



EXPANDING THE SOUND EXPANDER

For those who love to make music on their Commodore 64, Professional Music Technology's **MAX HALL** takes a look at the new **FM-YAM**, an updated version of the Sound Expander from XeNTaX



MAX
TECHNICAL

in the studio

Have you ever fancied nine extra FM (Frequency Modulation) voices on your humble Commodore 64? Well back in 1985 you could have done so by purchasing Commodore's own SFX sound expander that incorporated a Yamaha YM3526 (OPL1) sound chip, which turned the sound produced by your C64 into something that resembled the PC's Adlib Sound card. Pretty clever stuff for 1985!

Fast-forward to March 2018 and a very clever chap called Mike Zuurman, or Mr Mouse as he is known on the scene, has built an updated version of the Sound Expander called the FM-YAM.

This cartridge, like the SFX, adds nine extra voices of FM synthesis to the C64, but with a few nice extra twists to boot. Most notable is that you can now mix in the C64's three voices of SID and – if you're feeling clever – an extra channel of DIGI as well bringing the total voice count up to an astounding 13 voices, all from a stock Commodore 64!

The new cart incorporates a Yamaha 3812 (OPL2) sound chip, which has been modified to improve sound output over the original SFX Sound Expander.

So how does it all work in practice? The cart itself is a 3D printed affair, a nice bright red colour, and it looks just like the myriad of Commodore 64 cartridges that have gone before, except for the two 3.5mm jack sockets at the top of the unit. The right socket is for the **stereo output** of the FM audio from the cartridge so you can connect it to your sound source, like an amp or mixing desk. The left socket is a **mono input**

so you can add the output from the C64's SID into the audio line, thus mixing the signal with the FM sounds from the cartridge itself – something the original SFX did not offer.

I had no need for the left input while reviewing the FM-YAM because my C64 SID signal goes to a mixing desk in the studio – all I had to do was take the audio output from the cart to the mixer and I could then combine the FM and SID.

a music tracker for sound cards that support the OPL2 sound sets – exactly what the FM-YAM is designed to do. You can track music on your PC, then save the music in a D00 file format. And then you can play it back on your C64 using some clever player code by XeNTaX.

Some musicians and programmers have been busy with this unit already and created some great demos for the FM-YAM that show the full potential of this hardware.



At the time of writing the device is still in development so it does not yet offer custom editors. My first port of call was to load up the original Sound Expander software, which does indeed offer an editor for music, synth patch and riff editor. This software works perfectly with the new unit and allows you to create songs, edit synth patch sounds and even get backing rhythms to play along to straight out of the box. For non-programmers this is a neat addition to have and really is quite a lot of fun.

If you're more handy at programming, the FM-YAM can offer a lot of options for creating new music on your C64. The unit is compatible with a PC DOS program called EDLIB, which is

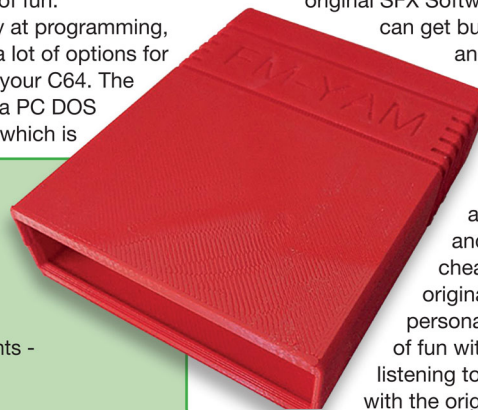
Notable productions are 'Vibrants FM' by XeNTaX that provides a nice selection of FM 9 voice tracks and 'SID Fishes' also by Xentax that shows off the full 13 voices (9 FM, 3 SID and 1 DIGI).

All in all this is a great device and musicians and programmers from the scene are already tapping into the potential this unit has to offer. Yes it isn't easy to get into if you are not a programmer, but you can always have a good old fester with the original SFX Software and the brave

can get busy with the tracking and hacking player code to get this unit singing!

This unit is great value for money, costing a mere 38 Euros and will probably be cheaper than getting an original SFX Expander. I personally have had hours of fun with this device, just listening to demos and playing with the original SFX software editor. I am also looking forward to what the demoscene will do with this unit – I am sure there is some great stuff just around the corner.

Totally recommended. ■



RESOURCES

Website – <http://c64.xentax.com>

EDLIB Tracker for DOS – <http://www.pouet.net/prod.php?which=13357>

XeNTaX Player code for D00 files – <https://csdb.dk/release/?id=157163>

SFX Sound Expander software –

<http://www.zimmers.net/anonftp/pub/cbm/demodisks/c64/sfx/sfx.d64.gz>

Vibrants FM – an Edlib music collection by XeNTaX with music by Vibrants -

Link: <http://csdb.dk/release/?id=157163>

YouTube: <https://www.youtube.com/watch?v=Rh7wKVmw3vs>

Sid Fishes – a proof of concept, combining 9 FM channels, 3 SID channels and a "fourth" DIGI SID channel, resulting in 13 channels of music.

Link: <http://csdb.dk/release/?id=157574>

YouTube: <https://www.youtube.com/watch?v=wbD900yFGZo>