

# DISCO-NOVA MP-3000F v1.0.3.0

## User's Manual

### ABSTRACT

#### What MP-3000F is

MP-3000F is Disco-Nova's software mixer for today's DJs. This version (v1.0.3.0) supports playing of MPEG-encoded media files just like traditional records. The program's user interface is made to resemble normal mixing table found at millions of traditional DJ-booths around the globe, so that transition from turntables, CDs or other media formats to computerized deejaying would be as easy as possible.

Ease of use has been the main factor while developing this product, and we at Disco-Nova hope that You, as the user, will find the program a precious piece of software at your DJ show. Although the program is quite straight-forward, this User's manual has been constructed to help You find the full potential of the program.

#### and what it is not

Although MP-3000F offers many automated functions from mixing aid to automatic selection of songs, the program is not designed as a replacement for a DJ and a human is always recommended to follow what is going on - even when the program is running with full auto-piloting. After all, this is only a computer program, and the most essential parts of deejaying are those where computer can never perfectly replace a human being.

MP-3000F does not include a CD-ripper or MP3-encoder for producing MPEG-encoded audio, so you'll need to have such programs to produce the required audio files for your computer. On our website, <http://www.disconova.com/>, there is some free software for these needs, and there are others as well.

Finally a word of warning. Even though this technology is neat and seems like it has unlimited possibilities, there are still a few drawbacks (like the fact that in some parts of the world, this system might be considered illegal on public performances – more on this issue in the "Legal issues"-chapter later), and therefore we encourage people not to abandon their hardware systems, but keep them handy – if not for any other reason, for backup purposes; computers can always break down (or otherwise fail), and according to Murphy's law, this will happen exactly when it causes most harm.

#### Where to get help

Our website has always the latest information, FAQs (answers to frequently asked questions) as well as latest program updates available for everyone. You can also reach the development team through eMail at [mp3000f@disconova.com](mailto:mp3000f@disconova.com) if you require personal assistance.

### INSTALLING THE SOFTWARE

#### Steps required

1. Download the latest release of MP-3000F from our website.
2. Run the installation file.
3. The installer asks for the installation directory (default is at C:\Program files\MP3000F\Version\). This can be selected according to user's own preferences.
4. After this the program will install required files into selected directory. The program is designed so that all executable files are under one directory, not spread around your harddrives like some software.
5. After you've completed these steps, the program is installed, and can be run from the Start-menu. Uninstalling of the software goes just like any other software (ie. Through "Control panel" -> "Add/Remove software").

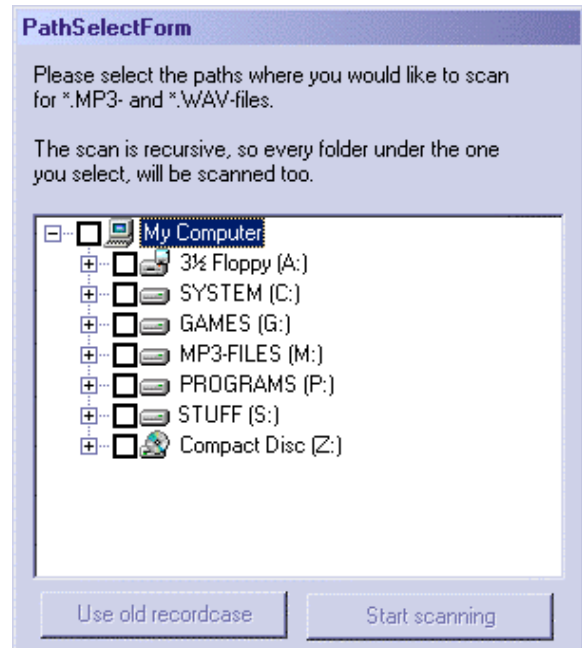
## BASIC USAGE OF MP-3000F

### Filling the recordcase

When the program is loaded, the first thing you see is the dialog that allows you to select the directories you wish to be scanned for MP3-files.

You should select the top-level directories, since the scan through your harddisk is recursive (meaning that every subdirectory under the one you select will be scanned too). After you have selected a directory (or directories) by ticking the selection boxes beside the directory, the "Start scanning"-button will be enabled, and after you hit the button, the scan will start. You can't use the program during the scan, so it's wise to keep your MP3's in some centralized location, so the scan will not take too much time. Scanning 1000 songs under one directory takes about 10-30s. depending on the speed of your computer.

If this is not the first time you're running the application, you will also have the possibility to "Use old recordcase". Pressing this button will load the last recordcase you've used. This is much faster than scanning through the harddrive. If you've added new songs recently you'd like to use, you can't use this selection, since it doesn't see the new songs in the directories like the scan does.



### Loading a song into playlist

When the scan is complete, you have all of the songs in the selected directories on the "Recordcase"-tab. You can seek through the files with your mouse as you would with a traditional recordcase. Loading a song into player is just a question of double-clicking on a selected file. You can also search songs from the current recordcase on the "Song search"-tab by song's title, BPM or Genre (it's a good idea to keep your genres in order, since they are used by some of the automated functions discussed later in this manual). On the "Song search"-tab, the loading is handled the same way as in the "Recordcase"-tab (ie. double-clicking on a song loads it).

The song is loaded into a free player (a player that does not have a song loaded), or if no players are available, into the playlist.

After the song has been loaded into a player, the program will automatically normalize the file and count a preliminary BPM-value for it (if enabled; see the section about automated functions later in this manual). This counting is done only once, and stored in the "comment"-field of the file's ID3-tag and fetched from there the next time the same song is loaded. The maximum time it takes to normalize the file and count the BPM-value totals up to 15s. (the whole file is not being scanned, but this usually gives us useable values).

## A LOOK AT THE AUTOMATED FUNCTIONS

### Normalizing

Normalizing is used on files to make their volumes equal to one another, since different encoders produce quite different dB-levels into MP3-files and this will most likely produce problems while performing live. The program normalizes the files when they are loaded into player if "Enable normalizing" is checked on the "Preferences"-tab.

The automatic normalizing can change the streams' amplitude max.  $\pm 6$ dB. This causes some limitations especially on songs with very low amplitude. However, songs that have a very low amplitude are very rare these days, thanks to proper encoding software.

It must be noted that even though normalizing changes the amplitude of the songs, this happens before the faders – You need to keep the faders on the mixer at the same level if you wish to have the sounds equal.

#### **Tips:**

On older and/or slower computers (<300MHz) it's recommended not to use automatic normalizing, since it causes some temporarily stress on the CPU when the file is loaded, and might interfere with other players causing them to skip or get momentarily stuck at some point of the stream.

If your computer has the possibility to use automatic normalizing, it is recommended to use it, since otherwise, you can easily break your PA sound system with the songs that have too high amplitude. The automatic normalizing doesn't fully remove this possibility (since you still have the ability to control sound levels after the program), but does reduce the possibility a lot.

### **BPM-counting**

BPM (Beat Per Minute)-information is essential when doing professional sounding beatmixing. The program has an automated BPM-counter makes an estimate of the song's BPM-value when the song is first loaded. Although this usually is very close to correct value, it shouldn't be blindly trusted. When you're pre-listening the song, you can click on the BPM-display of the corresponding song in the "Beatkeeper" a few times to make the computer restart counting with a narrower scale that usually improves the accuracy.

Must be noted however that the automatic BPM-counter does not support variable BPM on a file (like some mixes where the BPM changes during the song), but counts a somewhat average value according to the first few minutes of the song.

When the program is counting for the BPM, the "Beatkeeper's" BPM-value display for the corresponding player is colored dimmed red. The progress of the counting process is visible in the display. When the counting is done, the colour will become bright red and show the BPM of the song. If for some reason the BPM-counter is unable to count the BPM for a given song, the display will show "???.?".

The last counted BPM for a file is stored in the file's ID3-tag's "Description"-field for future use, and is fetched from there the next time the song is loaded. Therefore, when you've once acquired the correct BPM for a file, it will never have to be recounted thus saving precious CPU-time.

### **Automatic BPM matching**

As a supplement for automatized BPM-counting, MP-3000F implements an automatized BPM-matching. The program matches BPMs by  $1/10^{\text{th}}$  of a beat precision, which is by far enough for beatmixing. Since the automatic offset-matching is not yet implemented (though it shall be in the future), the program can not perform a professional automated mix every time at present. See chapter "Performing with MP-3000F" for more information about BPM matching.

### **Automatic crossfade**

By default, the automatic crossfade will, if enabled at "Settings"-tab, fade between songs (if there is a song loaded into the other player) when there are 8 beats left in the current song. This value can be changed to suit user's needs at the "Settings"-tab. Automatic crossfade tries to find the correct place to start the crossfade so that if BPMs of the two songs match, the crossfade should be smooth. However, this doesn't happen every time - the longer the crossfade-time, the bigger the possibilities that the beat will be running free instead of a smooth mix.

## **PERFORMING WITH MP-3000F**

### **Mixing**

Many DJs choose mixing to be the best way to move the night forward. Lorem ipsum dolor sit amet.... ..

## Basics of beatmixing

Basically, beatmixing means just bringing the beats of two different songs into phase with one another and fading across. Sounds simple, doesn't it – well; heck no – beatmixing is probably something like gods final message to his creation. It's sure to drive a DJ totally insane and so far round the bend you're gonna need a compass to find your way back. Only with time and practice are you going to master the art of beat matching and even then, there's always room to improve.

There's actually nothing hard about beatmixing. That's the main reason so many people lose their nerves; for hours you seem to stand there screaming at the top of your voice 'Mix you stupid records'. It's either that or you spend 5 minutes trying to match the speed of the new record but just as you're about to bring it in, the one that's playing finishes (arghhh !) If you can withstand this kind of self-torture, you are already half way there.

### Finding the beat

First, without trying to sound over simplistic we must define what a beat actually is. When you are listening to a track, the beat is usually the bass drum. I say usually because other things such as high hats or symbols can be used. For this tutorial, we will use the bass drum, as this is by far the most common. So what happens then when the bass drum is not playing during some part of the track? Does this mean that there is no beat? The answer here is no. Think of the beat as rhythm. If you find yourself tapping your feet, nodding your head or shaking any other part of your anatomy, it's the beat that you are doing this to. Try not to wiggle too much though as people will think you're a bit weird waving your arms all over the place.

Fortunately, MP-3000F is fitted with an automatic BPM-counter that will find the beat for you. All there's left to do for you is to check that the BPM is correct (see section concerning automatic BPM-counting for more information).

### The next step...

Now that you know exactly what a beat is, the next thing you should know is that they are placed together in groups of 4, 8, 16, and 32. For example, if you have a track that starts of with a bass drum and you were to count the beats, the chances are that after the 16th or 32nd beat a new sample will be introduced into the track (e.g. a symbol). This grouping of beats into multiple of 4 is true for virtually all tracks and is a concept that is important to grasp. You may be able to get both records to the same speed but if you mix one into the other without taking into account the 'position' you are mixing into you'll drop it in like a lead weight. The idea is to create a smoooooth mix that is almost undetectable. Don't worry if you not too sure about this at the moment because it will be discussed again later on. If you have some music with you close by (a CD for example) then now would be a good time to listen to it and get a feel of how the track changes as a new set of 16 or 32 starts. If not - don't worry... but keep it in mind for later.

Now you can begin to learn how to synchronise the speeds. You always need to hear both songs; the one playing, and the one you've got coming up next. You have another one blasting through the loudspeakers, and another one coming through your headphones. If you listen carefully, you can usually at some point hear the tracks "drifting apart". The sound of this can only be described as a "horse" sound, that familiar "thu thud thu thud" gradually getting worse as the tracks fall apart (a DJ's nightmare). I'm sure you know what I'm talking as we all experience it at the beginning.

If you start to hear the tracks drifting apart you have two choices. The first is to stop and restart the player (the one that's not playing through the loudspeakers), alter the pitch and then push play again at some other suitable spot. The alternative is a bit trickier but essentially, what you do is alter the pitch "on the fly". The first step is to bring the record back into phase by using pitch bend on the rotary dial of the player. When finally everything sounds ok, you're ready to mix in the two records and go live using the crossfader.

### Good luck

As stated earlier, beatmixing is something you learn only by doing it. Now you have the basics, but you really got to figure the rest out yourself. So; practice, practice, practice- and after you're done with that, keep practising a little more and this time do it harder. This may sound overly pessimistic, and it is meant to sound like that.

## Other mixing techniques

Beatmixing is in fact maybe the hardest of talents required from DJ (in addition to being a deejay person). Thank god - in addition to beatmixing, there are number of other techniques of mixing two songs together seamlessly. Here's a short look into some of these techniques:

### Mixing "by the break"

This mixing technique consists of finding the "break points" in song (ie. the parts that differ from the song; accapella parts, instrumentals and all kinds of breaks), and changing the song at that point. This technique usually has files' BPMs matched, but not always – you can easily change from fast BPM to slow and vice versa. To make this sound "cool", you'll also need to practice a lot.

### Mixing without mixing

You can also "mix" without mixing. Playing a song all the way to the finish, and doing a crossfade in the end is sometimes considered mixing – not very fancy, doesn't sound too good, but what the heck; it's just fine for many occasions. You don't have to be the mastermixer all the time, usually not even most of the time.

Other method of mixing without mixing is speaking between songs. This is something usually only radio-DJs do, and if you don't have good talents, most of the people will lose interest soon. This is again one of those things you'll (hopefully) learn by practising.

## Conclusions about mixing

Mixing is a talent. You either have it, or you don't. The good news however is that nearly everybody with a will can learn how to mix. Others better, others worse. We're not trying to put anybody down, but there are DJs that have been playing for years, some even for decades, and they still consider that they can't do a perfect mix. In fact; we've never heard a perfect mix – there's always something to improve in any mix. Practicing is the word of the day. Nobody learns anything without practising – we'll just have to live with that.

## LEGAL ISSUES

Disco-Nova holds no responsibility or liability for any kind of damages resulting from the use of this software, even if the damage results from defects of this software. Also, Disco-Nova disclaims any expressed or implied warranties, including, but not limited to, the implied fitness for a particular purpose.

Having said that, we can move to some more "down to earth"-discussions concerning the use of MP-3000F. At this point we feel it is our duty to tell that in some countries, it is be considered illegal to use MP-3000F in a live appearance (ie. on a public performance). If it is not illegal to use MP-3000F, it might however be illegal to produce MPEG-packed audio, since this can sometimes be considered as a copyright violation.

Therefore it is wise to make sure to check with local officials the status of your country on these issues before using the program. As we just said, we are not saying that if you're using this product for what we say it's okay to use it to, it would be okay because we've said it, because it is not. Be wise; if using the program is against the law in your country, don't use it. If producing MPEG-packed audio is against the law in your country, don't do it. We've warned you. Use your common sense in these issues.

## CONTRIBUTIONS & THANK-YOU'S

This project would propably not be at this point without MPEGTV, LLC's Xaudio-engine. Gilles Boccon-Gibod has been a great source of information on any subject on the engine, and people contributing at the Xaudio-SDK's mailing list have also been very helpfull. Llyal Gordon's Xaudio-pages have been extremely useful during the project.

Special "Thank you" goes to CubicCarrot's Sven de Smet for helping with the implementation of automized BPM-counter into this application, and everybody who has been (on and off) a part of the Disco-Nova programming team during this project.

The jingle for unregistered users hear every now and then after 14 days of the trial period has passed is made by Samuel Mäenpää. Thank you for doing this by request at such a short notice.

Many improvements into the VU-meter –code were written by one person, whose name has unfortunately been forgotten. Your name would definitely reserve to be here.

V1.0.2.3's french translation was made by Philippe Panchaud, and he can be certain we'll be bugging him with translation requests for this version too in the future. Merci beaucoup, and all the best.

In the project we've used code-examples and/or components created by the following people: Aleksey Kuznetsov, Andreas Hörstemeier, Andrew Leigh, Cresto Sylvain, Martin Zahl and some other people, we've been unable to find names for. We thank you all and hope the best in the future. Programming without people like you spreading their knowledge would be hard, maybe even impossible.

Since the Beta-testing has been done in public, listing all the testers would be impossible (there have been over 100.000 downloads on various version of the program), but one person has given us the most useful information ever, Lance S. Prager, we thank you for all your time – you've spent a great amount of it with us.

A guy (?) we know only by a nickname "Nemesis]" pointed us to a minor bug in the registration algorithm. Thanks for that, without you this would most likely have gone without noticing.

And of course we need to thank Mark Long. You were the first ever to register the program. This gave us hope of the better tomorrow and some strength to continue on the project.