Guide to Network Audio

This guide covers the key elements of Network Audio:

Further information can be found on our Product Support page
on our website: www.pliniusaudio.com

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Part 1: Creating Digital Audio Files

Getting music to sound good on any system starts with good quality data. If we have a good quality recording stored in a good quality file format then we are off to a good start. This is just as true of vinyl pressings as it is of digital files.

This paper starts with the assumption that you will want to access good quality music files without getting too technical about bits and sampling rates used by different file types.

Ripping CD's involves taking the data from the original disc and encoding it to a digital audio file. Depending on the encoding type, you can also store metadata or tags (information about the music) that identify the details of the music file to your library management software and controller, making playback of the files much more enjoyable.

Ripping software

www.dbpoweramp.com makes software that allows you to rip your CDs and store them in a directory of your choice in FLAC format which is at least the same as the regular CD quality you have been used to listening to. If you are just starting your digital music collection this is a good place to start. The software is good and the instructions in the tutorial easy to follow. You can choose other file formats than FLAC if you wish.

The suite of software from dBpoweramp allows you to compare your file with other copies people have made and get a comparison of the quality of your CD's files. Artwork associated with the CD can be accessed or stored in several ways so that the correct artwork always appears when you access an album or track from your library.

For more information refer to 'Common Music File Types and Formats' and 'Hardware and Software Providers' on our Product Support page.

Most ripping software will search online databases and will return the metadata so you don't have to enter artist, album etc. manually. For obscure, archived, or new music that is not in the databases, you can still enter the details manually. You can also edit details that were provided from the database where you feel they are not accurate.

There are several encoding options for quality and file types, which can affect the resulting file size and the time it takes to rip your CD, as well as the quality of the file you will listen to.

Things to consider
- How much storage space you have.
- What file types your equipment will play back (decode); check with Plinius info if you're unsure what your Plinius player can handle.
- How important the quality of the digital audio is to you.
- How much storage space you will need to store your full collection.
- Take into account your existing files and storage, and consider where you want to progress too.

Tips for ripping
- Quality ripping software will provide editing tools, error checking and useful ripping options.
- Lossless file types result in the best quality audio.
- Lossless file types can be checked against online data to confirm a perfect copy of the original.
- Various levels of compression are available for Lossless file types to save storage space.
- Cleaning your disc before ripping can dramatically reduce the time it takes to rip.
- File types that have metadata or ID tags embedded can provide a more enjoyable playback .
- Ensure the metadata fields (CD information tags) are correct before beginning the ripping process.
- Choose a logical folder path for storing the ripped files (For example X:\Music\Artist\Album).

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Part 2: Purchasing Digital Audio Files

As digital music becomes more and more popular, digital files can be purchased from a store in the same way of a CD or LP. In many cases they can be paid for and downloaded through online stores, but also they can be purchased as a full album on media such as data CD or USB stick. The Beatles box set is one example of this.

There are many sources of information about this subject; the range of options available for purchasing digital music covers many different file types, artists and music genres and the number is growing. But the truth is at this stage of the music industry's development it isn't that easy in practice and some sites will only sell to you if your computer logs on to the internet in the USA for example. It will get easier as more customers demand good quality high resolution files instead of the MP3 file format made popular by iTunes.

These two sites give an insight into buying good quality music files on-line:

> http://www.avrev.com/home-theater-feature-articles/audio-related-articles/seven-online-music-sources-the-standouts.html
> http://www.utexas.edu/its/secure/articles/music-sources.php

While MP3 is useful for taking music with you on a mobile device for serious listening at home you will want to access FLAC and WAV files. Look online and you will find there are stores for higher quality files from websites such as HDTracks.com (FLAC and AIFF), as well as stores for low quality files such as LastFM (MP3 files), Apple iTunes Store (AAC and protected AAC files) or Amazon.com (MP3 files).

For more information refer to 'Common Music File Types and Formats' on our Product Support page.

Music can also be purchased from recording labels with files available like Chesky Records (WAV files on CD), and even websites like Bandcamp (various file formats) where the files are available from the recording artists themselves.

This area of the digital audio world is constantly evolving. Generally constantly improving; but be aware that to some extent this is still a developing environment. We will constantly be monitoring what is going on and we value your feedback anytime so that we can update these guides. For example HDTracks.com (mentioned above) will not accept orders from a computer based outside the USA, although we expect this will change at some stage.

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Part 3: Storing & Managing Digital Audio Files

Networked music systems can help you keep all your CD collection stored more safely than on those little silver discs we have come to love and hate, in their plastic cases that split and break with constant use, and allow you to access it even more simply and easily than you do now.

Hard drive storage comes in many shapes and sizes and can in general be easily expandable with a little help. You can begin with your existing computer and add additional storage or an external hard drive if required.

A Network Attached Storage (NAS) drive is an option that can be specifically for audio and video. NAS drives usually come with a music server on board, and if the server is DLNA compatible it should work well with the Plinius Arataki and Plinius network audio players. However it is wise to check with your Plinius dealer before buying because we are in computer world with this technology and sometimes things are not all they claim to be.

A ripping NAS is another possibility and in addition to storage and file management, it also has the tools to rip your CD.

When considering storage, take into account the file quality and the file size. High quality uncompressed files are larger than compressed lossy files and may require you to expand your storage sooner, however these types of files offer the best quality.

Examples of storage include:
– On your computer (Internal Hard Disk Drive)
– External Hard Disk Drive
– Network Attached Storage (NAS): QNAP and NETGEAR are examples of NAS drives that we have found work reliably
– Ripping NAS (For ripping CD's and storing the files in one box)
– Dedicated server for example Certon, or Tempo from Digibit, are two servers that we have found very reliable.

As you rip and store more music, this becomes your music library.

To manage the files in your music library you need a music manager program or server program.

Common programs like iTunes and Windows Media Player have music manager software included. This is what shows you the album covers and allows you to browse your library.

Asset UPnP (Windows/MAC OS) and Twonky Media Manager (Windows/MAC OS) are two server programs that will manage your music files well and interface with the Arataki well.

With network audio having the music manager located where the files are stored and using the Arataki as your library controller makes navigating your music more enjoyable.

With ripped files if you have set the ripping software to place the files in a logical folder (Music>Artist>Album), this will make it easy for you to find when you want to edit files or add more to a particular artist's library.

Organise your files in a dedicated directory, typically referred to as 'Music' or 'My Music' or something similar.

In this folder should be folders for each artist and in the Artist folders should be folders for each album (For example C:Music\Artist\Album – All the songs from the album 'Rumours' by Fleetwod Mac will then be in C:Music\Fleetwood Mac\Rumours.

This format allows you to easily locate the files if you need to edit metadata tags, check the file, create back up copies, or copy the file to a new drive or server.

For more information refer to 'Hardware and Software Providers' on our Product Support page.

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Part 4: Controlling Digital Audio Files

The network controller is the tool that puts you in control of the way you see your music library and controls the way you listen to your music.

With the controller you select music from your music collection and choose whether you will listen to it now or make a play-list for later use. You choose whether you will listen to it in a random sequence or in an order you have chosen. The controller allows you to browse through your music collection, either by artist, album or name of any track and it displays for you the data you have stored about the albums and tracks.

Controllers vary in their ability to do all these things and they operate with varying degrees of speed and reliability. Choosing the Arataki gives you a

user interface that aesthetically matches the Plinius components in your music system and it gives you a controller that is simple to use that is designed by music enthusiasts for music enthusiasts.

Choosing a controller designed to match your music system is sensible. The controller and player will communicate seamlessly as they have been designed to work together from their inception whereas some controllers claim to be DLNA compatible but have taken short-cuts to manage idiosyncrasies in a particular player and are thus not properly compatible with all DLNA compatible players.

A good controller can enhance your listening session and open up an opportunity to engage with your music collection in a new way.

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Part 5: The Network

Perhaps the most important thing to start with is a good quality router. It is an interesting fact that the single most 'returned' item at Best Buy the renowned USA retailer is routers.

No-one in the IT industry will be surprised by that. It is the communications hub that manages all communication between the devices on the network and communication with the internet if you do have your music networked linked to the net. Don't skimp on this item; take advice from your local specialists.

The matter of the router can be complicated in some territories by local telecommunications companies insisting on a particular brand of router being used for connection to their network, and this can lead to a requirement for an additional router to run your music network. Your local specialists can help you with these local anomalies in network design.

For more information on different types of networks refer to 'Network Configuration Examples' on our Product Support page. This document also explains in a simple graphic how a LAN (local area network) for audio works.

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Part 6: The Player

Sometimes referred to as a 'renderer' or 'client', the digital player takes the digital stream input and converts to an analogue audio output that can be amplified through your stereo system.

The Plinius Tiki or Toko provide this function. These players handle popular file types such as FLAC, LPCM, AIFF, MP3 and more. Contact Plinius if you want to ensure your preferred file type is managed by these players.

Plinius players can access your internet connection at home and will update when new features are added to the software on board.

The quality of the DAC is paramount in ensuring the best reproduction of your audio and Plinius uses the best components and layout designs to ensure your listening experience is a high quality one.

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