for some CDs is not available in the 1021's internal database, a live Internet connection will allow it to download this information and add it to its internal memory.

   Note: For a list of recommended router specifications please see page 25. The set up and installation of different routers will vary by manufacturer. Please refer to the instructions that came with your router for the proper set up procedure.

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6. Your home Internet source connection should be installed in the router's "INTERNET" input port. The Ethernet cable to the 1021 should be installed in one of the available data ports. The Ethernet cable to the computer should be installed in one of the available data ports. The Ethernet cable to the NAS server should be installed in one of the remaining available data ports.

7. When using an Apple/Mac computer, a mobile device must be used as a control point. You must now download and install the control point software on your mobile device. *For a list of recommended mobile devices and software applications, please see page 24.*

8. You should now connect your computer to the 1021 network via a CAT-5 Ethernet cable.

9. The NAS sever must now be set up for your network according to the manufacturer's instructions. Your computer must be set up so that all music downloaded and ripped from existing discs will be organized by your media manager software and stored on the NAS server.

   When using **iTunes** to manage your music, the media folder location is set up in the "**Advanced**" section of "**Preferences**" in the iTunes menu. The file location address should be on the NAS server.

10. You must now choose the file format you wish to use to store any music you rip to the server from existing CDs. WAV and AIFF files are uncompressed and will allow you to store your music exactly as it is encoded on the disc, however your music will take up larger portions of space on the server's hard drive. All other file formats feature some form compression with varying degrees of transparency, though they will take up much less space on the server's hard drive.

    When using **iTunes** to manage your music, select "**Preferences**" under the **iTunes** menu. In the "**General**" section of the iTunes Preferences, click on the "**Import Settings**" button and select the file type you would like to use on the "**Import Using**" drop down list. On the "**Setting**" drop down list, select "**Custom.**" In the **Encoder Menu** that appears, select "**44.100 kHz**" for the Sample Rate, "**16 bit**" for the sample size, and "**Auto**" for the Channels.

11. Once your media manager software is pointed at your server, the file format is selected and music has been stored, you are now ready to play music through the system. Power **ON** the 1021 using the rear panel **Master AC Switch**. Please wait until the 1021 has completed its boot-up sequence prior to turning **ON** the control point. When the 1021 is turned **ON**, it will automatically

connect to the Ethernet. No manual I.P. address assignment is necessary.

12. At this time you should check the I.P. address of the 1021. To navigate to this page of the **Network Menu**, press the **Options** button on the remote control or the front panel of the 1021. Use the **Navigate Up** or **Navigate Down** button and then press **Enter** once the **Network Menu** option is highlighted. The following options are available in the Network Menu:

    a. **Link**

       The Link option indicates whether or not the 1021 has an active Ethernet connection. If an active connection is present, the Link option will read **Up**. If an active connection is not present, the Link option will read **Down**.

    b. **Address**

       The Address option shows the network address that has been automatically assigned to the 1021. The network address cannot be adjusted or changed from the menu system.

13. Using the control point you should now be able to select individual tracks, complete genres, artists, albums or any number of other playlists. For help with the control point navigation, you will need to follow the instructions for the software you have selected.

    a. When using a mobile device-based control point application, you are able to use the mobile device as a touch screen "remote control." Boulder recommends the **PlugPlayer** application for the iPhone or iPod Touch.

       i. To set up PlugPlayer as a control point, open the application and touch the gear icon in the lower right-hand corner labeled "**Devices**."

          In the section labeled "**Select a Media Renderer…**," the 1021 should appear as "**Boulder 1021**." When you touch the 1021, a check mark should appear to the left of the Boulder 1021 icon to indicate you have selected it. Scroll down the screen to the

section labeled "**Select a Media Server….**" The server should appear in the list. When you touch the server, a check mark should appear to the left of the server icon to indicate you have selected it.

Touch the list icon on the bottom of the screen labeled "**Browse**." You will see the music you have loaded onto the server. When you touch a particular artist, genre, album, track, etc., it will be added to a cued playlist.

Touch the "**Playlist**" icon at the bottom of the screen. You will see all of the music you have selected. Touch the track you wish to hear first to begin playing the system and music will start playing immediately.

Touch the "**Now Playing**" icon at the bottom of the screen to see cover art, a volume control slider and a "scrub bar" where you can move to any point in the track immediately.

Connecting the 1021 to a Networked NAS Media Server and Using a Mobile Device as a Control Point.

For a list of recommended NAS servers, please see page 25.

1. All connections to all pieces of equipment should be made with the power **OFF**.

2. The 1021 must be connected to your computer network via a network router with CAT-5 (or better) data cable. With the 1021 rear panel **Master AC Power** switch in the **OFF** position, place the 1021 near the location where it will be permanently installed. Connect one end of a CAT-5 data cable to the Ethernet port on the rear panel of the 1021. The AC power cord and Left and Right analog output cables should also be connected.

3. Install the 1021 where it will be permanently located.

4. Locate the position where the network router will be permanently installed. It is recommended that the local network you will use for the 1021 has Internet access, though it is not required. In the event that the track list information for some CDs

is not available in the 1021's internal database, a live Internet connection will allow it to download this information and add it to its internal memory.

Note: For a list of recommended router specifications please see page 25. The set up and installation of different routers will vary by manufacturer. Please refer to the instructions that came with your router for the proper set up procedure.

5. The router location should have clear access to the Ethernet cable for the 1021 as well as the NAS server connection. Any additional products you wish to connect to your network should also be available at this location.

    It is not possible to connect the 1021 to your network wirelessly. It may be possible, however, to connect your NAS server to the network via a wireless connection. Boulder <u>strongly</u> recommends a wired connection to your NAS server whenever possible, as there may be problems with interrupted data delivery to the network in certain wireless installations. This connection should be made via CAT-5 (or better) cable.

6. Your home Internet source connection should be installed in the router's "INTERNET" input port. The Ethernet cable to the 1021 should be installed in one of the available data ports. The Ethernet cable to the NAS server should be installed in one of the remaining available data ports.

7. A mobile device must be used as a control point. You must now download and install the control point software on your mobile device. *For a list of recommended mobile devices and software applications, please see page 24.*

8. The NAS sever must now be set up for your network according to the manufacturer's instructions.

    Some NAS servers have an internal disc drive that allows them to store or "rip" music to a library automatically. For this type of NAS server, the media managing system should be configured during the initial set up procedure using a computer. *Please refer to the NAS server's Owner's Manual for instructions to configure the file system to manage your music library.*

If your NAS server does not have an internal disc drive, a computer must be used to rip music onto the NAS server. This computer must be set up so that all music downloaded and ripped from existing discs will be organized by your media managing software and stored on the NAS server.

If you are using **iTunes** to manage your music, the media folder location is set up in the "**Advanced**" section of "**Preferences**" in the **iTunes Menu**. The file location address should be set to the NAS server.

If you are using **Windows Media Player** to manage your music, the media folder location is set up in the "**Tools**" menu. Click on "**Options**" in the Tools menu and then click on the tab labeled "**Rip Music**." In the section titled "**Rip Music To This Location**" Windows Media Player should be pointed at your NAS music server.

9. You must now choose the file format you wish to use to store any music you rip to the server from existing CDs. WAV and AIFF files are uncompressed and will allow you to store your music exactly as it is encoded on the disc, however your music will take up larger portions of space on the server's hard drive. All other file formats feature some form compression with varying degrees of transparency, though they will take up much less space on the server's hard drive.

   If your NAS server has an internal disc drive, please refer to the NAS server's Owner's Manual for instructions to configure the file formatting when ripping your music library.

   If your NAS server does not have an internal disc drive, your media managing software must be configured for ripping your music library.

   If you are using **iTunes** to manage your music, select "**Preferences**" under the **iTunes Menu**. In the "**General**" section of iTunes Preferences, click on the "**Import Settings**" button and select the file type you would like to use on the "**Import Using**" drop down list. On the "**Setting**" drop down list, select "**Custom**." In the **Encoder Menu** that appears, select "**44.100 kHz**" for the Sample Rate, "**16 bit**" for the sample size, and "**Auto**" for the Channels.

If you are using **Windows Media Player** to manage your music, go to the "**Tools**" menu and click on "**Options**." In the Options menu, click on the tab labeled "**Rip Music**" and uncheck the box marked "**Rip CD Automatically**."

In the "**Format**" drop down list, you will need to select "**MP3**" or "**WAV**." If you are going to use Windows Media Player as your server software, "**MP3**" must be selected. If you will use other server software, either "**MP3**" or "**WAV**" can be selected. If you select "MP3," the "**Audio Quality**" slider must be moved all the way to the right for the best sound quality.

10. Once your NAS server and/or media managing software is configured and music has been ripped, you are now ready to play music through the system. Power **ON** the 1021 using the rear panel **Master AC Switch**. Please wait until the 1021 has completed its boot-up sequence prior to turning **ON** the control point. When the 1021 is turned **ON**, it will automatically connect to the Ethernet. No manual I.P. address assignment is necessary.

11. At this time you should check the I.P. address of the 1021. To navigate to this page of the **Network Menu**, press the **Options** button on the remote control or the front panel of the 1021. Use the **Navigate Up** or **Navigate Down** button and then press **Enter** once the **Network Menu** option is highlighted. The following options are available in the Network Menu:

  c. **Link**

  The Link option indicates whether or not the 1021 has an active Ethernet connection. If an active connection is present, the Link option will read **Up**. If an active connection is not present, the Link option will read **Down**.

  d. **Address**

  The Address option shows the network address that has been automatically assigned to the 1021. The network address cannot be adjusted or changed from the menu system.

12. Using the control point on your mobile device you should now be able to select individual tracks, complete genres, artists, albums or any number of other playlists. For help with the control

point navigation, you will need to follow the instructions for the software you have selected.

a. If you are using a mobile device-based control point application, you will be able to use the mobile device as a touch screen "remote control." Boulder recommends **PlugPlayer** as a control point for the iPhone or iPod Touch.

    i. To set up PlugPlayer as a control point, open the application and touch the gear icon in the lower right-hand corner labeled "**Devices**."

In the section labeled "**Select a Media Renderer…**," the 1021 should appear as "**Boulder 1021**." When you touch the 1021, a check mark should appear to the left of the Boulder 1021 icon to indicate you have selected it. Scroll down the screen to the section labeled "**Select a Media Server…**." The NAS server should appear on the list. When you touch the NAS server, a check mark should appear to the left of the server icon to indicate you have selected it.

Touch the list icon on the bottom of the screen labeled "**Browse**." You will see the music you have loaded onto the NAS server. When you touch a particular artist, genre, album, track, etc., it will be added to a cued playlist.

Touch the "**Playlist**" icon at the bottom of the screen. You will see all of the music you have selected. Touch the track you wish to hear first to begin playing the system and music will start playing immediately.

Touch the "**Now Playing**" icon at the bottom of the screen to see cover art, a volume control slider and a "scrub bar" where you can move to any point in the track immediately.

Server Software Suites for Use with the 1021 Network Disc Player

The table below shows a number of DLNA and UPnP server software suites that are known to work in different capacities with the 1021 at the time of this writing. This matrix should be used to select the server software that is best for the operating system, music formats, music resolutions and control point you will be using. If you have any questions about which software to select and install, please contact your dealer before installing any software.

	Operating System Compatibility				Format Compatibility								Includes On-Screen Control Point
	Linux	OSX	Windows 7	Windows XP	AIFF	ALAC	Album Artwork	FLAC	High Resolution	MP3	OGG Vorbis	WAV	
Allegro Media Server	•	•		•								•	
EyeConnect	•					•						•	
Media Tomb	•	•		•	•	•	•			•	•	•	
Playback		•			•			•	•	•	•	•	
Rivet		•			•			•	•	•	•	•	
Twonky Media Manager			•	•	•	•	•	•	•	•	•	•	•
Twonky Media Server		•	•	•	•	•	•	•	•	•	•	•	
Windows Media Player			•	•						•		•	•

Control Point Mobile Devices and Applications

The table below shows a number of mobile devices and control point applications that are known to work with the 1021 at the time of this writing. This matrix should be used to select the mobile device and control point application you will be using. If you have any questions about which device or application to select, please contact your dealer for further advice and instruction.

		Application					
		AndroMote	iMediaShare	Media:Connect	Nasau	PlugPlayer	Twonky Server Mobile
Mobile Device	**Droid**	•	•				•
	iPod Touch		•	•	•	•	
	iPhone		•	•	•	•	
Format Compatibility	**AIFF**	?	?	•	•	•	•
	ALAC	?	?	•		•	•
	Album Artwork	?	?	•		•	
	FLAC	?	?	•		•	•
	Hi-Res	?	?	•		•	•
	MP3	•	?	•		•	•
	OGG	?	?			•	•
	WAV	?	?	•	•	•	•

NAS Servers for Use with the 1021 Network Disc Player

The table below shows NAS servers that are known to work in different capacities with the 1021 at the time of this writing. This matrix should be used to select the NAS server that is best for the media manager, music formats, music resolutions and control point you will be using. If you have any questions about which NAS server to select and install, please contact your dealer before purchasing any NAS server. Please also be aware that there may be many more NAS server options that are not listed in this matrix.

<table>
<tr><th colspan="2" rowspan="2"></th><th colspan="4">NAS Server</th></tr>
<tr><th>Linksys NMH4xx Series</th><th>Netgear ReadyNAS Duo</th><th>RipNAS</th><th>RipNAS Statement</th></tr>
<tr><td rowspan="9">Format Compatibility</td><td>AIFF</td><td>•</td><td></td><td>•</td><td>•</td></tr>
<tr><td>ALAC</td><td>•</td><td></td><td>•</td><td>•</td></tr>
<tr><td>Album Artwork</td><td>•</td><td>•</td><td>•</td><td>•</td></tr>
<tr><td>FLAC</td><td>•</td><td>•</td><td>•</td><td>•</td></tr>
<tr><td>Hi-Res</td><td>•</td><td>•</td><td>•</td><td>•</td></tr>
<tr><td>MP3</td><td>•</td><td></td><td>•</td><td>•</td></tr>
<tr><td>OGG</td><td></td><td></td><td>•</td><td>•</td></tr>
<tr><td>WAV</td><td>•</td><td>•</td><td>•</td><td>•</td></tr>
</table>

Recommended Router Specifications

The following guidelines should be used when choosing a router for use with the 1021:

- 802.11G or N (or better)
- Wireless capability for use with mobile control points
- 2.4 GHz (or better)