

D.CAM synth squad



+
Install and Launch
—

 **fxpansion**



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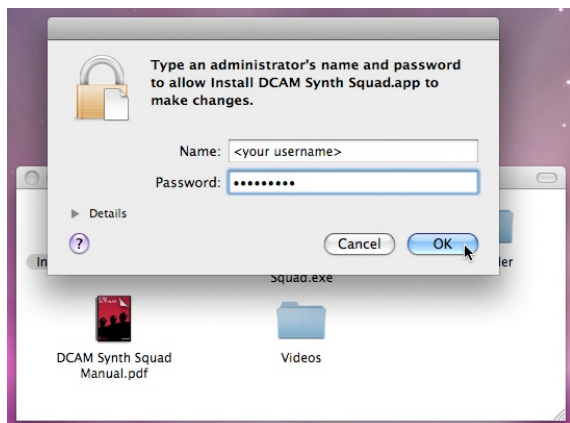
Installing DCAM: Synth Squad

Mac OSX 10.5 or above

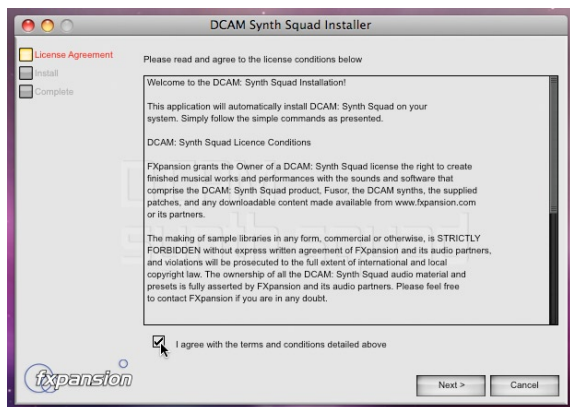
1. Insert the DCAM: Synth Squad installer disc and open the new DVD image that mounts to your desktop.



2. Double-click on the *Install DCAM Synth Squad* package.



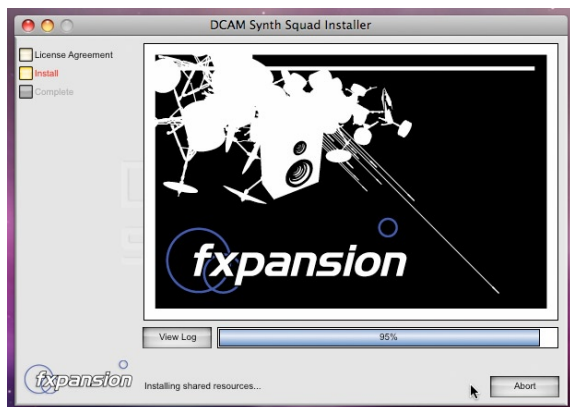
3. You may need to enter an administrator password to proceed.



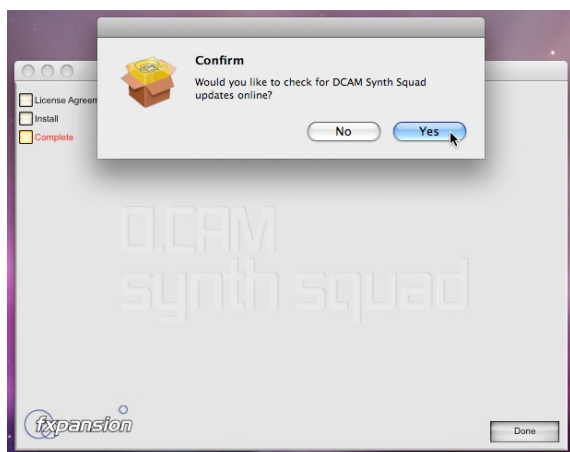
4. You must read and agree to the license conditions in order to continue.

When you have ticked the 'I agree...' checkbox, click the Next button.





5. Installation will now commence.



6. The installer asks if you want to check for updates at our website.

We highly recommend using the very latest version of DCAM: Synth Squad, as it is constantly being updated for optimum performance.



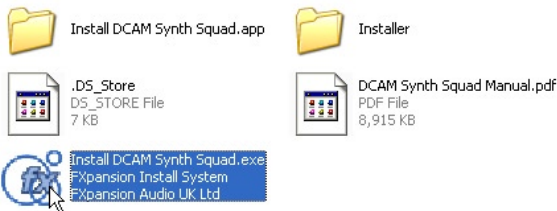
7. Click the Done button to complete the installation.

**You are now ready to authorize DCAM: Synth Squad.
Turn to page 8 for authorization instructions.**

Installing DCAM: Synth Squad

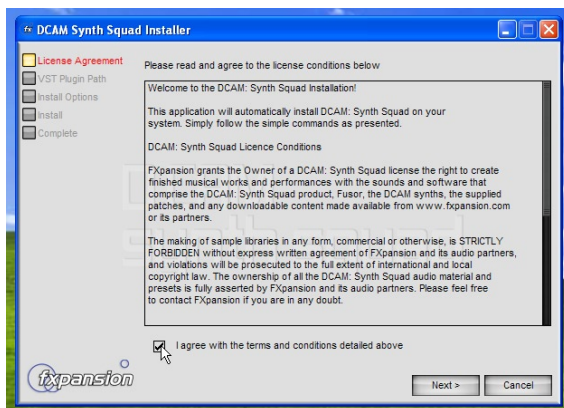
Windows XP or later

1. Insert the DCAM: Synth Squad installer disc and open the DVD if it does not open automatically.



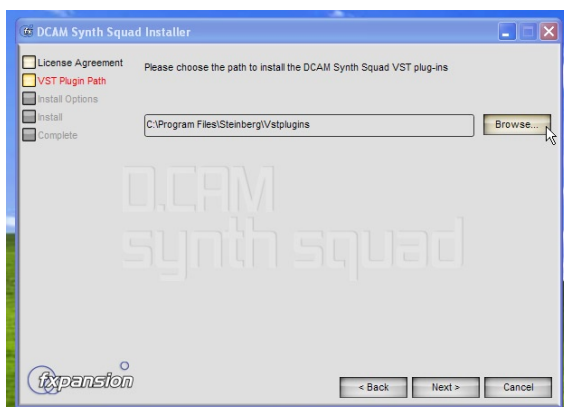
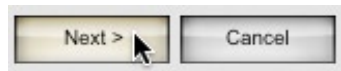
2. Double-click on *Install DCAM Synth Squad.exe*.

If Windows asks you for confirmation at any stage, please choose to proceed!



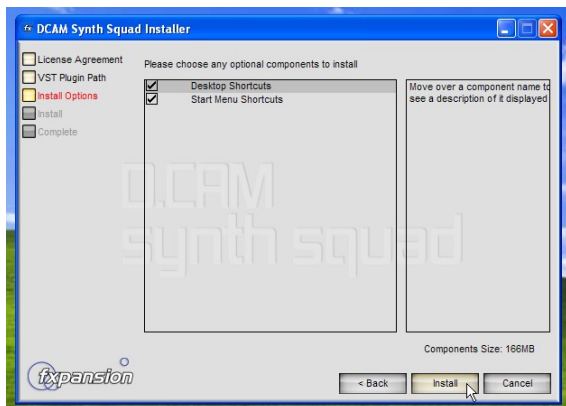
3. You must read and agree to the license conditions in order to continue.

When you have ticked the 'I agree...' checkbox, click the Next button.



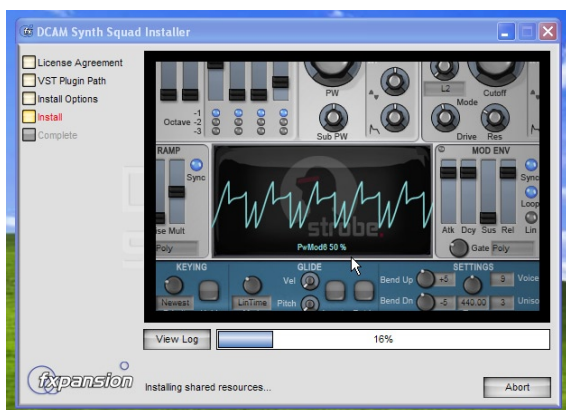
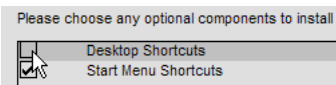
4. You now need to specify the location of your VSTplugins folder.

The installer tries to detect your VST folder automatically. If you require a different location for the VST plugin components, click the Browse button to navigate to and select another location. Click Next to continue.

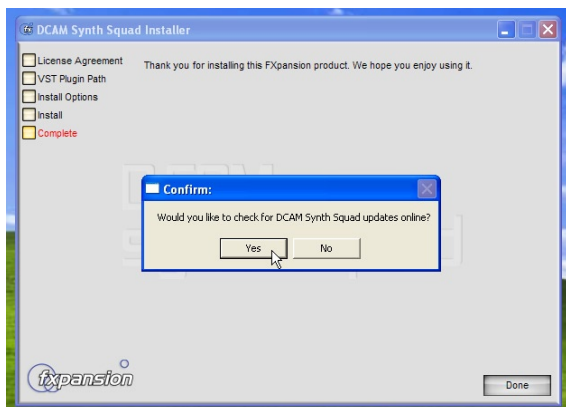


5. You can now decide whether you do not want the installer to create application shortcuts on the Desktop or the Start menu.

Un-tick any checkboxes as necessary, and then click Next.



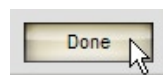
6. Installation will now commence.



7. The installer asks if you want to check for updates at our website.

We highly recommend using the very latest version of DCAM: Synth Squad, as it is constantly being updated for optimum performance.

8. Click the Done button to complete the installation.



You are now ready to authorize DCAM: Synth Squad. Turn to page 8 for authorization instructions.

Authorizing DCAM: Synth Squad

Starting the authorization

The best way to authorize DCAM: Synth Squad is using the supplied standalone applications. These are found in your **Applications** folder (Mac) or in **C:\Program Files\FXpansion\<instrument>** (Windows) – for example, **C:\Program Files\FXpansion\Strobe**. See Appendix 1 of the operation manual PDF for more details of the standalone apps.

You only need to authorize one instrument to authorize the whole of DCAM: Synth Squad. Run the Strobe, Amber, Cypher or Fusor standalone applications – when the instrument detects it is not yet authorized, it runs License Manager automatically.

Introduction to License Manager

The License Manager application is used to manage licenses and authorizations for DCAM: Synth Squad and other FXpansion software products, such as BFD2 and its expansion packs.

The computer on which you want to use the product does NOT need to be on the internet.

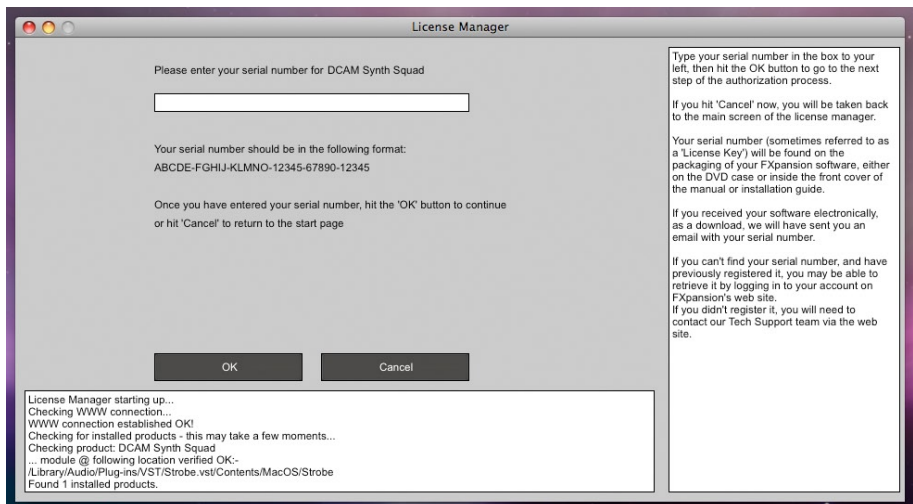
To use our products, you need to authorize them to be run on your computer. You can authorize your products in 3 ways:

- With License Manager and an internet connection on the same computer
- With License Manager and an internet connection on a different computer
- Using a web browser and a generated Authorization Request file, on the same or a different computer

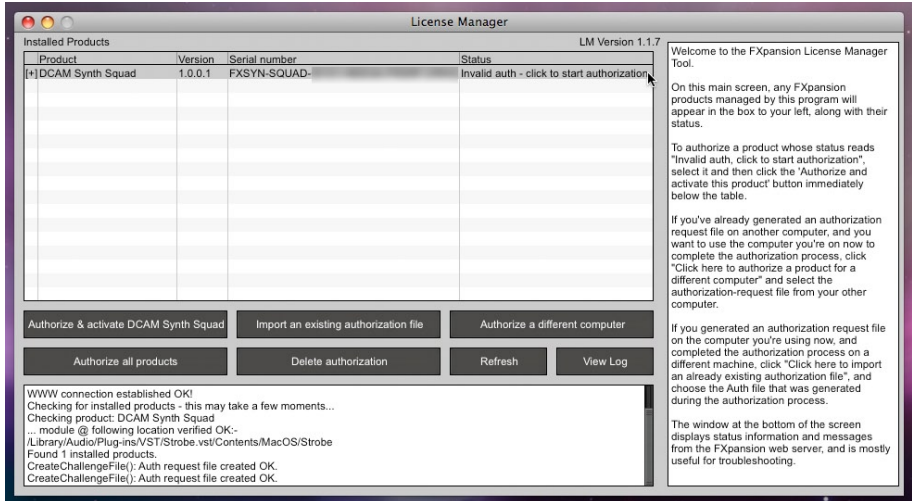
Note: Authorization files generated from an Authorization Request file are unique to a single computer. An Authorization file is only valid on the computer that created the Authorization Request file.

Enter your serial number

When License Manager runs, it may first prompt you for your product serial number. If it does so, type in your serial number, hit ENTER and then click the OK button.



Each time License Manager runs, it performs a quick scan of installed FXpansion products to check their license status. This can take a few moments so please be patient.



Running License Manager manually

When DCAM: Synth Squad launches and detects it has not yet been authorized, it automatically runs or prompts you to run License Manager.

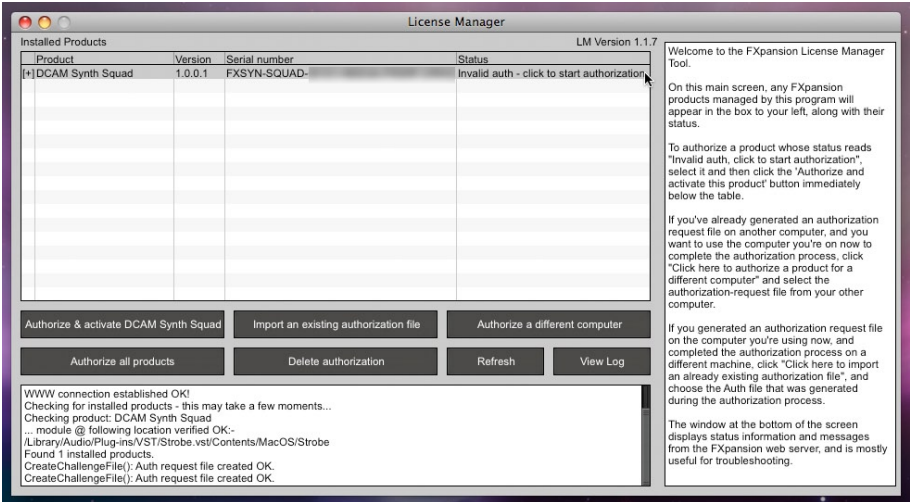
You can also run License Manager manually at any time from the following locations:

Mac OS X: **Applications/FX License Manager**

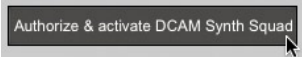
Windows: **Start • Programs • FXpansion • License Manager**

or: **C:\Program Files\FXpansion\LicenseManager**

Authorizing a product



To begin authorizing a product, click the **Authorize and Activate** button.



At this point, you may be prompted for the product serial number. If so, type in the serial number, hit ENTER and then press the OK button.

You will be asked to choose an authorization method from the following:

1. Online, automatically

The quickest and easiest way of getting your software authorized.

It requires that your computer be connected to the Internet directly or via a transparent (non-Proxy) firewall.

2. Via your Web browser

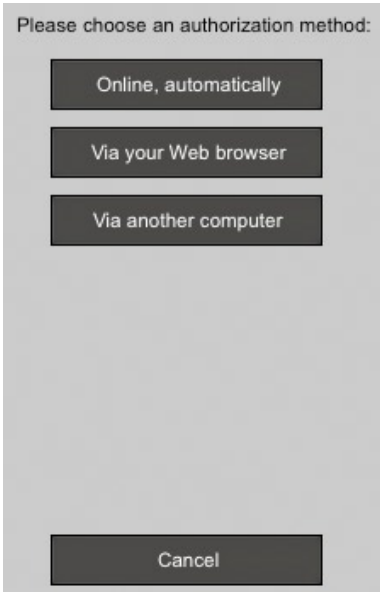
Uses your Web browser for authorization.

It is intended for aggressively firewalled or proxy-based internet connections – this is often the case in the workplace or at academic institutions.

3. Via another computer

Generates an Auth Request file, which can be used to obtain an Authorization file on a separate internet enabled computer.

The Authorization file is then used to authorize the original machine.



Option 1. Online authorization

1. To begin authorizing online, choose **Online, automatically** as the authorization method.

License Manager

Current Users

If you already have an account on the FXpansion website, please enter your log-in details.

Username: <your account username>
Password: *****

Log In!

If you have forgotten your log-in details, click [here to retrieve them](#)

New Users

If you are a new FXpansion customer, please click the 'Create a new account' button to set up an account.

Create a new account

Cancel

Checking for installed products - this may take a few moments...
Checking product: DCAM Synth Squad
... module @ following location verified OK:
./Library/Audio/Plug-Ins/VST/Strobe.vst/Contents/MacOS/Strobe
Found 1 installed products.
CreateChallengeFile(): Auth request file created OK.
CreateChallengeFile(): Auth request file created OK.
CreateChallengeFile(): Auth request file created OK.

To authorize your software, you need to have an account on the FXpansion web site.

If you have an account already, fill in your details in the 'Username' and 'Password' boxes to your left, and choose 'Log In!'.

If you don't have an account, click the 'Create a new account' button. It will launch your Web browser at a page on the FXpansion web site where you can create an account.

If you have an account, but you can't remember your username or password, click the 'Forgot username or password' button. It will launch your Web browser at a page which will help you retrieve your details.

Creating an account is free of charge, and your details will not be passed to any third party. You can view our full privacy policy on our Web site.

2. On the next page, you are prompted for your FXpansion web site user name & password. Enter the details and go to step 4.
3. If you don't have an account, click **Create a new account** on the right; if you've forgotten your details or you aren't sure if you have an account, click the link at the bottom.

The **Create a new account** button opens your Web browser to a short form on our Web site. Once you've created an account, return to the License Manager and log in with your new details.

4. The License Manager connects to our server. If it cannot connect, it reports an error message. This is either because our server is down (please try later) or there is a firewall block or fault with your internet connection (try the **Via your Web browser** authorization method).

License Manager

You are now logged in to your fxpansion.com account.

The product you are authorizing has the following details:

Product name: **DCAM Synth Squad**
Product serial number: **FXSYN-SQUAD-11111111111111111111**
FXpansion.com user name: **[redacted]**

Once you have confirmed that the above details are correct, click the 'Request authorization' button below to register and authorize this product.

Request Authorization **Cancel**

Please double-check the details on this page, and then click 'Request Authorization', or 'Cancel' to return to the main screen. Once you click 'Request Authorization', the License Manager will contact our web site to confirm and activate your authorization.

If the authorization process succeeds, and you're authorizing for this computer, then all you need to do. If you're authorizing for another computer, the license manager will generate an auth file on your desktop which you will then need to import on your other computer.

Please note that, under the terms of licenses, you are only allowed to authorize this software on 3 machines - after that, you will need to contact our Support team to obtain further authorizations.

If the authorization process fails, there are several reasons why that might be:

- Our Web site might be down for maintenance.
- You have exceeded the maximum number of allowed authorizations.
- The serial number might be registered to someone else.

If you have any problems, contact our Support team via email or the web.

... module @ following location verified OK:
./Library/Audio/Plug-Ins/VST/Strobe.vst/Contents/MacOS/Strobe
Found 1 installed products.
CreateChallengeFile(): Auth request file created OK.
CreateChallengeFile(): Auth request file created OK.
CreateChallengeFile(): Auth request file created OK.
Attempting to log in to FXpansion web site...
Login OK, please confirm that you want to authorize.

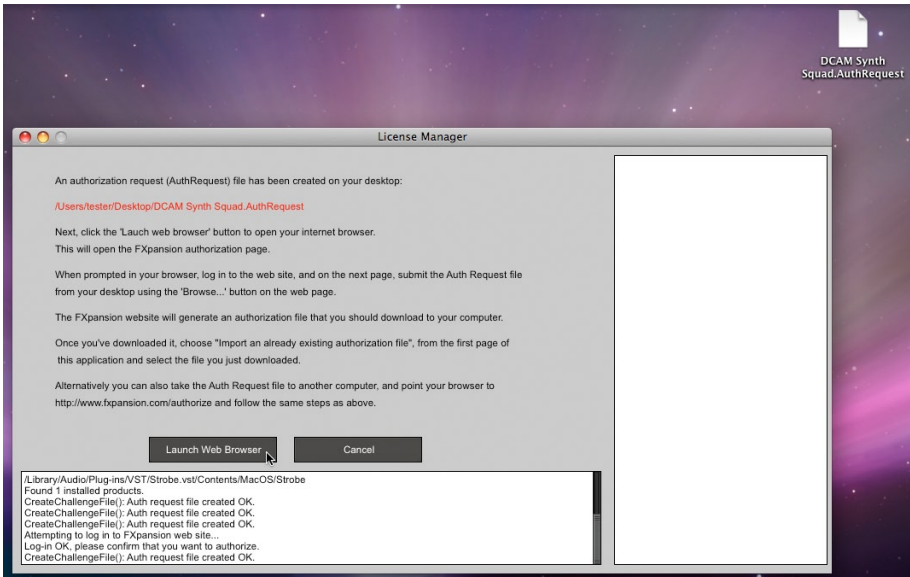
5. Once the License Manager has logged in, you are given a confirmation screen detailing the product that is about to be authorized, its serial number and your user account name.

Click **Request Authorization** – the authorization process completes, and, all being well, your software is ready to use!

Option 2. Authorization via your Web browser

1. To authorize via your Web browser, choose *Via your Web browser* as the authorization method.

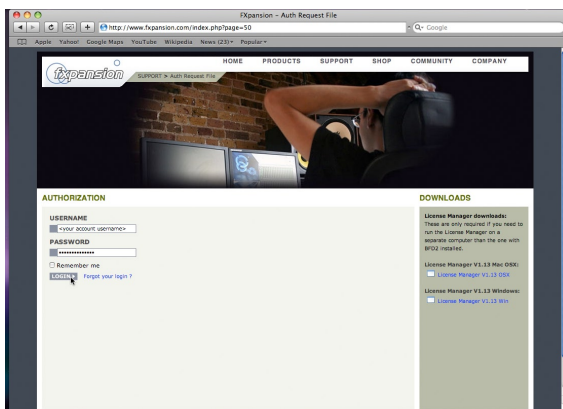
Via your Web browser



2. License Manager creates an Authorization Request file on your desktop – for example, “DCAM Synth Squad.AuthRequest” – and prompts you to launch your Web browser.

Note: If your browser fails to launch, you should launch it manually and point it to:

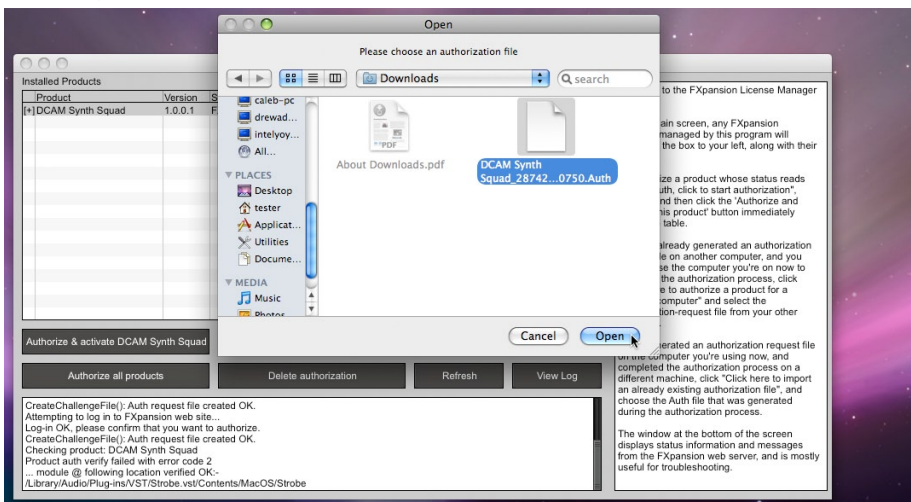
www.fxpansion.com/authorize



3. You are now prompted to log in to your user account or create a new account if you don't have one yet.

- Once you've logged in, or created an account and then logged in, you are prompted to select the Authorization Request file. Click the **Browse...** button, and, when the file dialog pops up, navigate to and choose the Authorization Request file that was created on the desktop by License Manager earlier. Then click the **Submit** button – the server now processes your authorization request. If the process is successful, you are prompted to download the Authorization file – choose **Save to Disk** and save it to your desktop (if you are using Mac OSX Leopard, downloaded files go to the **Users/<user>/Downloads** folder).

- Close your web browser and return to the License Manager application. On the main screen, click **Import an existing authorization file**.



- Select the Authorization file you just downloaded, (it ends in “.Auth”). The License Manager imports the Authorization file, and your software is now authorized and ready to use.

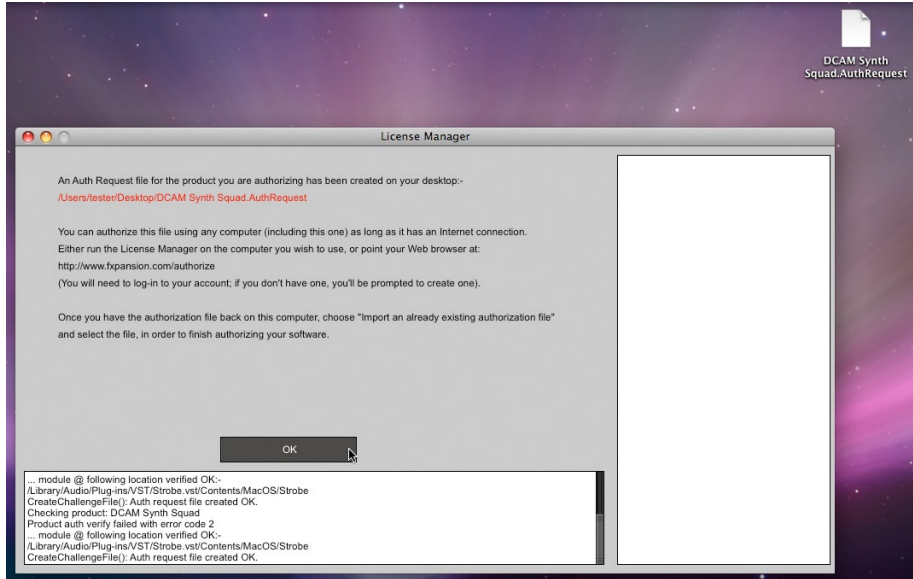
Note: The file you need to import is the one you downloaded from your web browser (ending in “.Auth”), NOT the file that License Manager generated earlier on the desktop (ending in “.AuthRequest”).

Option 3. Authorizing via another computer

This method should only be used if the machine on which you need to authorize your software does not have an internet connection.

1. To authorize via another computer, choose **Via another computer** as the authorization method.

Via another computer



2. License Manager creates an Authorization Request file on your desktop – for example, “DCAM: Synth Squad.AuthRequest”.

3. You need to take this file to an internet-connected computer (via local network, floppy disk, thumb drive, CDR, Zip disk etc.).

A small USB thumb drive can be purchased for around \$10 at any electronics retailer and is ideal for this.

4. Once you are at in front of an internet-connected computer, you have one of two options for generating the Authorization file:

- **Using License Manager**

Download License Manager from:

www.fxansion.com/authorize

Install License Manager on your internet-connected computer, run it and choose **Authorize a different computer**.

Authorize a different computer

You are prompted to select the Authorization Request file – choose the file on your thumb drive (or floppy, etc.), and then follow steps 2-5 on page 11.

When the process completes, an Authorization file is generated on your desktop. You now need to copy this file to your thumb drive (or floppy, etc.), and take it back to your non-internet-connected machine.

- **Using a web browser**

Using a web browser (Firefox, Safari, Internet Explorer etc.), open the following page:

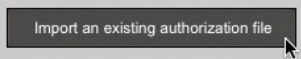
www.fxansion.com/authorize

Follow steps 3 and 4 on pages 12 and 13.

When the authorization process completes, download the Authorization file from our web server directly to your thumb drive (or floppy, etc.) and take it back to your non-internet-connected machine.

5. Whichever method you used above, you now need to import the generated Authorization file back into License Manager in order to complete the authorization process.

On the main screen of License Manager, click the **Import an existing authorization** button, and point it at the file on your thumb drive (or floppy, etc.)



License Manager imports the license file, and your software is be ready to use.

Other functions in the License Manager application

Delete Authorization

This can be used to remove an Authorization from your computer – for example, if you are uninstalling the associated software.

Refresh

This refreshes the list of installed products and their status.

View Log

This opens a detailed log of License Manager's activity in Notepad (Windows) or TextEdit (Mac OS X). You can then copy and paste the information to an email if our Tech Support team requests it.

Possible problems during authorization

We issue only a certain number of authorizations per serial number, and a serial number can only belong to one user. We appreciate these restrictions can be inconvenient in some circumstances - however, preventing abuse of the license helps keep prices down, and facilitates continued development, free updates and responsive technical support.

The following problems may arise:

- **Your serial number is registered to a different account.**

Your serial number belongs to you - it identifies you as the legitimate owner of the software. As such, only one person can be the owner of a given serial number, and only that user account can generate authorizations based on that serial number. Occasionally, users end up with more than one account, with some serials registered in one and some in another. If this applies to you, contact our support team to resolve the situation.

- **Too many authorizations have been issued for a serial number.**

If you've run out of authorizations (perhaps if you've installed the software on several different computers, or if you reinstall or upgrade your computer hardware frequently), you will need to contact our technical support team, explaining your situation.

If you encounter any other problems during the installation or authorization, first consult the [DCAM: Synth Squad FAQ](#). If your problem still cannot be resolved, contact our technical support team:

www.fxansion.com/support

After installation and authorization

Once you have authorized DCAM: Synth Squad, you are ready to launch its included instruments either standalone, or as plugins within a compatible host.

If you are unsure of how to use the standalone applications, or how to launch the DCAM instruments as plugins in your host, see Appendix 1 of the operation manual, provided as a PDF file with the installation.

Learning how to use DCAM: Synth Squad

The rest of this guide provides a brief introduction to using DCAM: Synth Squad.

The operation manual PDF file is installed in the following locations:

Mac OSX: **Library/Application Support/FXpansion/DCAM Synth Squad/Help**

Windows: **C:\Program Files\FXpansion\DCAM Synth Squad\Help**

The built-in Preview application in Mac OSX can view PDF files. Windows users must install a PDF reader, such as Adobe Acrobat Reader, available from:

get.adobe.com/reader

Video introductions

The DCAM: Synth Squad installation disc includes a series of QuickTime video tutorials on the DCAM instruments and their common features. The videos should play on Mac OSX without any additional software. To play them on Windows, you must first install Apple's QuickTime software for Windows or, alternatively, VLC or any other software capable of viewing QuickTime movies.

www.apple.com/quicktime/download

www.videolan.org/vlc

Software updates

We highly recommend that you check our site for updates as soon as possible. DCAM: Synth Squad is constantly under development in order to increase its performance.

If you encounter a problem with the software, it is very likely that the issue will be fixed by simply updating to the latest version available on our website.

Technical support

If you encounter any unresolvable problems when using DCAM: Synth Squad, please follow these steps:

1. Fully read the 'Install and Launch' guide and operation manual PDF.
2. Consult the DCAM: Synth Squad FAQ, which is frequently updated with current issues:

www.fxexpansion.com/synthsquadfaq

3. If you cannot resolve your problem with the information provided in the FAQ, please contact our technical support team, who will endeavour to get you up and running as quickly as possible.

www.fxexpansion.com/support

Please note that you must register your copy of DCAM: Synth Squad before you can receive support, whether through our support ticket system, or via the forum.

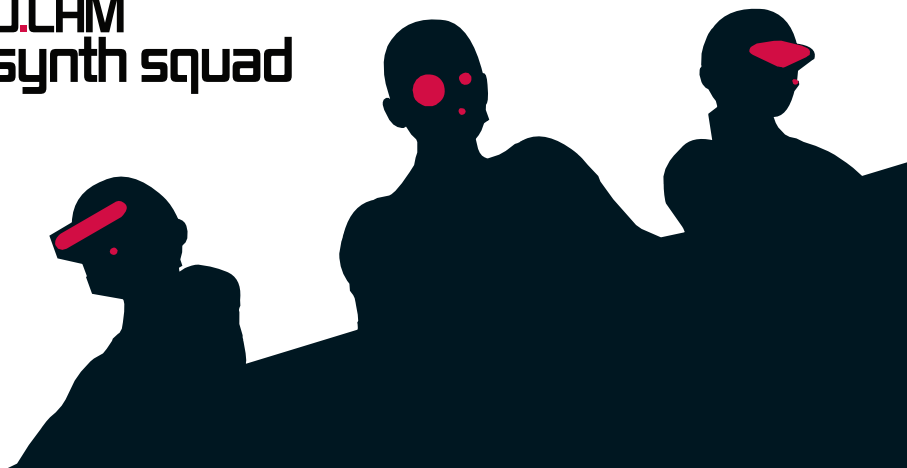
It is highly recommended to use the ticket system for most technical issues, as it prompts you for the information we need in order to process your support request as efficiently as possible.

If you do not provide adequate information, your query will take much longer to resolve!

Introduction to using DCAM: Synth Squad

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DCAM
synth squad

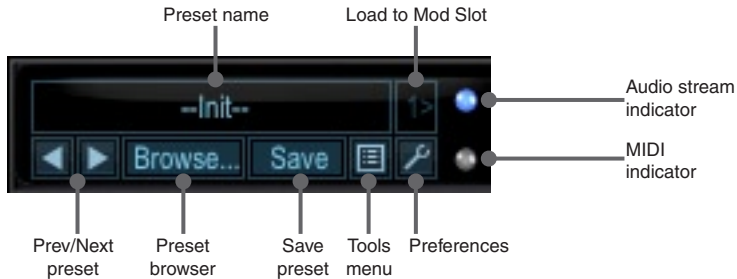


DCAM: Synth Squad interface basics

Using presets

Playing with the supplied factory presets is a great way to learn about the capabilities of DCAM: Synth Squad. You can load presets using the preset picker.

- **Preset picker**



- **Loading presets**



- Click the **Previous/Next** buttons to cycle through the available presets.



- Click the **Browse...** button to launch the preset browser (see opposite).



- Click on the preset name to display a drop-down menu of all available presets.
Click on any preset in the menu to load it.

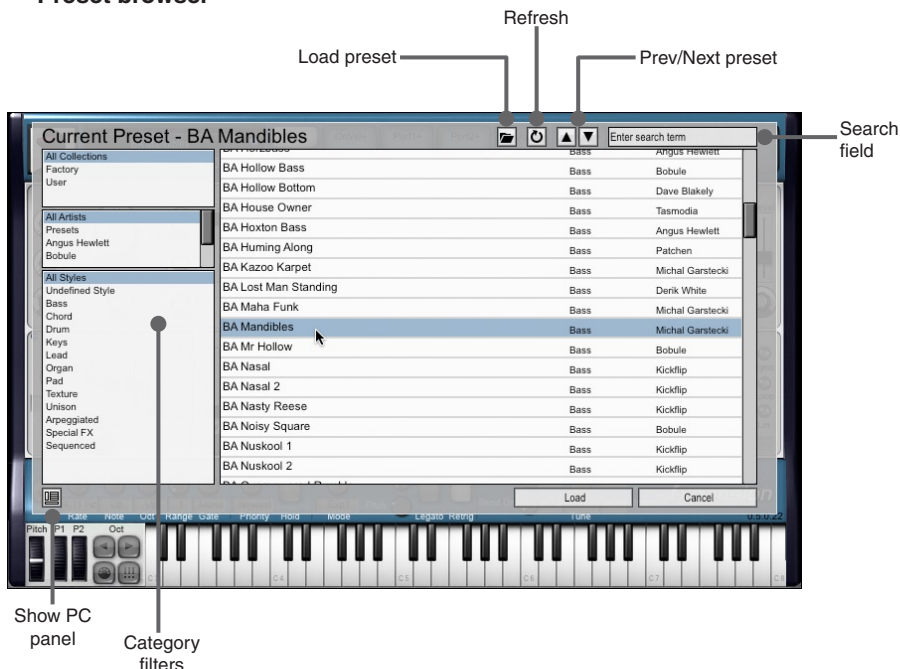
- **Other preset picker functions**

The **Save preset** button allows you to save your own presets, and the **Tools** menu offers Cut, Copy and Paste functions, which are useful for transferring the current preset to other instances of the synth that are currently open in your host. The **Preferences** panel is discussed later in this section, while the **Load to Mod Slot** function is an advanced feature related to the modulation system – see section 7:3 of the Operation Manual.

The **Audio stream indicator** lights up when the synth receives an audio stream – in other words, this indicator should be lit when the synth is operating properly within your host, or as a standalone application communicating with your audio interface.

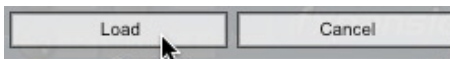
The **MIDI indicator** lights up when any MIDI message is received by the synth.

• Preset browser



Using the preset browser

1. Click on the **Browse...** button in the preset picker to display the preset browser.
2. Click on a preset in the list.
3. Play some MIDI notes into the synth – you'll hear the selected preset.
4. If you click the **Load** button, the preset is loaded into the synth.
5. If you click the **Cancel** button, the synth reverts back to its state before you opened the preset browser.



Presets can be selected either by clicking them in the listing, or by using the **Prev/Next** buttons.

Other preset browser functions

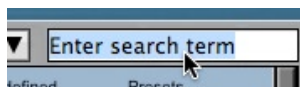
The **Load Preset** button allows you to load a preset from any location on your system (rather than merely within the synth plugins' own preset folders), while the **Refresh** button re-reads the contents of the preset folder.

Click in the **Search field** at the top-right of the preset browser, type a search term and press ENTER in order to search the name, author and style fields and display matching results.

The 3 **category filters** allow you to narrow down the displayed presets by criteria such as style and preset author.

All 3 filters and the search facility can be used at the same time.

The preset browser contains the **Show PC Panel** button. See section 6:9 of the Operation Manual for details of the PC (program change) panel, which is used to compile program change lists for changing presets during live performance.



Using DCAM: Synth Squad controls

• Sliders

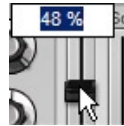


Sliders are adjusted by clicking and dragging up/down.

• Rotary pots



Rotary pots are adjusted by clicking and dragging up/down.



You can also double-click the control, type a value and press ENTER or RETURN.

• Fine control over parameters

Hold down the SHIFT key while adjusting a control for finer resolution.

Modulation in DCAM: Synth Squad: the TransMod system

• Main view



When you first launch a DCAM synth, it displays its *Main* view.

The Main view only edits the 'basic state' of the synth – the initial values of all controls before any TransMod modulation..

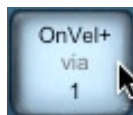
• Selecting TransMod slots



If you click on any of the 8 TransMod slots' selection area (where it says 'via'), or use the **Prev/Next slot** buttons, the synth's interface changes so that most of its controls are able to set and display modulation depths away from the initial value.

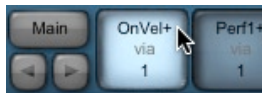
In this example, Strobe's first slot (assigned to key-on velocity) is selected, and contains modulation for the osc **Saw** waveform level, filter **Cutoff** and amp **Level** parameters.

• TransMod slots



- Upper:** Click to select slot and show *source* menu
- Middle:** Click to select slot for editing
- Lower:** Click to select slot and show *scaler* menu

• Choosing TransMod slot sources and scalers



1. Click on the top part of a TransMod slot to display the source menu.
2. Navigate through the sub-menus to the desired modulation source.



Scalers multiply the source, useful for scaling an LFO via the mod wheel, for example. They are selected in the same way – click on the lower part of the slot to select it and display the scaler menu.

Using controls with a TransMod slot selected

• Sliders



TransMod slot selected: Setting initial value

Click the slider cap and drag up/down to adjust its initial value, or double-click to type a value and press ENTER or RETURN.



TransMod slot selected: Setting modulation depth

Click outside the slider cap and drag up/down.

The slider cap divides and the modulation depth from the initial value is set.

When modulation exists:

- Click/drag the initial part of the slider cap (without the arrow) to adjust it together with the mod depth.
- The other part of the slider cap (with the arrow) can be used to adjust the modulation depth.
- Hold down ALT and move the initial part of the slider cap (without the arrow) to adjust the initial value only.

• Rotary pots



TransMod slot selected: Setting initial value

Click the centre of the rotary pot and drag up/down to adjust its initial value.



TransMod slot selected: Setting modulation depth

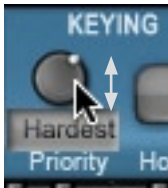
Click and drag the outer ring around the rotary pot to set the modulation depth from the initial value.

When modulation exists:

- Click/drag the centre of the control to adjust the initial value together with the modulation depth.
- Hold down ALT and move the centre of the control to adjust the initial value only.

Other types of controls in DCAM: Synth Squad

• Rotary selectors and drop-down menus



• Rotary selector click & drag (left)

Click the rotary selector and drag up/down.

• Rotary selector menu (right)

Click on the display that shows the setting and select the relevant setting from the drop-down menu that appears.

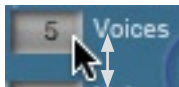


- Fusor contains some rotary selectors that are essentially rotary controls or 'knobs' (such as **Steps** in the screenshot to the right), some which have associated drop-down menus (such as **Step Duration**) and some which are simply drop-down menus (such as the **Multiplier** controls).

Drop-down menus can also be found in the synths – for example, TransMod slot source/scaler menus, performance controller selectors in the preferences panel and the preset menu (click on the preset name).

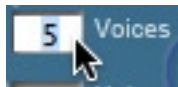
• Numerical text-boxes

There are two ways to adjust these controls:



• Click & drag:

Click the value and drag it up/down.



• Double-click & type:

Double-click the value, type a new one and press ENTER/RETURN.

• Buttons

Buttons are generally 'toggle' type buttons – click to activate, click again to deactivate. Buttons light up when activated. Some 'radio' button-style controls exist, such as the sub-oscillator **Octave** buttons in Strobe.

• Indicator LEDs

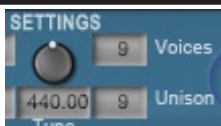
DCAM: Synth Squad instruments contain indicator LEDs which light up to represent LFO rates and other control-rate modulation. Do not confuse these with buttons, which are larger.

Voices and Unison voices

- Voices: the total number of synth voices that are possible
- Unison: the number of voices to play together for a single note

The overall polyphony is the number of voices divided by the number of unison voices.

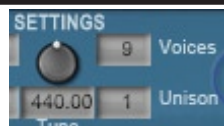
Voices and Unison voices are available in the TransMod system so that any parameter can be varied for each voice, although you can modulate pitch controls for classic 'unison detune' sounds.



Polyphony = 1
(9 voices for each note of poly)



Polyphony = 3
(3 voices for each note of poly)



Polyphony = 9
(1 voice for each note of poly)

Parameter context menu

Right-click (or CTRL-click) on any control to show its parameter context menu, which offers a number of functions and options relating to the control.

Reset Param

Resets the control's initial value to its default setting.

Clear Param Mod

Clears any modulation depths that exist for the control in the *current* TransMod slot.

Clear Param All Mod

Clears any modulation depths that exist for the control in *all* TransMod slots.

Lock Scope, Unlock Scope

See section 1:3 of the Operation Manual for details of these functions.

Clear Learn

This is used with the MIDI Learn function – see later in this section for more details.

Off, Just, Harmonic, Equal

Any controls related to audio pitch or frequency (usually oscillator pitch and filter cutoff controls) offer 3 distinct modes of operation, which are accessed via the parameter context menu.

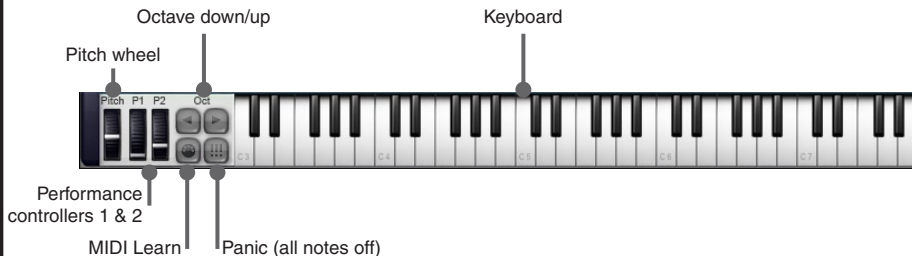
Use the **Just** and **Harmonic** modes to use perfect pitch ratios rather than imperfect, equal-tempered pitch. Harmonic mode snaps to whole harmonics.

Equal is used for equal-tempered tuning in semitones, snapping to whole semitones.

Select **Off** to return to equal-tempered tuning in semi-tones, without any snapping to whole semitones.



On-screen keyboard and performance controllers



This area of the interface mainly contains controls that are representations of hardware input – the keyboard, pitch-bend wheel and performance controllers 1 and 2.

While these are intended to be used with MIDI hardware, the interface elements can nevertheless be controlled with the mouse. Use the **Octave down/up** buttons to access the full range of MIDI notes on the keyboard.

The **MIDI Learn** button allows you to assign hardware MIDI CCs to any interface control.

The **Panic** button turns off all notes that are currently playing.

Assigning performance controllers (Perf1 and Perf2)

All presets supplied with DCAM: Synth Squad feature the first 3 TransMod modulation slots assigned to the following modulation sources:

- OnVel (note-on velocity)+
- Perf1+
- Perf2+

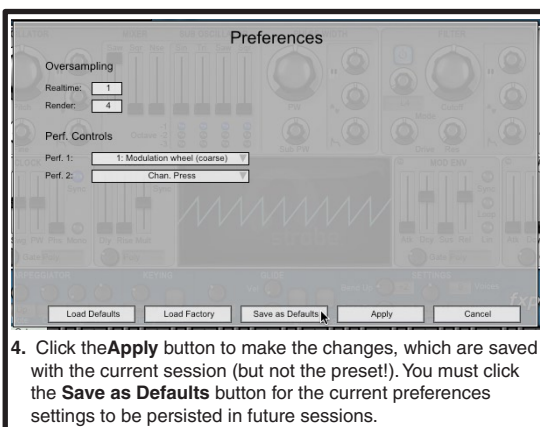
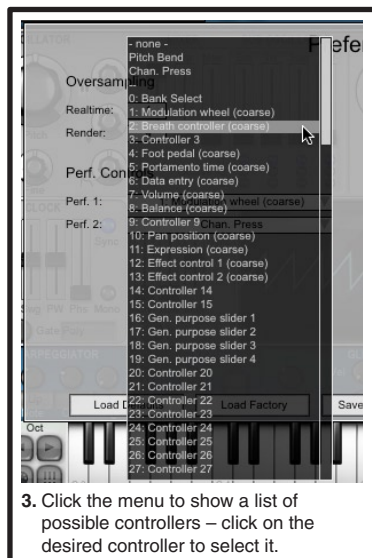
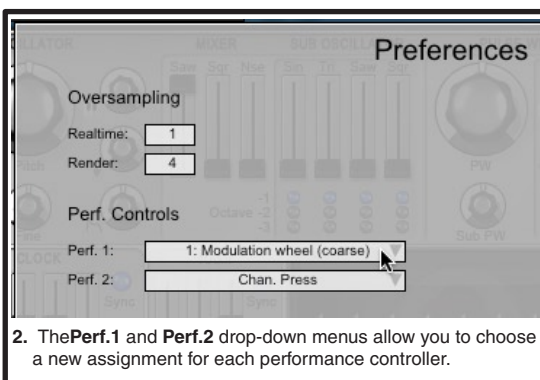
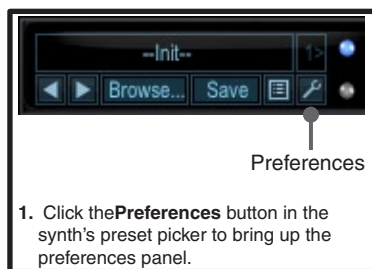


The performance controllers are shown to the left of the on-screen keyboard, and are intended to be mapped to your hardware controllers that are most immediate to use.

The default assignments for the 2 performance controllers are:

- **P1** (Perf.1) = Modulation wheel (MIDI CC#1)
- **P2** (Perf.2) = Mono pressure (channel aftertouch)

These assignments can be changed to any two performance controllers of your choice, using one of two methods. The first is using the preferences panel:



Alternatively, you can use the MIDI Learn system (see opposite).

Using MIDI Learn

DCAM: Synth Squad contains a built-in MIDI Learn system for mapping MIDI continuous controllers directly to parameters. Here is a guide to assigning Strobe's filter **Cutoff** to a MIDI CC:

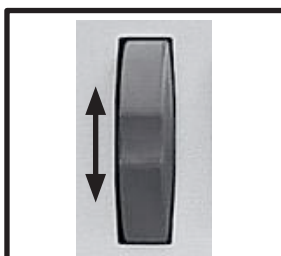


1. Click the **MIDI Learn** button to enter MIDI Learn mode:

- the interface is 'locked' – controls cannot be manipulated
- all controls that can be MIDI-controlled are highlighted



2. Click the control.



3. Move the controller – for example, the mod wheel.



4. The MIDI CC is now assigned to the control.

Click the **MIDI Learn** button again in order to exit MIDI Learn mode.

Note that the CC# can only be assigned to a *single control*. When you assign the modulation wheel to the **Cutoff**, the original mod wheel assignment (to **Perf.1**) is lost.

Changes to the MIDI Learn assignments are persisted for the current session (but are not saved with presets!).

To save the assignments for future use, you must use the **Save as Defaults** button in the Preferences panel.

Strobe



- souped-up performance synth
- designed for easy programming of classic subtractive analogue synth sounds
- centred around a simple 1-oscillator architecture
- includes a built-in arpeggiator

Strobe is installed as an instrument and as an effect for processing audio through its circuit.

See chapter 2 of the operation manual for a detailed guide to the synth's architecture and controls.

Osc stacking

Strobe is a single-oscillator synth, but its osc is capable of stacking without using whole unison voices. Try setting the **Stack** control to 3, and then play a key while increasing the **Detune** control.

Filter drive and modes

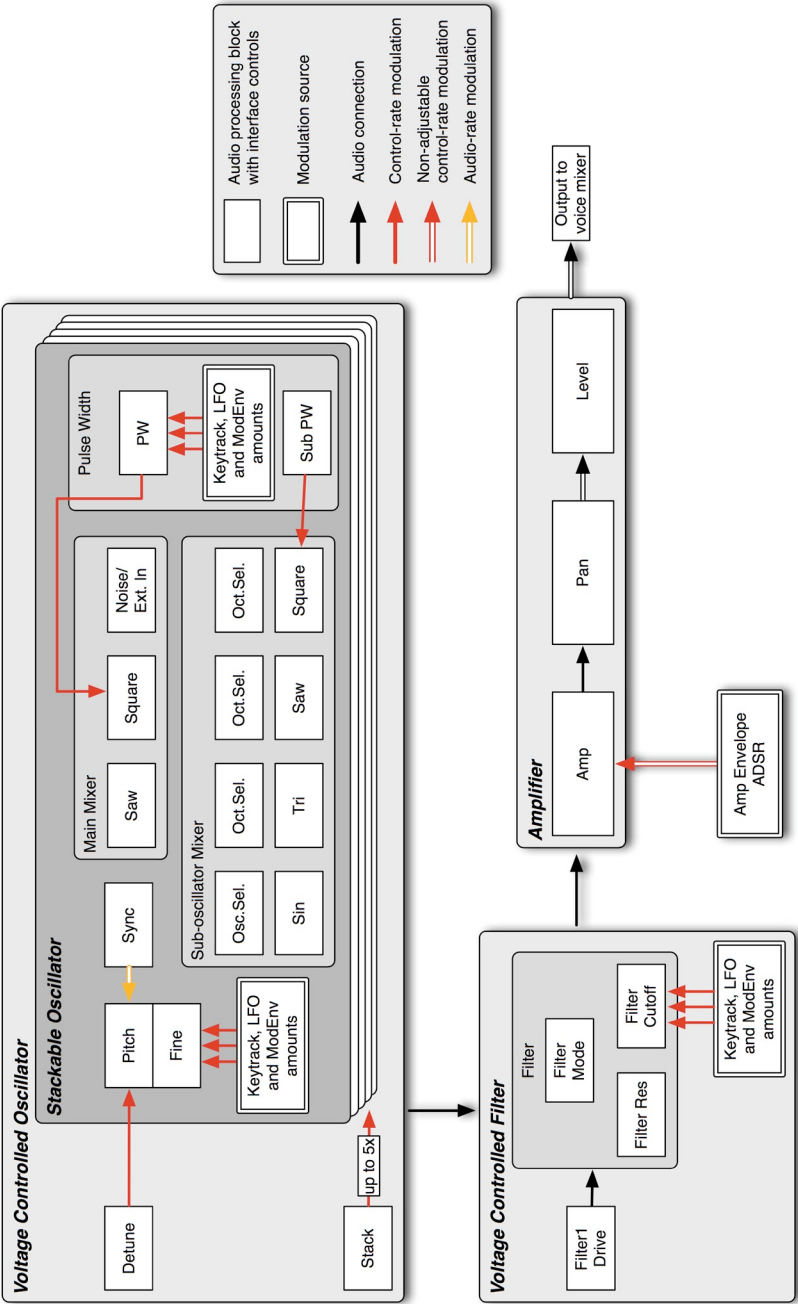
The filter stage in Strobe is extremely versatile. Its **Drive** control changes the filter's tone drastically, while the **Mode** control allows you to choose from 22 different filter responses.

Direct modulation

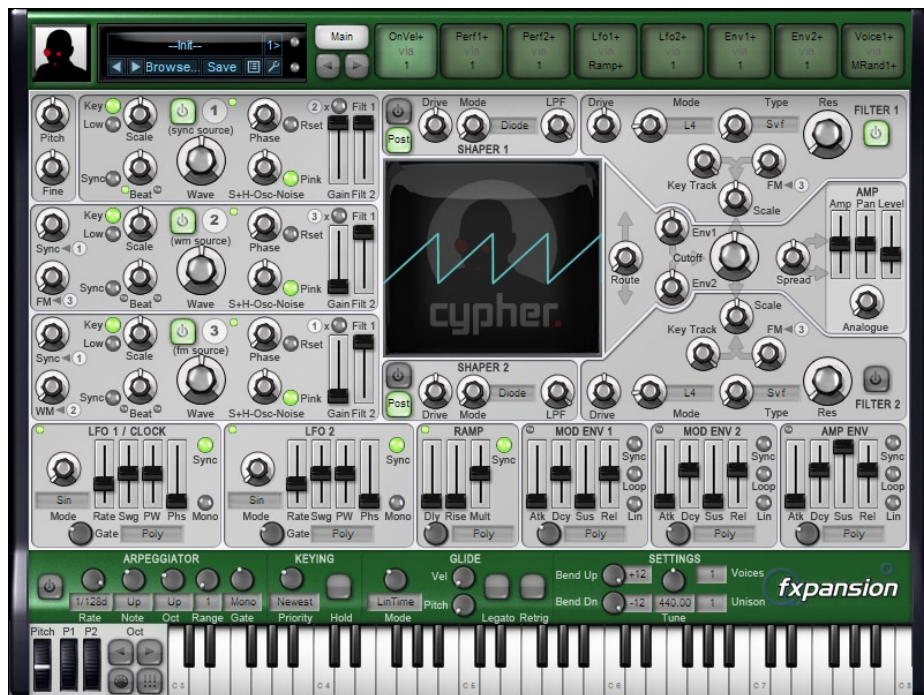
Strobe includes dedicated modulation depth controls for keytracking, LFO and Mod Envelope sources. These are provided for the osc **Pitch**, main **Pulse Width** (you must modulate the sub-osc pulse width via the TransMod system) and filter **Cutoff**.

These are provided to facilitate quick programming for the most commonly modulated parameters. The TransMod system allows you to modulate almost any control in Strobe.

Strobe signal flow



Cypher

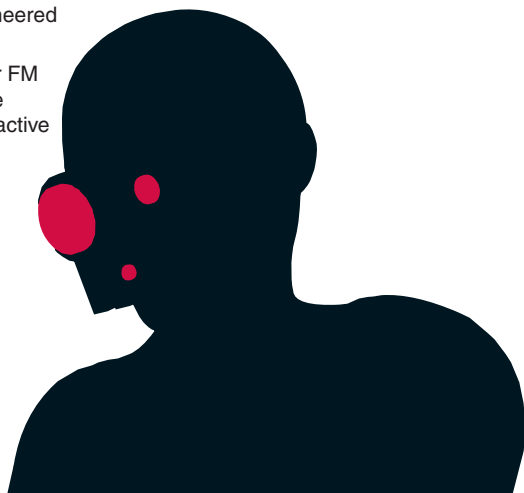


- 3-oscillator, complex synth
- FM and other audio-rate modulation
- several other specialized oscillator functions
- a dual-filter/waveshaper architecture
- a built-in arpeggiator

Cypher is installed as an instrument and as an effect for processing audio through its circuit.

The ethos behind Cypher is to provide a truly accurate model of an analogue synth capable of analogue-style FM and other audio-rate modulation (as opposed to digital multi-operator FM such as that found in Yamaha DX-series synths). It features thru-zero FM which allows musical digital-style sounds rendered with precision engineered models of analog oscillators.

Since Cypher is designed to be used primarily for FM and other advanced oscillator functions, it may be easier to use Strobe for most 'conventional' subtractive sounds, as it is optimized for quick and easy programming.



Programming with Cypher

Cypher requires a slightly different approach to a more conventional analogue-style synth.

Each osc is tuned using a **Scale** control in relation to a variable master pitch. Since any pitch-related control in DCAM: Synth Squad features several snapping modes including **Harmonic**, you can tune each osc with harmonic ratio multipliers instead of absolute frequencies.

This means you don't have to calculate harmonic frequencies yourself, making musically useful FM sounds much easier to achieve than with traditional analogue oscillators. You can change the snapping mode using the parameter context menu (see page 23).

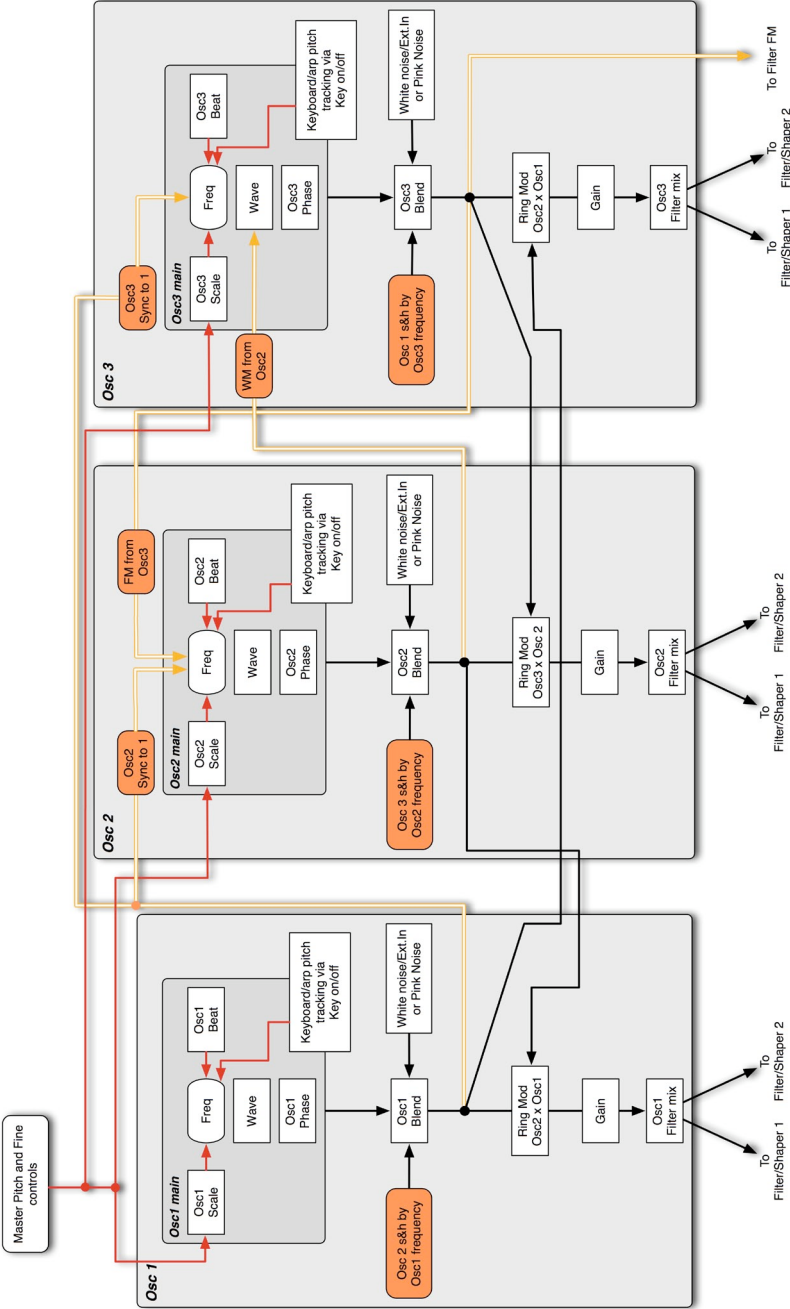
Oscillators

- Each osc features a waveshape that is continuously variable between Triangle, Saw, Square and Pulse. Modulate the Wave control between the Square and Pulse positions for traditional pulse width modulation effects.
- The waveshape of Osc3 can also be modulated at audio-rate by Osc2, with the **WM from 2** control.
- The frequency of Osc2 can be modulated at audio rate by Osc3, with the **FM from 3** control.
- Both Osc2 and Osc3 can sync to Osc1, using the **Sync to 1** controls. Cypher features variable-depth sync, which allows a wide variety of sync-based timbres.
- If you turn Osc1's **Blend** control (labelled 'S+H-Osc-Noise' to the far-left position, you hear Osc2 sampled and held by Osc1's frequency, at audio-rate. The same is true of Osc2/Osc3 and Osc3/Osc1. This function creates gritty timbres, reminiscent of low-resolution sampling and FM.
- The **Beat** control applies detuning while keeping the beating rate between oscillators constant.
- Each osc features a ring modulator function which multiplies it with one of the other oscs.
- Each oscillator can be used as an LFO by enabling the **Low** button. In LFO mode, the **Beat** control sets the LFO rate. The oscillator must be used as a TransMod source in order to modulate parameters.
- See section 3:2 and chapter 4 of the operation manual for more details on Cypher's oscillator section.

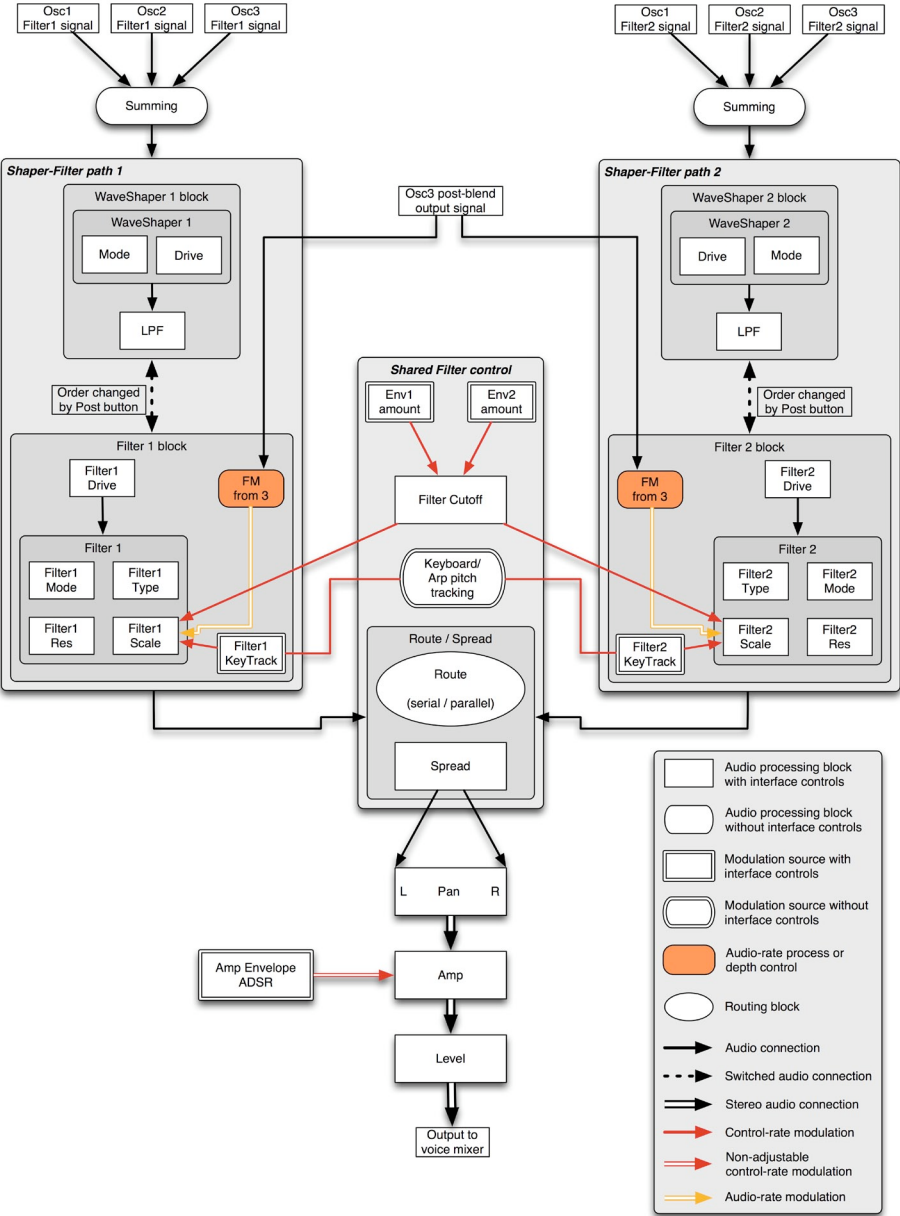
Waveshapers and Filters

- The waveshapers in Cypher can be placed before or after their corresponding filter using the **Post** button. Waveshapers can be used for adding grit and distortion to the signal.
- The filter section contains a set of controls that are common to both filters:
 - **Cutoff** frequency (adjusts the cutoff of both filters together)
 - Envelope modulation depth from Mod Envelopes 1 and 2 (to modulate the Cutoff frequency)
 - Routing and stereo spread controls
- It also contains individual controls for each of the two filters:
 - **Scale** (cutoff frequency of the filter relative to the shared **Cutoff** control)
 - **Res** (Resonance)
 - **KeyTrack** depth
 - **Drive, Mode and Type**
 - **FM from 3** (filter frequency modulation at audio-rate from Osc3)
- See sections 3:3 to 3:5 of the operation manual for more details on Cypher's waveshapers and filters.

Cypher signal flow: oscillator section



Cypher signal flow: dual waveshaper-filter and amp sections



Amber



- classic string synthesizer model with divide-down oscillator structure
- constantly generates the notes for a 96-note keyboard range within a single voice
- 3 vintage chorus models and a formant filter

Amber is installed as an instrument and as an effect for processing audio through its circuit.

Amber is one of the first attempts to realistically model a divide-down string synthesizer. While it excels at psychedelic string, pads and organ sounds, it is versatile enough to be used for other sounds such as basses, leads, keyboard/piano sounds and atmospheric textures.

See chapter 5 of the operation manual for more details about Amber's architecture and controls.

Synth and Ensemble sections

Each of these two sections feature a paraphonic stage (that can generate 96 notes within a single voice) followed by a polyphonic stage (which is monophonic when using a single voice).

Both sections are very similar, with their respective monophonic processing stages defining their character. The Synth section features a polyphonic resonant filter, while the Ensemble section contains a formant filter and a chorus, switchable between 3 different chorus models.

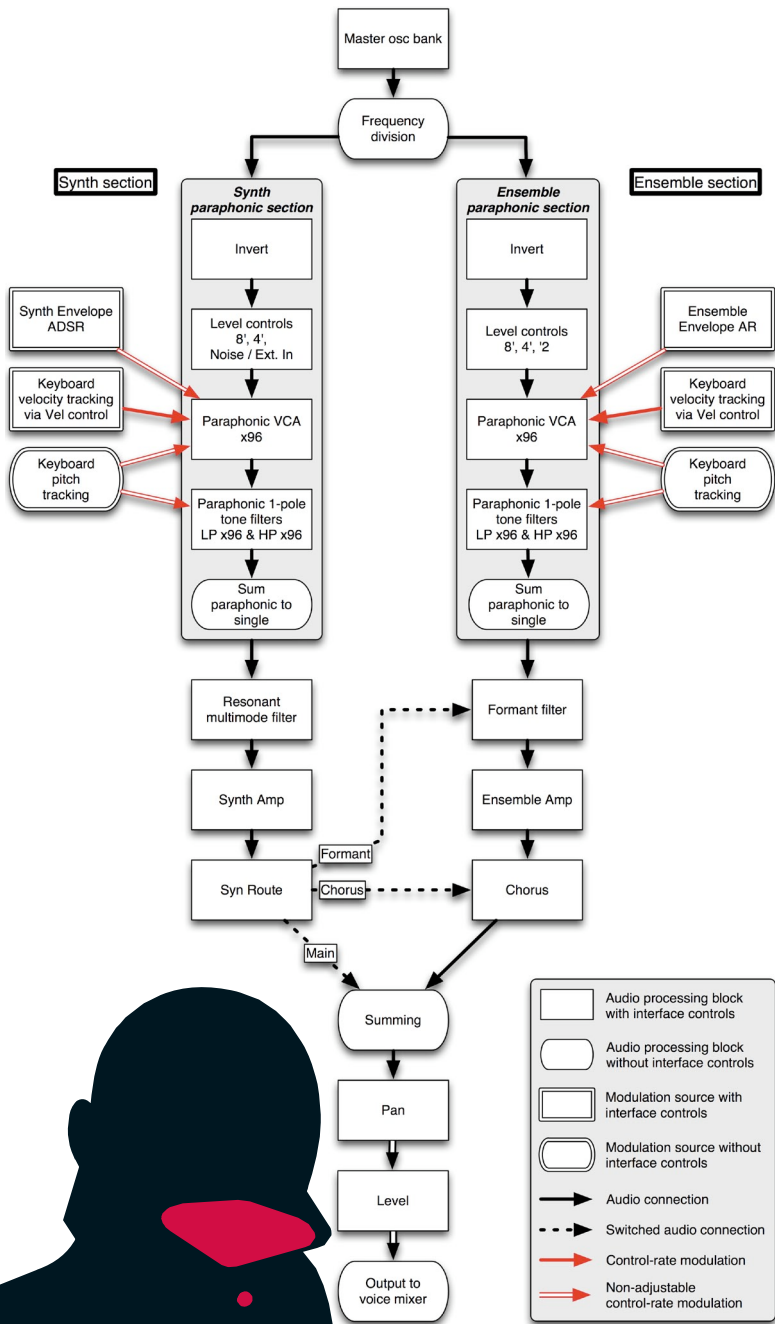
Performance controls

The **Mode** control in the Performance controls section allows drastic changes to Amber's playing response. Each section can be set to 'Paraphonic' mode, meaning that each paraphonic note features its own velocity-sensitive amp envelope, the shape of which is determined by the Synth/Ensemble envelopes. Alternatively, each section can be set to one of several 'Mono' modes, including paraphonic single-amp operation ('MonoAtk' and 'MonoRel') and fully monophonic operation ('MonoNote'). Setting both sections to 'MonoNote' causes Amber to behave like a conventional polyphonic synth.

Modulation in Amber

Note that during single-voice paraphonic operation, the TransMod system acts monophonically. To use polyphonic modulation, you must use multiple Amber voices. Note that a single voice includes 12 oscillators, 192 velocity-sensitive envelopes and 384 1-pole tone filters, as well as the polyphonic elements. It therefore uses a lot more CPU per voice than Strobe or Cypher!

Amber signal flow



Fusor



Fusor is an environment for:

- layering up to 3 DCAM synths
 - applying FX processing
 - advanced step-sequencing and arpeggiation with the Animator device
 - performing modulation between the various loaded devices with the FuseMod system
- Fusor is installed only as an instrument plugin – it cannot be used as an audio effect plugin.

Chapter 8 of the operation manual discusses Fusor in detail.

FuseMod

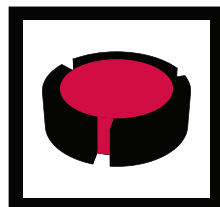
The FuseMod system (very similar to the TransMod system used in the synths) allows you to modulate parameters between Fusor devices, including loaded DCAM synths. Most modulation between FuseMod devices, such as Animator, the MonoMod LFOs/envelope followers and the FX is *monophonic*. However, you can set up modulation between the synths using their TransMod slots for polyphonic modulation between them.

High-quality FX suite

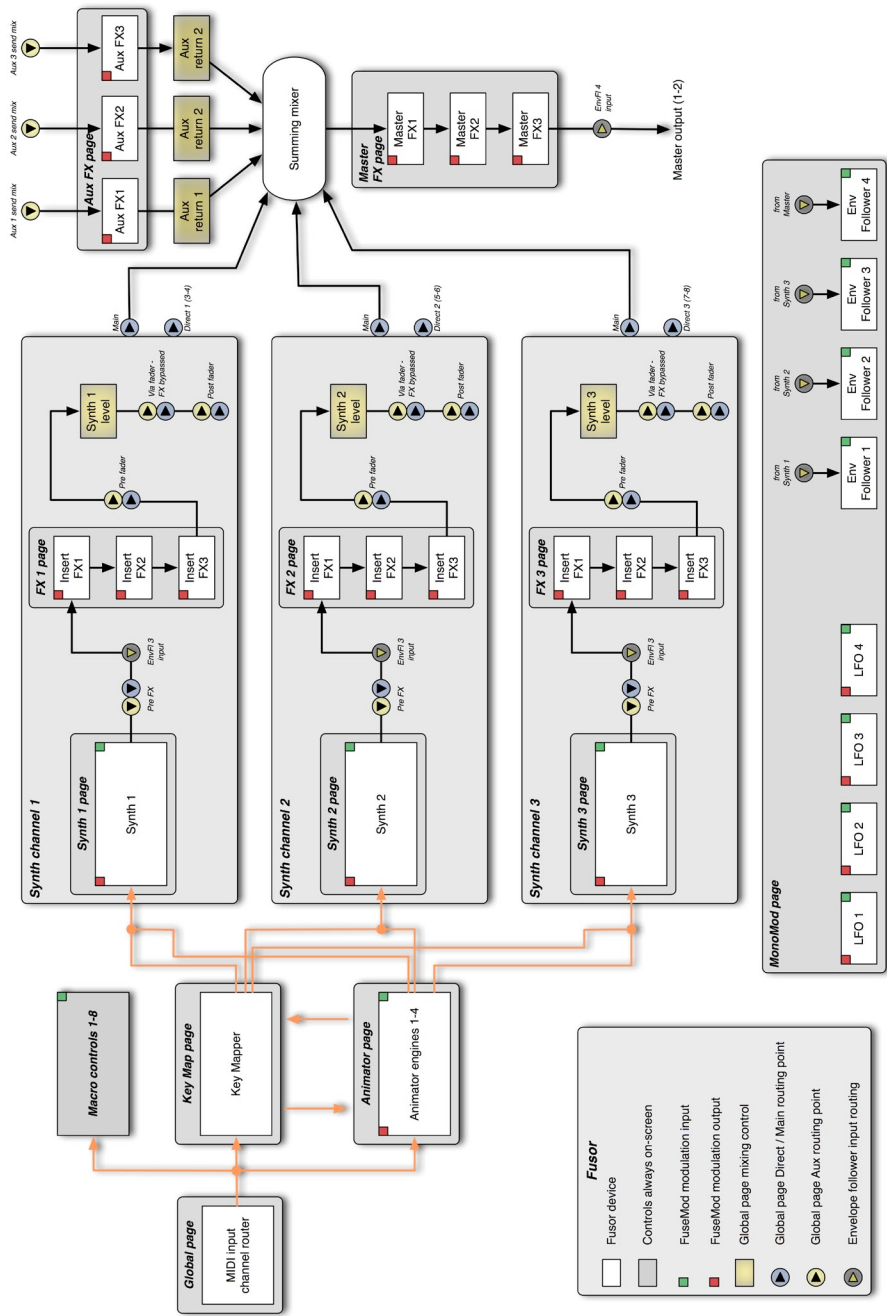
While the DCAM synths have no built-in FX, Fusor features a comprehensive suite of FX featuring classic chorus, delay and phaser effects, circuit-modelled compression, filtering and distortion, bit-crushing and high-quality reverburation with the licensed Overloud Brevier algorithms. You can set up FX as inserts at various points, or as aux sends, and FX parameters can be modulated via the FuseMod system.

Animator step-sequencer/arpeggiator

Animator is Fusor's built-in step-sequencer with arpeggiator and parameter modulation sequencing functions.



Fusor signal flow



Getting started with Fusor

Loading synths

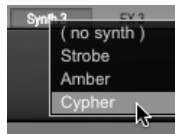
Initialize Fusor and load a synth into a synth channel. You can do this in any of 3 ways:



- Click on the Synth 1, 2 or 3 page buttons. If the channel is empty, a graphical selector is shown – click the desired synth to load it.

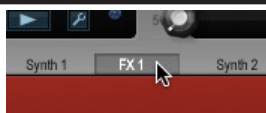


- Use the device picker for the synth channel in the Global page.



- Right-click on the synth channel's page button and choose the desired synth from the list that appears.

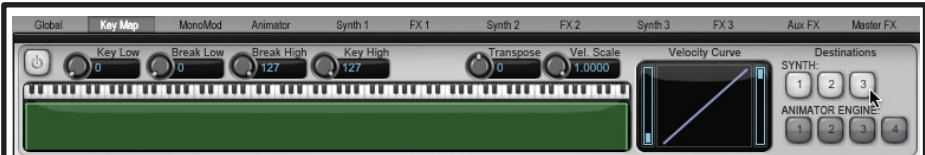
Adding FX to a synth channel



- Load a synth into synth channel 1, then click on the FX1 page button.
- Move the mouse over FX slot 1 and load the Delay from the device selector that appears. Load the Chorus into the FX slot 2.



Layering synths

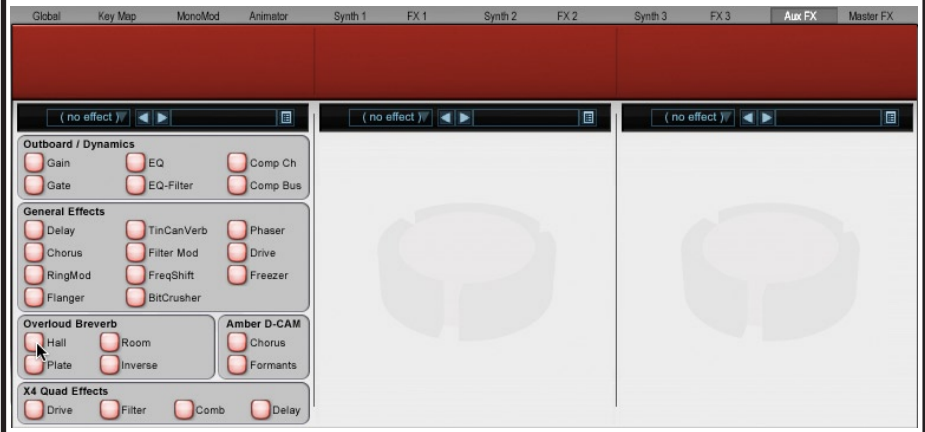


1. Load synths into channels 1, 2 and 3 and load presets into each of them.
2. Switch to the Key Map page and turn off all the Animator buttons in the Destinations area for the first key map. Then, turn on the 3 Synth buttons in the Destinations area.

Setting up a reverb as an Aux



1. After working through the 'Layering synths' tutorial above, click on the Aux FX page button.
2. Move the mouse over FX slot 1 and load Breverb Hall from the device selector that appears.



3. Increase the **Wet Mix** control on Breverb Hall to 100%.



4. Switch to the Global page.

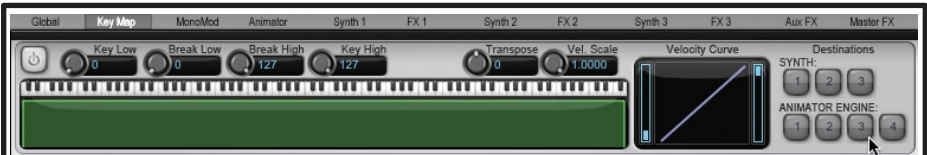


5. On synth channel 1, increase the level for Aux send 1.

Splitting 3 synths across the keyboard



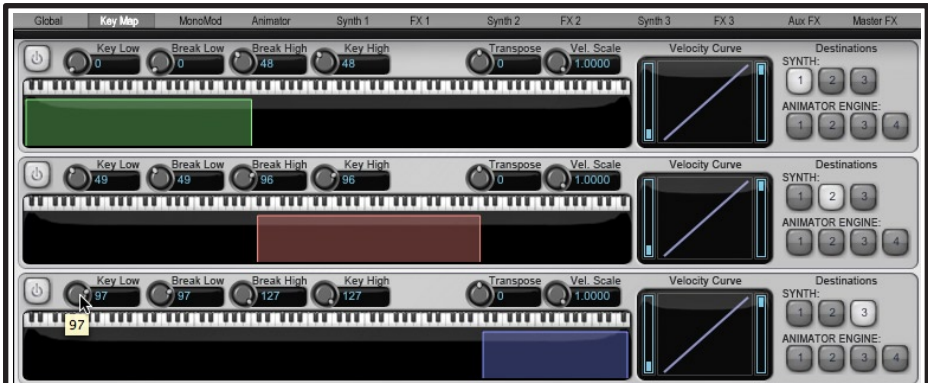
- 1. Initialize Fusor and load 3 synths with different presets in the 3 synth channels.
- 2. Enable the **Power** button for key maps 2 and 3, so that the first 3 key maps are active.



- 3. Turn off the Animator buttons in the **Destinations** area for key map 1.



- 3. Enable synth 1 in key map 1's **Destinations** area, synth 2 for key map 2 and synth 3 for key map 3.



4. Set up key maps 1-3 as follows:

Key map 1: **Key Low** = 0, **Key High** = 48

Key map 2: **Key Low** = 49, **Key High** = 96

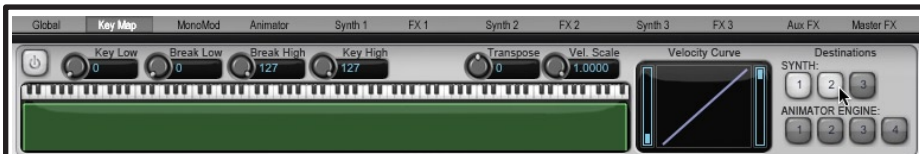
Key map 3: **Key Low** = 97, **Key High** = 127

Set **Break Low** to the same value as **Key Low** on each key map, and also set **Break High** to the same as **Key High**.

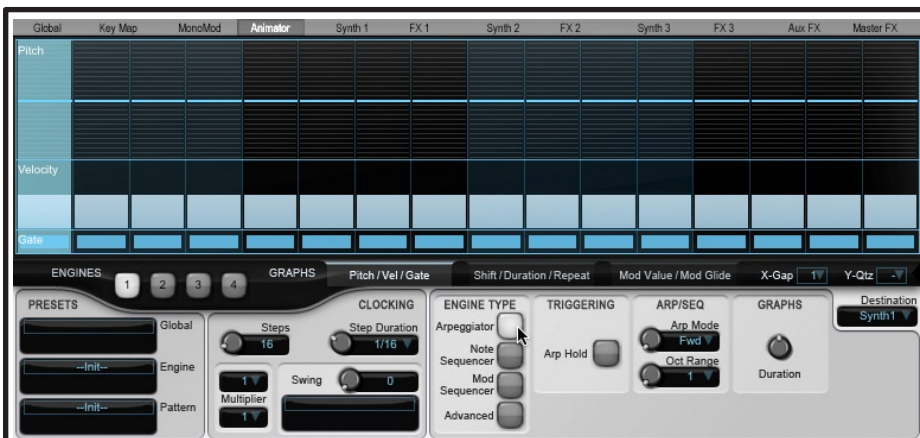
Using Animator as an arpeggiator



1. Initialize Fusor and load Strobe into synth channel 1, and Cypher into synth channel 2. Load a lead-style preset into both synths.
2. Route MIDI channel 1 (or whatever channel you're using for MIDI input) to Animator engine 1 in the Global page ('Seq1' in the drop-down menu).



3. In the Key Map page, disable the 3 Animator engines and enable synth channels 1 and 2 in the Destinations area.



4. Click on the Animator page button, and then select the Arpeggiator engine type.



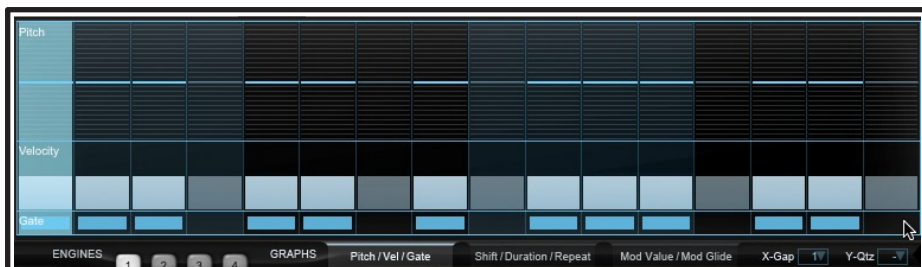
5. Choose 'KeyMapper' as the engine Destination.

The routing for MIDI input has now been set up as follows:

MIDI input → Animator engine 1 → Key map → Synths 1 & 2

6. Start the Fusor transport by clicking the **Start/Stop** button in the Fusor LCD. You must start your host transport if you're running Fusor as a plugin with the **Sync** button enabled.





7. Enter some events in the Gate Graph by clicking the cells. The Gate Graph switches steps on and off in the pattern.

Now try playing chords on your MIDI keyboard.

Note how the chord does not reset the pattern when you play it – generated note events occur when the sequencer falls on steps with the Gate cell turned on.



8. Switch to the Advanced engine type.

You'll notice that the sequencer generates notes without any keyboard input.



9. In the 'Triggering' section, set the **Latch/Hold** parameter to 'Off'.

You'll notice that the sequencer no longer generates notes without keyboard input.

Now try playing a chord – the behaviour is much the same as it was before switching the engine type.



10. Set the **Trigger Mode** parameter to 'Trig'.

Now try playing a chord. You'll notice the pattern now starts from the beginning whenever you play a new chord.

The Advanced engine type offers many ways of creating very complex arpeggio patterns – see section 8:13 for more details, or just experiment!

Using Animator as a note step-sequencer



1. Initialize Fusor and perform steps 1 and 2 of the 'Using Animator as an Arpeggiator' tutorial.
2. Switch to the Animator page and click on the Note Sequencer engine type.

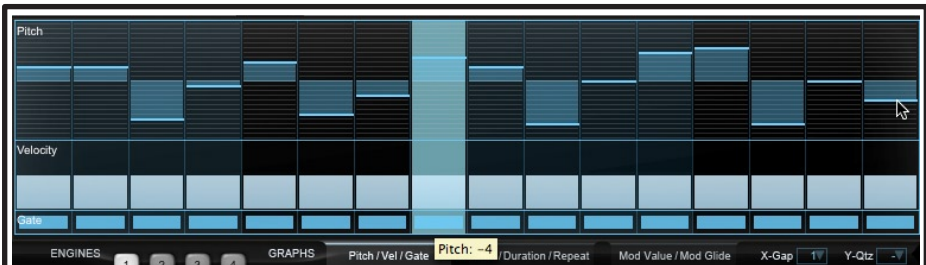
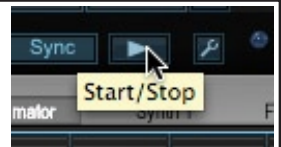


3. Choose 'KeyMapper' as the engine **Destination**.

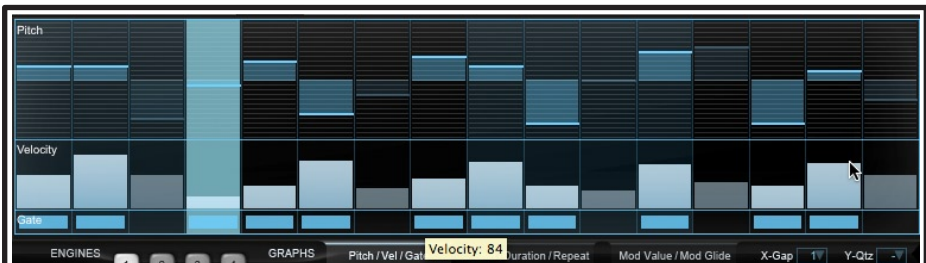
The routing for MIDI input has now been set up as follows:

MIDI input → Animator engine 1 → Key map → Synths 1 & 2

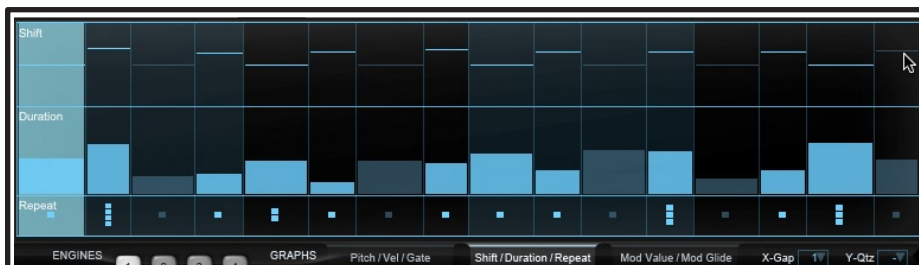
4. Start the Fusor transport by clicking the **Start/Stop** button in the Fusor LCD.
You must start your host transport if you're running Fusor as a plugin with the **Sync** button enabled.



5. Draw in a series of events on the Pitch Graph.



6. Do the same for the Velocity and Gate Graphs.



7. Switch to the next page of Graphs and draw in events for the Shift, Duration and Repeat Graphs. Note how the placements of steps change with Shift Graph events.

Setting a positive value (above the centre-line) on off-beat steps creates a 'swing' effect.



8. Switch to the Synth 1 page and set Animator engine 1 as the source for TransMod slot 4 – 'Step 1 [+]' in the Macro sub-menu.



9. Set a modulation depth for the FilterCutoff control.



10. Switch back to the Animator page and then to the Modulation Graphs. Draw in some values for the Mod. Value and Mod. Glide Graphs.

You should now hear Strobe's cutoff frequency moving according to the modulation Graphs.

The Mod Sequencer engine type allows you to do this while playing notes on the engine target directly.

You can also try switching to the Advanced engine type, which has many more ways of varying patterns.

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