Delfina_Review

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16-bit professional Zorro-II sound card for the Amiga family of computers

Review by Tomasz Nidecki


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1.2 why

Why I chose Delfina DSP over many other cards available on the market

I've been thinking of getting an Amiga 16-bit sound card for a long time. I've never even thought of migrating to the PC (with all the bad experiences I had with this family of computers) and I needed something to make professional music on the computer. Of course, the fact that Amiga audio cards are quite expensive was always influencing my selection, so even though I dreamt about the AD516 which is a legend amongst Amiga sound cards, I was searching for a better solution.

One day I asked about it on a FidoNet conference devoted to the Amiga, and got a reply from a guy by the name of Jakub Bednarski whose knowledge of the Amiga always overwhelmed me, summarising the current Amiga audio cards market and making some suggestions. Of course the main two cards he spoke about were the Sunrize AD516 and the Macrosystems Toccata. But he did some more research on Internet and found a very interesting offer of an audio card of high quality, with an onboard DSP for an unbeatable price of $400 (limited Internet offer only, suggested retail price was $699), meaning very little more than a new Toccata costs. He recommended it to me, and upon initial contact via Internet and reading some more about it I made a decision to buy the Delfina DSP card from Petsoff Limited Partnership.

You might ask - why did Jakub recommend the Delfina? Well, Toccata has one "small" disadvantage - no onboard DSP processor, which makes it totally dependent on the processing power of the Amiga to mix channels and create effects (therefore you can forget about high quality sound and video at the same time unless you have a 68060). AD516 might be very powerful and high quality, but its DSP is non-programmable (so you're stuck with the effects it has built-in, and there aren't many), the card is not developed, it's expensive, quite old, has no AHI interface and you're stuck with Studio 16 (which was not needed for my uses of an audio card, which would be mostly as a sampler to be used together with MIDI instruments). Other cards we found via Internet were Prelude (which was in the prototype stage then and has just entered production, besides it's not much better than the Toccata), Hypersound 32 (a myth, its home page completely disappeared recently and the authors cannot be found), Sounstage (expensive and proprietary to use with Broadcaster video cards), Wavetools (not much info on the Internet concerning this card), Aura (definitely not good enough for professional quality, and used via PCMCIA, so useless on my A3000 and A4000) and Maestro Pro (interesting, but for studio purposes due to no analog input/output, also quite expensive). So there was one logical choice of a card with a DSP, high quality, SRAM onboard, low price, and, as I found out later, very good software and service support. It was the Delfina DSP.

1.3 overview

What is the Delfina DSP and what it has onboard

The Delfina DSP, as I already mentioned, is a professional 16-bit sound card for the Amiga. Its primary uses are for real-time effects, professional sampling, non-linear sound editing and possibly, with bigger

AHI support, in the future - for games, etc.

The part responsible for AD/DA processing in the Delfina DSP is a CD4215 Codec which can sample with up to 48kHz, has programmable gain and attenuation and built-in antialiasing and smoothing filters. It delivers studio quality sound.

What makes the Delfina special is the 40 MHz, 20 MIPS, Motorola 56002 DSP processor. This DSP can not only deliver massive power for sound effects, but can also be used by the system for various calculation support. An excellent idea by the makers of the Delfina was using it to control extra serial and parallel ports. The reader might notice that 20 MIPS is twice as much as the AD516 DSP delivers and equal to the power of Sounstage DSP, and both these cards cost around $1400, while the Delfina only $400. Also, while the other DSPs are ofthen non-programmable, this one can be easily programmed by the developers and you also get an assembler for it on Delfina system disks (along with other utilities already using this DSP's potential).

Another feature of the Delfina is 192kB 15ns SRAM for DSP uses (expansion to 384 kB possible). Both of these (DSP and SRAM) make it possible for the Delfina to function as a full-duplex sound effect which takes almost no processor time and delivers real-time effects like delay, flanger, overdrive, compression, equalisation, noise gate, etc.

This revision of the Delfina is based on Zorro-II slots. It means that any Amiga 2000, 3000 and 4000 user can utilise the Delfina directly, also A1200 users with for example Micronik Zorro-II boards can use this card.

Zorro-II is however a disadvantage in one aspect. The low speed of data transfer via the bus and lack of DRAM memory onboard are responsible for the fact that the Motorola DSP cannot really be used for sound mixing purposes. However, no other card on the market except for the expensive Soundstage (which has no software for it anyways...) has either DRAM or Zorro-III slots, and the Soundstage has only 4 MB DRAM capacity. However, see chapter on
Future
to find out about Petsoff plans to
rectify this situation.

At the back of the card you can find two RCA-type outputs, two RCA-type inputs, one stereo-jack microphone input and one stereo-small-jack headphones output.

This revision of the Delfina also has another advantage. It has an extra connector that contains two extra ports - a serial port and a parallel port, managed by the Motorola DSP. This means that when you buy Delfina you can forget about buying an extra multi-I/O card which saves you about $100! Now this is what I call a good bargain. It so happens I really needed those ports anyways.

1.4 first

How I ordered the Delfina and what were my first impressions

I ordered the card, like any advanced computer user these days, via Internet, using my VISA card. The suitable form and contact addresses are on Delfina's web page (see Petsoff for more information).

I was surprised at the speed with which Jyrki Petsalo answered my letter. I faxed the suitable data through to Jyrki, the Visa card was verified the next day, and the card was sent right away. The speed of delivery was immense, the card traveled from Finland to Poland in 2 days time (!). Right after Easter I picked it up from the post office.

The card was sent in a grey cardboard box that looks like a big envelope. That's good, because it does not draw too much attention in the transport. When I unwrapped it I found the card in a piece of anti-static and anti-shock "bubble-foil" together with two diskettes, a bill and short installation instructions.

The card, upon close inspection, reveals the fact that it is hand-made, which does not make any difference to its quality. The next revision of the Delfina will be supposively fully automatically surface-mounted (see Future).

I was not, however, impressed with the installation manual, which is very short and made of a couple of photocopied pieces of paper bound together. However, to be honest, when installing the Delfina, I found it much more useful than the nice manuals you often get from larger companies. All you really need is there, and software manuals are included in amigaguide format on the system disks.

1.5 installation

How I installed the Delfina

Installing the Delfina card was very easy. All I had to do is insert it into the slot, attach the extra cables and connector for the ports, then install the software (standard Commodore Installer) and voila - the card was working right away. No configuration, no long fights with jumpers, no nothing. Compared to installing for example Cybervision with Cybergraphics it was a piece of cake.

The software delivered with the Delfina is based on Magic User Interface (MUI). Since I am very much a MUI fan it was an advantage to me, some people might not like the idea that much. One of the disks delivered with the Delfina is MUI 3.6 installation with a licence for use with the card.

The other disk contains delfina.library, serial driver (parallel driver is still Beta but can be requested directly from Petsoff if required), AHI

drivers, A56k assembler, configuration program and an excellent utility called DelFX, which lets you create realtime sound effects using the power of the DSP.

The first thing I did was plugging my mic and then my guitar into the mic slot in the back of the computer and I started playing with DelFX options. I found them to be incredible for anyone who uses any instruments and needs real-time effects. Delfina now completely replaced obsolete foot-pedal-effects like Distortion, Flanger, Chorus, Overdrive, Delay, Compressor, Noise Gate, and also added a 10-level equalizer! Playing bass is an immense pleasure with a flanger and delay set to give it that "Cure"-like sound.

Another good thing is that the Delfina is a pass-through card, which means that with an extra (not supplied) cable you can connect the Paula outputs to Delfina inputs and with no configuration, right on startup, Paula can be heard from Delfina's outputs. If you want interesting effects you might try playing some modules via the Paula chip and play with DelFX to add delays or chorus effects to them - real fun.

The backdraw of the current Delfina system is the fact that only one application can use the delfina library. This means that you cannot use DelFX with another copy of DelFX or with any other application accessing the card. This will soon be fixed, as Petsoff is working on a new system that would allow any number of applications to use the library in parallel, as long as there is enough SRAM for the DSP operation. If you try anything like that now all you get is a "Out of Delfina Memory" message.

Concerning third-party applications for the Delfina, there are some on the market already, and to be honest, not even the Toccata has that many applications available!. Of course any program that supports the AHI interface can be used with the Delfina, for example Hippoplayer, play16, etc. However, the AHI driver for the Delitracker is not working correctly with the Delfina and users must wait for Delitracker III. All users of the Delfina card will be granted free licences for DASMP (D.A.S. Module Player) V4, which is still in development. There is a Delfina version of the AmiPhone Internet Phone utility as well. Concerning commercial software, two very strong packages have Delfina support - Octamed Sound Studio and AudioLab16. Unfortunately the Octamed Sound Studio V1 is the last version of this program for the Amiga and development is being moved to the PC, which is not good news for many of us. I am strongly suggesting to Teijo (author of Octamed) that he implements an AHI interface for Octamed (to make it possible to use it with newer versions of Delfina for example) before development is dropped.

I've tested the Delfina with Octamed having a paralelly installed Toccata card. There was no difference in quality, both cards worked perfectly, but the Delfina noticeably consumed less CPU time than the Toccata did.

1.6 summary

Summary

In summary, I can recommend Delfina to anyone seeking a professional sound card for the Amiga and having not too much cash in their pockets. The ones

with more cash would better save up for the future Pro version of Delfina (see
Future
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With the development of Toccata and Maestro Pro dropped by Macrosystems (there will be no more cards manufactured), with Prelude and Hypersound in prototype stages, with no support or any decent software for AD516 and Soundstage, there is just no other way out. Dealers everywhere are starting to get more interested in the Delfina, and it is very probable that the card and its next versions might become one of the most popular Amiga audio cards on the market quite soon.

It is also worth mentioning that nowhere do you get such good support as from the makers of Delfina. They can be caught reguraly on IRC (nicks pets and zuikkis on EfNet, put it in your AmIRC notify window), via email (they usually answer within 24 hours), they are devoted to the Amiga and it's good to see that we have small companies that keep us alive through these hard times and create interesting developments.

Therefore spare these $400 and get yourself some better sound for your Amiga.

1.7 future

Future plans of Petsoff concerning the Delfina

The current revision of the Delfina card is, as said, manufactured manually. It is also quite expensive for distribution via dealers, where it would have to cost at least $600 (compared to $400 via direct orders). Therefore Petsoff plans to release a limited version of Delfina with less SRAM and no ports onboard (the card is now ready and is undergoing tests). This version is targetted to be cheaper in retail than the Toccata was.

However, there are also more ambitious plans to create a Delfina Pro card, which is now in a prototype stage. The card would differ from the current Delfina by having Zorro III slots and a SIMM socket onboard to be able to work with up to 32 MB (!) DRAM for samples. This means that all samples could be transferred to the Delfina for direct access by the DSP, which means the DSP would undertake the job of mixing, completely relieving the processor and Zorro slots of any work, which means - possibilities of using video and other applications in paralel with professional sound.

For more information on these plans contact Petsoff.

1.8 petsoff

How to contact manufacturers of the Delfina DSP card

Petsoff Limited Partnership consists of two Amiga freaks:

Jyrki Petsalo - marketing
Teemu Suikki - hardware and software development

Petsoff Limited Partnership is easily contacted via the Internet:

Their WWW home page is located at:

http://www.sci.fi/~petsoff

Their email addresses are:

Jyrki: petsalo@petsoff.pp.sci.fi
Teemu: suikki@petsoff.pp.sci.fi

Both: petsoff@sci.fi

Their snail-mail address is:

Petsoff Limited Partnership
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And their fax number is: +358-5-452-3347.

1.9 author

How to contact the author of this review.

The author of this review, Tomasz "tonid" Nidecki, is (amongst many other professions ;) a professional musician and a journalist, co-operating with the Polish "Magazyn Amiga" magazine.

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1.10 legal

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