# A guide to purchasing and using Digital Audio Players with an in-depth guide to the iRiver H300 series

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*Disclaimer:*

All information in this book is mine (Josie/"jaysee") unless it is otherwise cited. If it is not cited and it is yours then tell me and I will correct it. Most of the information which is not cited comes from experience and reviewing old threads on the MisticRiver boards (where my username is "jaysee") and the internet in general. As such it can not easily be cited to one individual. All information in here may be used for your own personal use. DO NOT SELL IT. If you do use it then all I ask is that you credit me or the writer with the information. It would also be nice if you asked me but at the very least give credit where credit is due either to my work or anyone's work which I have used. If you have any queries then contact me through MisticRiver (www.misticriver.net - username "jaysee") or through e-mail iamtheonlyjosie at hotmail dot com.

If any information is incorrect then I apologise from the bottom of my heart. All information is intended to be correct and you use the information at your own risk. Some of the procedures described within WILL VOID YOUR WARRANTY. I will make these clear when I describe them. I will not be held to blame if your player dies while following my instructions.

If anything is not covered in here then contact me above and tell me about it but FIRST CHECK THE OFFICIAL MANUAL. I will not cover basic information such as the functions of the various buttons and the like (see section 3.1 "My Assumptions" for more information).

The purpose of this is to answer some basic questions and compile a more comprehensive manual including non-iRiver supported functions such as skinning and theming, inskins and various programs which can be used. I will not promise that the information will always be up to date. Think of it as a work in progress.

Enjoy!

# Contents

# Chapter 1

# Preparation:

## 1.1 Choosing a player:

There are several issues when considering the purchase of any DAP regardless of the brand, here are a few:

- storage space
- cost
- video
- colour screen
- text support
- battery life
- USB-on-the-go
- format support - mp3, aac, ogg, wav, flac etc.
- Playlist support
- Third-party accessories

It is also important to think about how you want to use the player - for example, if you would like to load your music from Windows Explorer using no extra software then Apple's iPod is not for you as it requires iTunes or some other software to load music.

If you would like to do this in the easiest possible way then try visiting Excalibur's website (http://m6767.freeserverhost.net/ch which contains an automated form where you can chose the various options you require in a player and it will suggest a player from the iRiver range for you. It is in beta phase at the moment so be patient.

If, however, you want to do it the "old fashioned way" then try looking at various sites on the web with reviews and specs of DAPs. Don't limit yourself to iRiver players, the point is to find a player which fits in best with your needs rather than one which looks good or will get you street cred.

### 1.1.1 Good websites

**www.amazon.com:** an online store, very extensive reviews, also try www.amazon.co.uk

**www.minidisc.com.au:** an Australian online store, also sells MP3 players and has reviews

**www.cnet.com:** an online review/technology site. Has professional reviews as well as user ratings

**www.dapreview.com:** a site DAPs in general, contains many reviews and pictures and news about the DAP world

**www.anythingbutipod.com:** a site dedicated to showing people more than just the iPod option

**www.misticriver.net:** an iRiver fansite

**www.ilounge.com:** an iPod fansite

**www.nomadness.net:** a Creative fansite

## 1.2 Purchasing a player:

After you have decided on a player then the next decision is where to purchase it from - locally or internationally? New or second-hand? Online or at a shop? Probably the most important issues here are cost and warranty. If you purchase a player from overseas or second-hand will the warranty still be valid in your country? Will you have to return it from the place of purchase or can you return it to a local distributor? It is very important to do your homework here as a cheap second-hand player may not turn out to be so cheap if it breaks within two months of your purchase.

After you have chosen where you are going to buy your player from the next concerns are not getting ripped off. If you are buying from a retailer (either online or bricks-and-mortar) then misticriver.net member Nibin recommends this method for getting the best price:

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### 1.2.1 Nibin's guide to getting the best price

Step one: Look at best price threads on forums and look for the best selling price in a website

Step two: Go to any site that betters the competition's price and gives better conditions than the one you found in the best price thread. (for example, no publicity intended, advancedmp3players will better the price of any U.K. website)

Step three: Enjoy your player which you will have bought for the cheapest possible (hopefully) and if you have chosen a good site you will also have extra goodies (for example the site above gives you an extra pair of headphones for free)

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There are also sites which list various prices of items. www.froogle.com is one (although it is not worldwide) and www.staticice.com.au is an Australian site which appears to do the same thing. An internet search should reveal a local site for wherever you're located.

If you have chosen to purchase a player second-hand or from a site such as eBay then it is important to ensure that the seller is reputable. Have a look at their feedback and if possible e-mail them before the sale. Also ensure that the price they are asking is reasonable. Have a look around at other second-hand players and find out the prices that those people are asking. Take into account the amount of use and if the warranty is still valid. Most importantly, always try to use a credit card for the purchase, if you get ripped off then often credit card companies will ensure that the money is not removed from your account and may even investigate on your behalf. Remember, if it looks too good to be true then it probably is.

## 1.3 Now what?

Now that you've purchased a player and hopefully not been ripped off the next step is to put your music on it. If you already have your music in a format that your player plays then you can skip this section. If, however, your music is in record/tape/CD format or you have no music then read on and learn how to put your music on to your player.

# Chapter 2

# Going Digital - working with your music

## 2.1 Choosing a format:

There are many different formats for storing digital music in (codecs). Arguably the most popular at the moment is MP3 (which is why many DAPs are referred to incorrectly as "MP3 players") although the "Apple format" (aac - which has the extension of *.m4a) is gaining popularity with the rise of the iPod and iTunes (which rips to aac by default). Nonetheless, there are many other formats out there and again it is important to weigh up your needs against the pros and cons of the various codecs.

First of all get a list of all the codecs that your player plays. When you read the following sections, make sure that the codec you chose is one which your player can actually play.

The first choice to make is between what is known as "lossless" and "lossy". Lossless codecs copy the exact sound of a CD and put it in a file. Popular lossless codecs are wave and flac. These codecs do not use any type of compression however and as such often result in large file sizes. One CD can take up to 700MB of space in wave format. Lossy codecs are much smaller (a CD may take up under 100MB) however in order to reduce size they are compressed. This results in an MP3 which is not an exact copy of the original. In most cases this is not a problem however as the differences are small.

misticriver.net member DreamTactix291 has written a very helpful guide on audio formats called Audio Formats 101. It is available at http://www.misticriver.net/boards/showthread.php?p=126798#post126798 however here is an edited transcript of it (as it is quite long and includes a lot of technical information - if you are interested in the nuts-and-bolts of the formats then I would suggest you visit the thread):

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## 2.2 DreamTactix Audio Formats 101 Guide

### 2.2.1 Lossy Codecs

#### 2.2.1.1 MP3

MP3's full name is MPEG layer III audio. It is an older format dating back to the early 90s, but nowadays is by far the most prevalent audio format out there. It is not a bad format by any means but has a few limitations that newer formats have corrected. Most common bitrate used is probably 128kbps, but 192 has caught on a lot more than it used to. LAME preset standard, a VBR preset, is considered the best size vs quality tradeoff, by even the golden ears (audiophiles with way too good hearing for their own good). Preset standard is also what I recommend to people wanting to make their own mp3s.

*Good mp3 encoders:* LAME (especially from 3.9 on with the presets), FhG (more optimised than LAME for non 44.1kHz sampling rates)

*Decent mp3 encoders:* Xing (side note: although Xing got a bad reputation about being a bad encoder it really isn't all that bad. Also the first encoder able to produce VBR files)

*Bad mp3 encoders:* Dist10, Blade, Plugger, Shine, and anything else based closely off the Dist10 sources (Dist10 is the sample encoder provided when you purchase the mp3 specifications)

The layer III specifications supports different bitrates and sampling rates for each different MPEG standard.

Bitrates can be per frame and VBR is achieved in mp3 by changing the frame size bits on a per frame basis. If you look at the stream it would be like this as an example - 32, 128, 160, 224, 320, 192, 256... You get the idea.

*VBR* = variable bitrate, constant quality, unpredictable filesize

*CBR* = constant bitrate, variable quality, predictable filesize

*ABR* = average bitrate, constant to slightly variable quality, mostly predictable filesize. I like to think of ABR as "smart CBR".

MP3 tags are technically a hack since the mp3's stream format does not specify tags. Common tags include

*ID3v1:* Fixed tag field sizes and fixed tags. The first tag format made for mp3. Also can be used for some other formats as well. Always takes up 128bytes exactly IIRC. Unofficial standard and widely supported. ID3v1.0 = no track number and ID3v1.1 = track number present.

*ID3v2:* Non-fixed tags field sizes and non-fixed tags. Most likely the second tag format made for mp3. Pretty much just mp3 uses this one. Very hard for programmers to work with due to the way this tag format stores its data from my understanding. Unofficial standard and widely supported. ID3v2.3 is the most common and best supported. ID3v2.4 has some problems with support or did the last time I checked. Replaygain values can be stored in ID3v2.

*APEv1&2:* Non-fixed tags field sizes and non-fixed tags. Like ID3v2 but much easier for programmers to work with. Actually structurally it looks a lot more similar to Vorbis comments IMO. Not nearly as widely supported as ID3v1&2. Replaygain values can be stored in APEv2.

General rule is if the player comes across tags it doesn't understand it just skips them. So don't worry too much about corrupting a file with too many tags. I now use ID3v1.1 and ID3v2.3 for my mp3 files since APEv2 borked tag support on my H120 for some files. Just something to be aware of.

#### 2.2.1.2 Ogg Vorbis

Ogg Vorbis is an open source lossy audio codec created by the non-profit organisation Xiph.Org (formerly Xiphophorus). While it is still used far less than mp3 by the masses it is gaining ground steadily and has hardware support on several DAPs including iRiver ones. Vorbis is inherently VBR, but it can have its bitrate managed to make an ABR mode. 1.1 is the official version currently out and it is mostly aoTuV b2 (a third party tweaked encoder merged with bug fixes). Most recent third party version is aoTuV b3, which is 1.1 with improvements. Ever since aoTuV b2 Vorbis's quality has been tied at the top.

*Good Vorbis encoders:* Most of them really. Everything except what I list below.

*Decent Vorbis encoders:* 1.0, 1.0 Post CVS, 1.0.1, 1.0.1 Post CVS (these are all slightly outdated)

*Bad Vorbis encoders:* The old betas and RCs probably, but then again Vorbis wasn't even 1.0 yet so they weren't intended to be great yet. Once 1.0 came out these were all obsolete.

*Newest Vorbis encoder:* aoTuV b4 (technically Lancer but it's based off of aoTuV b4)

*Recommended Vorbis encoder:* 1.1.1 at HA though my personal recommendation is aoTuV b4, but I see no harm in using a few others as well. aoTuV b2, aoTuV b3, 1.1.0, GTune3 b1, GTune3 b2, Megamix, and

Megamix II. Megamix and Megamix II bloat the bitrate a lot though, but they throw every quality tweak out without much concern for bitrate. I currently use aoTuV b4.

Vorbis isn't limited like mp3 is and supports just about any sample rate (though some are more optimised) and frame bitrate sizes can be anything from 0 to infinity in theory. Vorbis also has tags built into the specification, so they are not hacks. Actually Vorbis Comments as they are called are probably some of the most powerful tags there are. Either them or APEv2.

Technically, Ogg is the container format and Vorbis is the lossy audio codec. Other things can and are mixed into Ogg: FLAC, a lossless audio codec; Speex, a voice codec; and Theora, an alpha-stage video codec. Others exist too but I'm sure you get the idea.

Vorbis is encoded usually by selecting a quality setting AKA a -q setting. -q 5 or -q 6 is usually the point where transparency happens in my experience. All of the -q settings are VBR, but they correspond with a nominal bitrate that encoder aims at. Sometimes it doesn't get too close but about 90% of the time it does.

The easiest to use Vorbis encoder is oggdropXPd at rarewares.org. You simply slide the slider to the quality setting you want and drag & drop the source wav files into the encoder and it outputs Ogg Vorbis. Command line versions exist as well but they're not as friendly to newbies.

#### 2.2.1.3 AAC

AAC stands for Advanced Audio Coding. It is an MPEG standard that was designed to be the successor to layers I-III. AAC has some big businesses backing it and it is also gaining momentum. The biggest reason for this is that Apple supports it on their iPod and their iTunes store sells it's music in DRM'ed AAC only. AAC is both and MPEG-2 and MPEG-4 standard. There are many flavours of AAC which I'll get to a little farther down. You almost always see AAC mixed in an .mp4 container (Apple's .m4a is the same thing)

*Good AAC encoders:* Nero, Quicktime/iTunes (CBR only though)

*Decent AAC encoders:* Coding Technologies, FAAC (only open source one I know of)

*Bad AAC encoders:* Too many old bad AAC encoders to remember. A lot of the original ones were really simple and the quality left much to be desired. This has changed however.

The two major competitors for best AAC encoder are the Nero and Apple's Quicktime encoders. The Nero encoder supports LC-AAC and HE-AAC, while the Quicktime encoder supports only LC-AAC at this time. Apple has announced HE-AAC support will be added soon, but the question is how soon. Nero has several VBR presets while Apple's is CBR only to my knowledge.

Like Vorbis, AAC does not have fixed frame bitrates. I believe there is a lower and a higher limit but I'm not sure. I've never seen an AAC file fall below 3kbps during silence, so I'd guess that to be the lower limit.

AAC has many different variations created for different uses

Profiles(MPEG-2)/Object Types(MPEG-4)

*LC / Low Complexity:* The most common version of AAC to be used with mid to high bitrates.

*Main:* Similar to LC I believe.

*SSR / Scalable Sampling Rate:* Not sure about the use of this one.

*LTP / Long Term Prediction - only in MPEG-4 AAC:* Not sure about the use of this one.

*LD / Low Delay - only in MPEG-4 AAC:* I believe designed to be used in telecommunications

*HE AAC / High-Efficiency AAC - only in MPEG-4 AAC:* Designed for low bitrate usage. LC AAC with Spectral Band Replication

AAC mixed in an .mp4 (or .m4a) container uses tags that are taken from Apple's .mov container. Unmuxed AAC can be tagged like mp3 with ID3v1, ID3v2, or APEv2. MPEG-7 I believe defined a set of standard tags for use with AAC but I don't believe they are in use yet.

AAC isn't Apple's proprietary format like many people believe, but they have a lot of money in it so they back it a lot. My personal preference is the Nero encoder, but the others are worth mentioning.

Currently AAC encoders at best match LAME at the same settings. AAC has a long way to go before it's optimised like mp3 has been.

#### 2.2.1.4 Musepack

Musepack, formerly known as MPEGPlus, is a lossy audio format that is strongly based on MPEG-1 layer II (mp2) but has evolved far past it. It was created by Andree Buschmann for one purpose: quality, and it has one of the finest tuned psymodels for lossy audio in the world. Musepack is a VBR only encoder like Vorbis and has absolutely no way of forcing an average bitrate on it. Musepack also has the fewest problem cases among all of the modern audio codecs. While Musepack is pretty much a dormant project right now (although mppenc 1.15s, 1.15t, and 1.15u have been released recently) there is hope that it will continue improving and hopefully fix its biggest flaws of being unable to be muxed with video and its slow seeking (it seeks about as fast as mp3 though). Musepack files get an .mpc extension but the old .mp+ extension is still valid. Musepack is now open source unlike in the past, but also as of now has no portable hardware support. It is on the Rockbox list of formats for the H100 series, but we'll have to see what happens with that.

*Good Musepack encoders:* Pretty much any of the SV7 encoders

*Bad Musepack encoders:* None that I know of

The current StreamVersion is 7, which is the container. SV8 is hoped for in the not too distant future. A tool that will allow you to remux current SV7 files without loss into an SV8 container has been promised once SV8 is complete. As of now Musepack only supports 1 or 2 channels so it is not for use with multichannel.

*Supported input formats (SV7):*

*Channels:* 1 or 2

*Bit depths:* 1 to 32 bit linear PCM

*Sample rates:* 32 kHz, 37.8 kHz, 44.1 kHz, 48 kHz (44.1 and 48 are highly tuned)

Musepack like Ogg Vorbis has a quality slider. Qualities 1 through 10 are valid. –quality 5 AKA –standard is the setting that was created for transparency. Going over –quality 6 AKA –xtreme is considered overkill. The –xlevel switch was once recommended to reduce clipping artifacts induced by encoding but as of 1.15s it is hardcoded into the encoder. It will be completely unnecessary once SV8 is done.

### 2.2.2 Lossless Codecs

Lossless codecs unlike lossy codecs like mp3, Ogg Vorbis, AAC, Musepack, and Windows Media Audio Standard and Professional do not discard any information during compression. Think of them like a zip or rar file only designed for audio and can be played back. Personally I've only used 3 of them and played back 4 of them. So I'll leave the long Pros and Cons to the HA.org page. Instead I'll go over the ones I know about, which are incidentally the ones most used anyhow. Unlike lossy codecs you can transcode from lossless to lossless with no penalty. You can't screw up a lossless encode so they're easier for newbies

#### 2.2.2.1 FLAC (Free Lossless Audio Codec):

Part of the Ogg framework like Vorbis and can be used in its own native container, .flac, or in the ogg container, .ogg. FLAC doesn't compress as much as some of the other codecs, but this is intentional. It has one of the best decode times which allows it to have hardware support in players like the Rio Karma and iAudio M3 and X5 as well as the iRiver H1xx series with Rockbox firmware. I would consider its compression to be average to above average, but it has very good tagging in the form of FLAC tags (which are 100% the same as Vorbis comments). FLAC's current version is 1.1.2 and is one of my two lossless codecs of choice.

#### 2.2.2.2 Monkey's Audio (APE):

This is another open source lossless codec that instead of boasting fast decode times instead boasts some of the best compression for lossless audio. However this pretty much means it will never have hardware support and currently Monkey's Audio can't do multichannel. This isn't an issue for CDs but if someone ever cracks SACD and DVD-A this means Monkey's wouldn't be the codec of choice. I would consider its compression to be far above average and excellent. It uses either ID3v1 or APEv1 or v2 for tagging (APE tags came from this format). Monkey's Audio's current version is 3.99.

#### 2.2.2.3 Shorten (SHN):

This is an older open source lossless codec that is still very popular in trading circles. It has good compression times but has some of the worst compression of the lossless codecs. Seeking was also a hack into it. Shorten could have hardware support but IMO FLAC is a much better choice as it is far improved over Shorten. The trading circles are starting to have FLAC show up more. I would personally consider Shorten outdated and its compression to be below average and has no native tagging.

#### 2.2.2.4 WavPack (WV):

This is another open source lossless codec that has impressed me a lot of late. Almost to the point of switching. It has better compression than FLAC nowadays, and also features a lossless/lossy hybrid mode. While this isn't unheard of WavPack is the only open source codec to do this AFAIK. WavPack's compression is slightly better than FLAC's (though it is getting even better) and it's decode is very similar. WavPack could easily have hardware support added one because of this. I consider WavPack's compression to be above average though not as much as Monkey's Audio; still better than quite a few lossless codecs. It uses ID3v1 and APEv1 or v2 for tagging. WavPack's current version is 4.2 and it has really come into its own since 4.0. WavPack is one of my two lossless codecs of choice and has hardware support in the iRiver H1xx series with Rockbox

Which one should you use? I personally would recommend FLAC or WavPack. FLAC is good but WavPack just keeps getting even better. All 4 of these formats have Winamp plugins and all can be played with foobar2000 out of the box I believe. There are also several proprietary formats like WMA Lossless and Apple Lossless but I've chosen not to cover them as I don't know as much about them.

[*Editors note: if you are interested in lossless codecs then Dreamtactix has posted a very useful graph on the thread mentioned earlier. It may be worth a look*]

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Now that you've digested all that information (hopefully) you're probably asking, "How do I know which one is the best codec?" The answer to that is one that only you can answer - are you prepared to sacrifice space for a lossless codec? Do you want a 'standard' codec or one which is a little bit more obscure? It is also important to decide on the bitrate. This is the amount of compression on a song and determines the size of the file. You may be very concerned about size however it is important that you are happy with the sound of the file - there is no point in being able to compress and entire album into 20MB if all you can hear is hissing and popping and fuzz.

The most obvious way to differentiate between the different codecs and bitrates is by which one sounds better and the best way to do this is to do what is called an ABX test. misticriver.net member Seadzz wrote this guide on ABX testing:

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## 2.3 Seadzz guide to ABX testing

To determine the best codec that gives you the right balance between file size and audio playback quality is the source of great debate. There is no right codec or right bitrate for universal use since everyone has different needs (flash players vs. HD owners) and everyone has slightly different hearing. Men by nature have a slightly lower response to high frequencies (thanks to mother nature) and exposure to loud sounds over a prolonged period (jet blast, jackhammers, subway noise) also tends to degrade your hearing.

ABX testing is a method where you compare a reference sample against a test subject. If you know the name of the test subject that can bias things since it is easy to cheat. You need this test to be blind and using an ABX test tool makes sure you canât cheat.

I have found ABX testing the best way to determine which codec sounds best to me and what bit rate to use. I thought Iâd share how to do this test and what tools are required. It is not difficult and without some real tools your test can be biased since you are not doing it blind.

Tools:

There are many out there but the best (easy for me to use) is foobar 2000. If you don't have that player yet go here and get it.

http://www.foobar2000.org/foobar2000_0.8.2.exe

You will also need the ABX tool plugin (is a dll file that you download and add to the foobar directory). It is located here.

http://www.foobar2000.org/foo_abx.zip

Procedure:

Take a CD you know well and identify one track that is not complex but has much detail, piano, violin, female singers, harpsichord or organ music is what you are looking for. You do not want hard rock, garage metal, screaming RAP music for this test - even if that is your favorite music please do not use it for ABX testing since all that screaming and banging will mask shortcomings and artifacts in the codec\bitrate. Again, soft passages with large differences from silence to a given detailed sound are what you are looking for.

Next rip the test track into a WAV file...save it to a place where you can find it.desktop is a good idea. You then encode this track into a few differing codecs and differing bitrates. To keep from going nuts I recommend only using one codec at a time and use large bitrate spreads. Use 128 as a baseline and then jump to 160 and another at perhaps 192 or 224. You can fine-tune the bitrate later but your first pass should be at eliminating bitrates that sound like POS.

Once you have encoded this wav file into a few differing bitrates (make sure you name the files differently...use 196.mps or 128.org to keep things organised) you can move on to the setup process.

Click on foobar and open the player. Click preferences (upper left) and look for ABX Test. Open that up and unclick the normalise option. Save and shut foobar down.

Restart foobar and locate the tracks you want to test (only two at a time) and import them into the player. Make sure you hit the stop button since foobar will automatically start playing the imported files. If you downloaded and installed the abx.dll file correctly you should be able to highlight the two files to test by first clicking on the top file then hold the shift and arrow down key. With both files highlighted RIGHT CLICK the files. A dialog box will open, scroll down to the ABX test option and click it.

Files will automatically be loaded into a new window and ABX tools will popup. Now you can move on to finding a good part of the test track to use. You really only to use a small segment of the subject file...no more than ten seconds. If you try to use the entire file you will go nuts. Listen to the track by pressing the A or B button and set a start and stop position on the track - again you only want a small file segment.

Once you have this segment selected listen to both A and B. then listen to X and Y. You will be trying to identify if A=Y or X and is B = X or Y. Once you think you have IDs the track as being X or Y select the next test. This will take your impute and bring the result down 1/1 would mean you IDs it right 0/1

would mean you blew it. Do this a number of times and the tester will tell you if you are correct or if you are guessing. If you correctly ID a file a number of times your probability of guessing % will approach zero. If on the other hand you are wrong a lot you will see a high % chance you are guessing. The foobar tools will randomly mix up the X and Y track to prevent cheating thus making it hard to beat and will give you results that have real value.

I have used this approach to test enhanced versions of ogg and LAME against the original WAV with surprising results. On testing OGG files encoded at Q8 with two differing versions I got a 9/10 result, which tells me that I can ID the two.

When I try to tell the difference between the improved ogg version from the WAV things go to !@#$ fast. Test result look like 5/10, which is a 50-50 chance I am guessing.

I hope this helps you get where you want to go in the wonderful world of encoding.

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## 2.4 Making your music digital

Now you should have chosen a format and a bitrate and have your music collection sitting next to you. The next step is to make your music digital. Doing this depends on the form your music is in. If all your music is in CD format that you have an easy job however it will still take time. To get a CD onto your computer a ripping program is required. This is a program which will take the file off the CD and turn it into the format and bitrate you request.

## 2.5 From CD to Computer

There are several ripping programs out there, here are just a few:

### 2.5.1 Windows:

**EAC:** www.exactaudiocopy.org

**Cdex:** cdexos.sourceforge.net

**AudioGrabber:** www.audiograbber.com-us.net

**iTunes:** www.apple.com/itunes

**Windows** Media Player: www.microsoft.com

**MusicMatch:** www.musicmatch.com

**WinAmp:** www.winamp.com (the demo version is crippled at 2x CD ripping)

### 2.5.2 Linux:

**Sound** Juicer CD Ripper: www.burtonini.com/blog/computers/sound-juicer

**amaroK:** amarok.kde.org

**Grip:** nostatic.org/grip/

**abcde:** lly.org/~rcw/abcde/page/

### 2.5.3 Macintosh:

**iTunes:** www.apple.com/itunes

For information on how to use these programs see the documentation which comes with them. For some you may also need to download the encoder for the codec you have chosen (MP3 will probably come with all as standard). To do this check DreamTactix's guide and search for one of the encoders listed as best in your favourite search engine.

Now you have all the tools you need to make your CD's digital. Depending on the speed of your CD drive the actual ripping process could take anywhere between 1x the time of the CD to 15x (or even higher). Whichever speed you can rip at it is going to take a while. Settle yourself down in front of the TV or a good book with your computer and your CD's and be prepared to spend the next few hours changing CD's. This is only a once-off process though so once you've done your CD's it will only be a small job to add the CD's which are added to your collection.

As a side note, most players at least offer the option of browsing your music by tag. This is information embedded in the files themselves which contains information on genre, album, artist, title and more. When you rip your music the program you choose should connect automatically to a database to collect the track information for that CD. Check to make sure this is correct as you are ripping to save time later.

## 2.6 But my music is on tape/record!

If you don't have your music on CD then you have a longer job ahead of you which will take more fiddling than ripping CD's.

This was taken from the Audacity website (http://audacity.sourceforge.net/help/faq?s=recording&i=records-tapes). Audacity is free recording software which you can use to record things on your computer from the line-in jack. If you are looking for more detailed information the I would suggest doing an internet search as this can be a complex procedure (especially when recording from a record) requiring far more room than I can devote to it here.

---

### 2.6.1 How do I record from vinyl records, cassette tapes, or minidiscs?

First, set Audacity to record in stereo.

Next, plug one end of a stereo cable into the "Line Out" or "Headphone" connector on your tape deck, minidisc player, or stereo system. Plug the other end into your computer's "Line In" connector. If you do not have a cable that fits both of these connectors, you can find one at an electronics store. Choose "Line In" as the input source on the Audacity toolbar, and press the Record button. While Audacity is recording, start playing your tape or disc. When you have captured the entire recording, press the Stop button.

**Notes:**

Do not plug stereo equipment into your computer's "Microphone" port, which is designed for low-powered ("mic-level") signals only. Use the "Line In" port instead.

Do not connect a turntable directly to your computer. The signal from a turntable is distorted; it must be corrected by passing it through a phono pre-amp or a receiver with a "phono" input.

---

If you have a player which has a line-in and the ability to record then you can also do it on the player although you'll have to separate the tracks and write the tag information on the computer. You may light to check out this website http://www.misticriver.net/boards/showthread.php?t=5072 which is the *H Series Live Recording Guide* written by Framesaver which has information on recording to the line-in on H series players amongst other things.

## 2.7 Organising your music collection

A few players have the ability to browse music by file-tree which is the folders in which your music is arranged on the computer and for people who own a player such as that a well structured music collection is essential. For people whose DAP browses by tag information (the information stored within the file about genre, artist, title etc.) a well structured music collection is also important however it is essential that their tag information be correct.

## 2.8 By file-tree

My response when people ask how they should organise their music on their player is to think about how they listen to their music. If you generally choose your music based on your mood then sort your music by genre, if you listen to entire albums at a time then sort by artist/album.

Personally, my music is arranged in this way:

```
music:
#-z / Artist / year - album / # title.mp3
Audio Books / author / book title / title.mp3
Classical / Composer / Piece / # title.mp3
Compilations / year - album /# artist - title.mp3
My Received Podcasts / title / *.mp3
Random Songs / artist - title.mp3
```

This allows me to separate my classical music from the rest of my music and the spoken-word files from the music. The "random songs" folder contains songs where I might only have one or two songs for an artist and this ensures that my "#-z" folder only contains artists with a full album or equivalent.

For more information, here is an award winning (3rd place in the MisticRiver Giveaway) FAQ on how to organise your files by Zac.

---

## 2.9 [FAQ] How Should I Arrange the Files on My Player? (by Zac)

Truthfully it depends. It depends on how you want listen to your music, the makeup of your collection and personal preference amongst other things.

### 2.9.1 The Short Answer

I have mostly albums but also some random music collected from here and there. This is how I do it.

```
Root:
\Albums\Artist - Album\00. Trackname.mp3
\Compilations\Various - Album\00. Trackname.mp3
\Various\Artist - Trackname.mp3
```

This arrangement works well for me and I have no need or desire to use the DB.

Using the database feature increases the startup time of the player considerably and a clever folder structure can make it almost redundant. It is assumed below that you do not use the database, but you can certainly still use it if you follow these suggestions (you are just less likely to want to).

### 2.9.2 The Long Answer

#### 2.9.2.1 Folder Structure

First of all there are some quirks of the player that you should be aware of:

- If you have a large number of files in one folder it will increase the player's startup time
- In shuffle mode the player only plays files at the same folder depth (may be annoying but can be used to your advantage, read on) [*Editors note: this is unconfirmed and some players seem to do it whilst others do not*]
- There's no way to skip down long lists

So these are the main considerations when deciding on your folder structure. It's a good idea to break up your music into folders based on album or artist, so that there aren't too many files in one folder.

2 common ways of doing this are:

```
\Artist\Album\filename.???
\Artist - Album\filename.???
```

Which way you go will depend on the makeup of your collection (if you have lots of albums from the same artist) and how you want to find your music (sometimes it's nice to see all your albums if you don't know what you want to listen to yet)

People have also been known to arrange their music by \Artist\filename.??? But unless you use the database to play by album you will lose the ability to hear 1 whole album. This is not suggested because you are then forced to rely on the db and you won't be able to listen to the tracks in order.

With the 2 options above you can end up with a large number of folders in the root directory. It is nice to break this up a little further to make finding your music easier and again this is dependant on the make up of your collection. Some nice ways of doing this are:

- Alphabetic sections (\A-M\ & \N-Z\, for example)
- By Genre (\Country\, \Rock\, try it if you're game)
- By Compilation or album (\Compilations\ & \Albums\)

#### 2.9.2.2 Naming Your Files

Some things to keep in mind:

- There are limitations on the length of filenames on the player if you want to use the database function (52 Characters).
- The player doesn't read all information in the id3 tag

The simplest way to go if you have a conventional music collection is simply 00. Trackname.??? This keeps the filename short and if you have the files in a folder based on artist there's no need to include it in the filename. For compilations you can include the artist as well if you want (keep in mind the limitation on filename length if you want to use the db), but if the information is in the id3 tag the artist will be displayed on the main display (but not the remote unfortunately). The reason for including the track number is so that you can play an album in the correct order.

Because your H player doesn't read the track info from the id3 tag, unless it is in the filename you'll never be able to get the album to play right (even from the DB). This is CRITICAL for most dance and classical music, but regardless why would you want to listen to your tunes in alphabetical order. If you don't care (or don't want) to listen to your music in the same order as it is on the album you can always use the shuffle by directory feature (SFL D).

**TIP:** If you have files that you don't want to be included when you shuffle, put these 1 folder layer deeper that the rest of your music. Trust me, you will find a use for this. At the moment I use this to stop classical music and unbroken speaking tracks (over 60 minutes long) being shuffled into the rest of my collection. e.g. Albums\Artist â Album\00. Trackname.??? Albums\Artist â Album\Album\00. Trackname.???

---

## 2.10 Tagging

You should have already checked the tag information when you were ripping however if you have a song which isn't tagged or is tagged incorrectly then you are going to want to edit the tag. There are a variety of programs out there for doing this, here are just a few:

### 2.10.1 Windows:

**TheGodfather:** http://users.otenet.gr/~jtcliper/tgf/

**Tag&Rename:** http://www.softpointer.com/tr.htm

### 2.10.2 Linux

**EasyTag:** http://easytag.sourceforge.net/

Many media players (winamp, amaroK, iTunes etc.) also contain media taggers.

*These next chapters will probably only be for those who found that an iRiver player (specifically the iRiver H300 series) best met their needs. Eventually I hope to extend this to cover more players in the iRiver range. Some of the information may still not be player specific however.*

# Chapter 3

# First steps

## 3.1 My assumptions

The purpose of this site is not to re-print the iRiver manual rather it is to clarify the information in there and tell new users how to do certain things with their player. I will not explain the functions of the buttons or any such information. I assume that you have a copy of the manual specific to your player. If you do not then there is one available for download from www.iriver.com. I will assume that you have read this manual and you know how to access certain functions and generally manipulate the players controls.

I will also assume that you have a basic knowledge of how to use your computer and its operating system. If you do not then you will have to look at other resources such as manuals for your OS and the programs you are using. Look at websites and help files.

## 3.2 Determining the type of player you have

There are two 'versions' of the H300 series player. The model sold in the United States and Canada is the US model. If the ports on the bottom of your player say "DATA" and "MEDIA" then you have a US player if you have "USB 1.1 HOST" and "USB 2.0 DEVICE" then you have an international player. Not all of this information is for owners of the US players and there is other information which is relevant (eg. using Windows Media Player, DRM music). I will note if the function I am describing can not be done on the US player.

## 3.3 Firmware

The firmware is the operating system for your player. You can find out what the firmware version is when you turn it on. At the bottom of the screen it should have a number and then a letter (eg. 1.28K). This is your firmware version.

Should you discover (in the previous section) that you own the international version of the player then you're in luck! You can upgrade your firmware. The current firmware is at 1.28 K(orean), EU(ropean) or J(apanese). I would suggest putting K on your player as this allows you to get the volume higher (as France has volume restrictions so all EU players also do). WARNING: Technically putting K firmware on an EU player VOIDS THE WARRANTY however this has never, ever, ever once been an issue as far as I know. BUT iRiver state that loading any firmware onto your player which isn't that of it's native region does void the warranty. All international versions of the player are the same however and the only difference in firmware is the volume cap so it should be a problem.

To actually upgrade the firmware then read the manual for instructions.

If you have a US player then you don't have any firmware which you can upgrade to however the EU, K and J firmware will also work on your player. Don't run off to do it yet though because putting non-US firmware on a US player DOES void the warranty (again, I can't recall any incidents where this has caused a problem) and also removes the ability to play DRM music (music from Napster, Yahoo or any online service). I would strongly suggest that you research the information on www.misticriver.net and www.iriver.com before doing this.

I will not be held responsible for any damage you do to your player upgrading to firmware which is not from your region.

All new firmware is announced at iRiver.com and (shortly after) at www.misticriver.net. The latest firmware can be downloaded from www.iriver.com and through links (to the iRiver site) at www.misticriver.net.

## 3.4 Charging

The first thing you will have to do when you get your player is charge it up. You have two options - USB or AC adaptor. USB has been known to take two to three days charging from empty so I would suggest charging from the AC adaptor this should take between two to four hours. Don't worry if you leave it for longer than that. The player will not 'overcharge' and it should be fine to leave it for longer without damaging the player.

### 3.4.1 The First Charge

The first charge is fairly simple plug it in and wait three hours. At least for the first charge I would recommend using the supplied charger if it is available just to avoid any potential problems.

### 3.4.2 Subsequent Charges (maximising the life of your battery)

The battery in the player is a lithium-ion battery which means that it has specific needs. Basically, don't run the battery down unless you have to as the battery works better with many partial charges/discharges rather than full discharges and charges. Every month or so you should run the battery down to reset the battery meter on the player however to ensure accuracy on the indicator. For more information see www.batteryuniversity.com which is where this information was gleaned from.

## 3.5 Putting the music on your player

Now that you have a well organised, well tagged, digital music collection the next step is to put it on your player. Some people may have ripped directly to their player due to a lack of harddrive space however if you have all your music on your computer this next information is for you.

The H300 is a UMS device. This means that it acts as a plain old external harddrive when you plug it in to your computer and you do not require any software to make the music playable on your player.

### 3.5.1 Connecting the player to the computer

This is not as simple as it may at first seem. Firstly you must plug the USB cord into the player. On the international version plug the small end of the supplied cord into the "DEVICE" port. For the US version it depends how you are planning on copying your music. See later sections for this information.

The iRiver H300 has the ability to charge from a USB port and you can not access the player while it is charging in this way. When you first plug the player into your computer the connected screen should appear.


This first screen indicates that your player is charging from USB (however this is also the screen shown when the player is charging from the AC adaptor. If you have your player plugged in to the USB only then it is charging from USB however if you have your player plugged into the adaptor and then plugged it in to the USB it will continue to charge from the adaptor.)

When you see the charging screen (assuming you have your player only plugged in to USB) press the play button. This should cause the second screen to come up, the connected screen. The indicator in the top right corner is the battery indicator. If you have your player plugged into the computer and power adaptor then this will be animated. If you have it only plugged into the computer then this will indicate how much battery you have remaining.

If you press play and the screen does not change then try pressing it again.

**note:** if you don't like the fact that your player charges through USB you can turn this function off through the options menu (to access the menu press and hold the 'navi' button)

```
menu -> control -> USB charging -> off
```

If you have trouble connecting then check your USB connectivity mode. If you are connecting through a USB hub rather than the computer directly (this includes USB ports on keyboards) then you may have to change the "USB Conn. Mode" option to "hub"

```
menu -> control -> USB Conn. Mode -> Hub
```

## 3.6 Putting the music on the player

You should now be able to access your player through the computer. In Windows it should show up in your My Computer as an extra drive (probably E:\ or D:\ by default depending on the amount of drives you already have). On Mac's it should appear on the desktop with the label "H300". In Linux it may be automatically recognised or you may have to edit /etc/fstab. Have a look at information relevant to your distribution on mounting external harddrives.

When you open the player on the computer for the first time it should have "RECORD" and "TEXT" files already. The "RECORD" folder is where the player saves all recordings (this folder has two subfolders "VOICE" and "AUDIO", see the recording section for more information). The "TEXT" folder holds .txt files.

Now you want to copy your music from the computer to the player. This is simple. Copy the computer music and go to the folder on the player where you would like to place the music. I would suggest making a "music" folder for this. Then press paste. This will copy all your music from the computer to the player. This may take some time depending on whether you have USB 2.0 or 1.1 and the size of your collection.

If you want to use the player while connected to the computer you will have to use a program on the computer and play it through the computer as you would a music file on the computers harddrive.

# Chapter 4

# Playing your music

## 4.1 Basic Music Operation

Now that you have music on your player the next thing you are likely to want to do is listen to it through the player (rather that the computer). To do this, put the player in "music" mode (it should already be in this mode if you have just turned it on):

```
press and hold "record" -> "navi" on music
```

Then press "navi" and you will see the browser menu. Navigate through your folders using the "navi", "play", "stop", "volume up", "volume down", "fast forward" and "rewind" buttons.

When you land on a song you like then press play. This should make the music play through whatever you have plugged into the headphone or line-out jack.

## 4.2 More Complex (play modes)

If you have just turned the player on and followed the instructions as above then the top right-hand corner between the play indicator and the battery indicator should be empty. This is where information about the order of playback of your songs is stored. When it is blank it means that your songs will play in numerical order - you may have noticed the little blue numbers in the top left corner. Generally this means playing through a subfolder then moving on to the next subfolder until it runs out of subfolders and then going to the next folder and so on. If you want to vary this then press the "record" button. You should then see a series of icons appear in the once blank space:

(the little arrows sign is repeat, represented here with R)

- R 1 : Repeat one song
- D : Play the directory then stop (from wherever you are to the end)
- R D : Repeat the directory (from wherever you are to the start then back to the end over and over)
- R A : Repeat all songs (this plays ALL the songs on your player, in order, repeated)
- SFL : Shuffle all songs on your player then stop
- SFL 1 : Shuffle one song (yes, this makes no sense - it just repeats the one song)

- SFL D : Shuffle a directory
- SFL D A : Shuffle a directory and repeat
- SFL A : Shuffle all songs on player and repeat

(there is a better explanation of these at page 74-5 of the international manual)

Obviously some of these will not be useful - SFL 1 and R 1 for example are the same thing. This is why you can change the different options:

```
Options -> Mode -> Repeat or Shuffle
```

Then you can chose which ones you want to scroll through. Personally, I have SFL D, R1, D and SFL. This allows me to shuffle a directory, repeat one song, play a directory and shuffle the entire player.

Work out how you mostly play your music and limit your own options.

## 4.3 Using the Database

As you will have noticed, when you press "navi" you are presented with the browser just as on your computer. There is also one other way of browsing your music on the player, however. If you would prefer to browse by ID tags then the database (DB) is for you.

The database is explained on page 54 of the international manual but basicall it just gives you more options as to how to search your music - by artist, album or genre or the traditional file tree.

First of all you need a program to create a database. TDT (http://tdt.sourceforge.net/tdt.htm) is a popular windows option or iFish (http://shredzone.de/projects/ifish/) for Linux/Mac/Windows (it's Java based so should work on most things). There is also one which comes with the player but it is widely regarded as useless and Windows only anyway. I would reccomend TDT which I used extensively under Windows or iFish which I don't have as much practice with but is apparently pretty good. Read the programs information on how to work it.

Once you've created a DB file and it's been put in the root (most of the programs should do it for you):

```
Options -> General -> DB Scan
```

This may take a while but eventually you will get sent back to the main music page. When this happens, press "navi" and all sorts of new options will open up to you. Browse through these just as you would the browser. There is also a browser option if you want to do it that way

### 4.3.1 Notes about the DB

- The database is MP3 only
- It will slow down your start time - some people have experienced start-up times of up to a minute using DB
- Only filenames of less than 52 letters will work
- It requires that your tags be perfect (almost) otherwise you won't get all your songs in the DB under the correct headings
- You must update your DB any time you add new music in order that it be recognised in the DB

## 4.4 Playlists

The iRiver H300 series can read m3u playlists and you can use this to play your music in a different order or in different groupings - just as you would with a playlist on the computer. A maxiumum of 200 playlists are supported on the player.

### 4.4.1 Creating Playlists

iRiver suggests using WinAmp to make playlists (and there are descriptions on how to create playlists through winamp on page 59 of the international manual) however this is not very detailed. AndrewMel from MisticRiver has written these instructions:

---

### 4.4.2 [How To] Create playlists with WinAmp (by AndrewMel)

First, there is a playlist creator/editor created by one of our own at misticriver, Cyberguest. You can find his thread here

http://www.misticriver.net/boards/showthread.php?t=8119

Otherwise use the following.

Some people have been having troubles creating playlists from WinAmp, and the workaround has been to edit the playlist to remove drive letters. I think this is an easier method.

One thing to make sure of is that each folder and song name is shorter than the 52 char limit. (cheers Shadow Skill)

#### 4.4.2.1 Getting The Music In There

Connect player Open WinAmp Open Media Library (ML button on bottom right of WinAmp screen)

In the bottom right of the media library screen there is a "Library" button, hit that and select the "Library Preferences" option. From the popup, select "Nuke Library".

If you cant see the "Nuke Library" button, you need to select "Media Library" from the list on the left of the popup and select "Misc" from the tabs at the top.

This will clear any songs from the library, but wont delete them.

Close that window.

From the "Library" button select "Add media to library"

From the popup select the MUSIC folder from the E: drive (if you computer assigns another drive letter to your H3xx player you will have to select that of course).

Depending on how many songs you have, this may take a while, even 5 or more minutes as WinAmp reads the tags of all those lovingly tagged songs.

You now have all your songs from your player listed in your library.

#### 4.4.2.2 Creating A Playlist

There are many ways of creating a playlist from that library, we are going to work on the most simple.

#### 4.4.2.3 Adding Songs To A Playlist

The first playlist will be a list of songs you want to play for a dinner you are having

In the left pane of the Media Library window, click on "Playlists" and from the bottom click on the "Create new playlists" button and give it a name like "Dinner Songs". You should now be able to see the "Dinner Songs" entry below the "Playlists" entry.

In the left pane of the Media Library window, click on "Audio". Now using the top left of the main pane to select an artist, or the top right to select an album, narrow it down until you can see the first song you want. Right click on the song, and from the popup select "Send to" and from the next popup select "Playlist Dinner Songs (enqueue)". This can be done for individual songs, whole albums, or even all songs by one artist.

Keep doing this until you have all the songs you want in your playlist.

#### 4.4.2.4 Saving Playlist To H3xx player.

Click on "Dinner Songs" in the left pane and you will see the list. On the bottom click the "Manage Playlist" button and from the popup select "Export playlist". In the popup you can direct it to save on the H3xx player using the drive number from earlier. You can also use the icon in the middle of the three icons in the top of the popup to create a new folder in the root directory to create a "PLAYLISTS" folder to store it in. (The icon looks like a folder with a star in the top right corner).

Now unmount the player by clicking on the icon in the systray (bottom right of screen, ALWAYS do this).

When the player is in the main music screen you can push the A-B button and you will be able to see the Dinner Songs playlist we made, highlight it using the (+) or (-) buttons, then hit play and there you have you Dinner Playlist playing.

WinAmp has a fairly sophisticated search function that could be used to make good playlists.

Jaysee has made a great suggestion to workaround irivers inability to view the playlist. Open the playlist in notepad, clean it up, and save it as a .txt file. That way you can read it while listening to the music!

a

---

### 4.4.3 Other playlist programs

Other programs you can use to create playlists include:

#### 4.4.3.1 Windows

iRiver Playlist Editor: http://www.cyberguest.net/playlist/ - this is a standalone program made specifically for iRiver playlists, I can not reccomend this highly enough.

MediaMonkey: www.mediamonkey.com

Basically any media player should create playlists in the m3u format

#### 4.4.3.2 Linux

xmms: www.xmms.org - this creates m3u playlists although not in the correct format for the iRiver. If anyone wants to tell me how to fix them then I'll add the information to here.

#### 4.4.3.3 Macintosh

I have no idea of any playlist programs for the mac except iTunes. If someone wants to tell me what they use then I'll put it on here.

**nb:** playlists must have relative paths. This means that if you open your playlist in a text editor (because that's all m3u playlists are - a text document telling the player where to go next) then you should see paths which look like this:

```
\music\album\artist\song.mp3
```

not this:

```
D:\music\album\artist\song.mp3
```

### 4.4.4 Accessing playlists

To access a playlist simply press the A-B button. Do not press and hold - the manual is incorrect. Just pick a playlist and press play. The play modes discussed earlier (SFL etc.) will still apply when in the playlist.