



DIOSYNTH

Diosynth Manager User Guide v1.2.0

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Technical Information

System Requirements

- macOS® 11+
- Windows® 10+

Installation

Be sure to get the latest version of Diosynth Manager from <http://www.ashunsoundmachines.com/downloads>. You'll find it on the Software/Firmware tab.

After downloading and unzipping the file, double-click the installer file (.exe for Windows, .pkg for macOS) and then follow the prompts on each page. The Windows version gives you the option of adding a shortcut to the desktop of your computer, if you like. Mac users can make an alias inside the Applications folder and drag it to the desktop.

Check for Firmware Updates

Please also check our website for the latest firmware for your Diosynth. It would be in the same location: <http://www.ashunsoundmachines.com/downloads>, on the Software/Firmware tab.

We recommend updating your Diosynth firmware as soon as possible so you can take full advantage of the features in Diosynth Manager. If Diosynth Manager detects a very old version of firmware, it will suggest that you update first.

Here's the quickest way to learn which version of firmware is installed on your Diosynth:

1. Press [SETUP]
2. Turn the encoder clockwise to the last option
3. Slowly turn the encoder 2 clicks in the other direction
4. The top line should say System Info. The bottom line shows the firmware version number.

After you download the Diosynth Firmware Pack, unzip the file and use Diosynth Manager to complete the update process as described in the next section.

Update the Diosynth Firmware

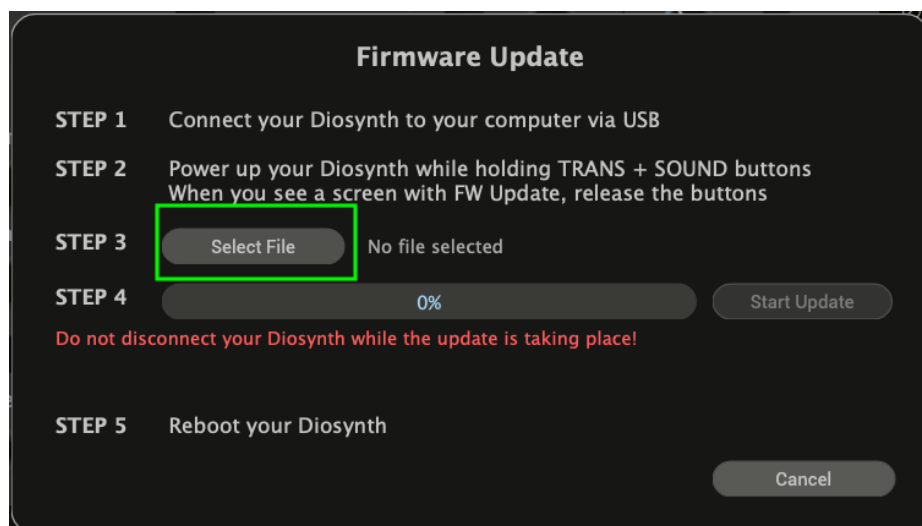
Always back up your patches with the latest version of Diosynth Manager before you update your Diosynth. Please refer to the descriptions of the [Backup](#) and [Restore](#) procedures before updating your unit.

Getting Started

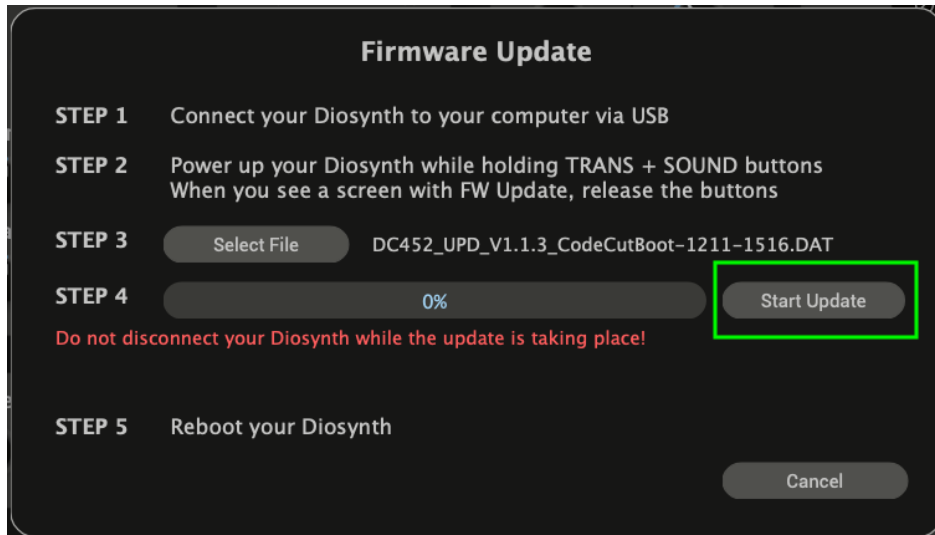
If you haven't already done so, download the new Diosynth firmware from the Downloads page on our website at <http://www.ashunsoundmachines.com/downloads>. It'll be on the Software/Firmware tab. Then, unzip the file and read on.

Firmware Upgrade Procedure

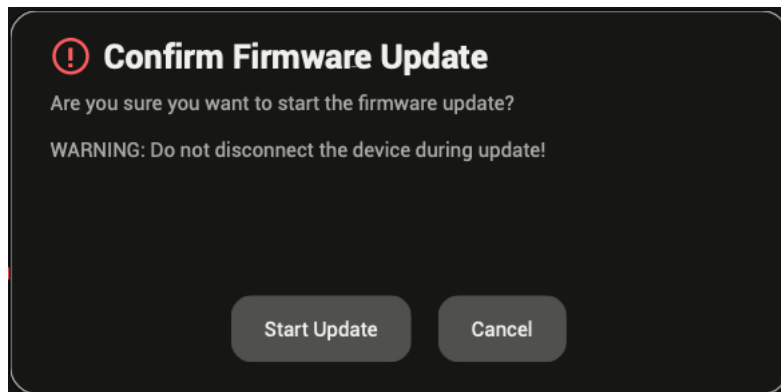
1. Power up the Diosynth while holding the [TRANS] and [SOUND] buttons.
2. Wait until the display on the unit shows FW Update.
3. In Diosynth Manager, click the **Device** option in the menu bar and select **Firmware Update...** to begin.
4. Click **Select File** in the Firmware Update window, as pictured below.



5. Navigate to the new firmware file on your computer.
6. Click **Start Update**.



7. A confirmation request will appear.



8. Click **Start Update** again and let the process run its course. The percentage counter will advance from 0-100%.

DO NOT interrupt this process. Please let it run until it is complete.

9. When the update is finished, click **OK** and read the next section.

After an update...

1. **Perform a Setup Reset (if required).**
This isn't always necessary, but if a firmware update requires a Setup Reset, it's easy:
 - Reboot the unit
 - Press **[SETUP]** and turn the encoder to the last page, then turn it the other direction by 4 clicks to reach the Setup Reset page.
 - Click the encoder. You'll see "Reset No/Yes" on the display.
 - Use the encoder to select Yes, click the encoder to confirm, or press **[TRANS]** to exit.
2. **Confirm the OS.**
 - Press **[SETUP]** and turn the encoder to the last page, then turn it the other direction by 2 clicks to view the OS page.
 - Verify that the OS version matches the number shown in the firmware update file name.

Introduction

Diosynth Manager serves as a patch librarian, a patch editor, and an updater for your Diosynth. Its main window has 4 tabs: Patch Manager, Patch Editor, Favorites, and Setup.

- **Patch Manager** has two independent browsers (left and right), so you can view two banks of patches at once.
- **Patch Editor** provides access to the settings that make the patch what it is: The independent parameters for Part 1 and Part 2, and the Patch parameters that apply to both Parts.
- The **Favorites** tab holds a list of up to 128 patches which you have designated as your favorite patches inside the unit. The list can be created inside Diosynth and brought into Diosynth Manager automatically upon launch, or by using Diosynth Manager and Diosynth together while they are connected.
- **Setup** lets you choose the settings that affect the entire Diosynth, such as what the Assign buttons and Press pads do. This is also where you can adjust the Master Tuning, change the MIDI settings, etc.

Use Diosynth Manager to reorganize an existing bank of patches, to compile genre-specific banks, or to construct a bank of your favorites from the included factory patch banks and your own creations. You can also reorder the patches in a bank by number, name, or category. And when all is said and done you can easily backup and restore the entire contents of your Diosynth.

Demo mode lets you try Diosynth Manager without a Diosynth attached. The Patch Editor and Setup tabs are available, but the changes you make will not be saved; they will be updated to the Diosynth settings after it is connected.

You can also work with User banks on the Patch Manager tab in **Demo mode**; those changes **are** saved because User banks are in your computer, not on the Diosynth. Once a Diosynth is connected, you can copy those patches or banks into the Diosynth if you like.

Connection Setup

Connect your Diosynth with a USB cable directly to a native USB port on your computer, then turn on the Diosynth. You could also connect the Diosynth through MIDI DIN with a MIDI interface, but make sure the MIDI In and Out jacks are both connected. We strongly recommend using a direct USB connection for best performance.

Launch the Diosynth Manager application. If the Diosynth is connected via USB, it should be recognized automatically.

To set up the connection manually, click the Diosynth logo in the upper left corner. You'll see something like this:



If there's a green dot on the left side and check mark next to the Diosynth name, the connection has already been established. If not, select the unit to make the connection.

Note: Diosynth can be connected to Diosynth Manager via USB and Diosynth Live via Bluetooth at the same time.

File Structure

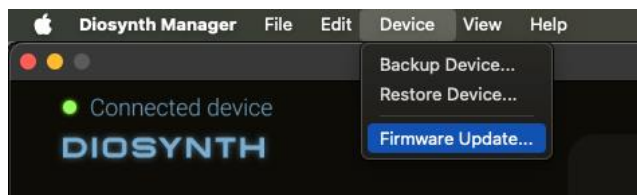
- A dedicated folder is created in the computer after installation. The browser in Diosynth Manager reads all folders and patch bank files stored under this path: `...\Documents\ASM\Diosynth\Patch`
- Factory Banks are placed in `...\Documents\ASM\Diosynth\Patch\Packs`
This is where imported banks are placed, too.
Note: Diosynth Manager does not let you alter the Factory banks, so it isn't possible to copy patches into them. The browser window displays these with a lighter gray background to make it easier to tell them apart.
- The default folder for new user banks is here: `...\Documents\ASM\Diosynth\Patch\User`
- Banks of patches are stored as `".diobank"`.
- Backup files are stored in `...\Documents\ASM\Diosynth\Backup`
- Diosynth backup files are stored as `".diobak"`.

Overview

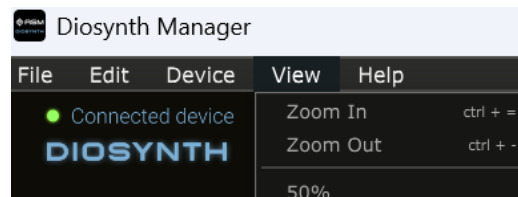
Diosynth Manager has four main modes of operation, and each is packed with features. It also has quite a few utility functions available in the menu bar.

We'll start at the top and work our way through everything.

Menu bar



Menu bar: macOS



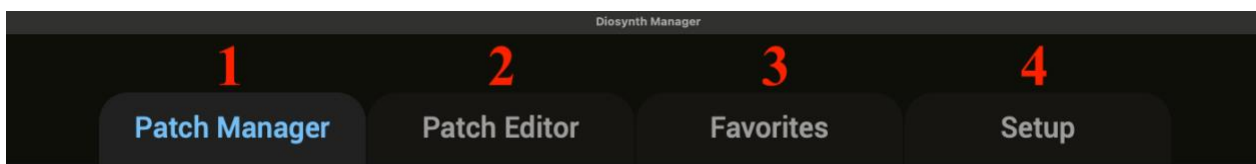
Menu bar: Windows

These features can be accessed no matter which tab is selected (Patch Manager, Patch Editor, Favorites, or Setup). They are listed below. Click the links if you want to know more about those features right away.

- **Diosynth Manager: About** – Reveals the version numbers for Diosynth Manager and Diosynth firmware.
- **File: [New Bank](#)** – Use this to create an empty bank to organize your patches.
- **File: [Import Bank](#)** – This makes it easy to collect new banks of patches from ASM and your friends.
- **File: [Open Backup as Local Banks](#)** – Use this to extract the banks from a backup file into separate banks.
- **Edit: Undo/Redo** – If you change your mind, you can undo an action or restore it (up to 30 times!).
- **Device: [Backup/Restore](#)** – When patches are ready for a gig or session, use this to preserve or restore them.
- **Device: [Firmware Update](#)** – When new firmware is available, select this to start the update process.
- **View** – Select a window size percentage, zoom in or out (Ctrl/Cmd + =/-), or click-drag the window corner.
- **Help** – Access the User Guides for Diosynth Manager and Diosynth Live, and the Owners Manual for Diosynth.

Main Divisions

The four main sections of Diosynth Manager are accessed by selecting one of these tabs.



Tab	Name	Description
1	Patch Manager	Create, select and organize patch banks on your computer and Diosynth.
2	Patch Editor	Edit patch parameters and save to the same location or a different one.
3	Favorites	This is where you'll find the 128 patches you have designated as a Favorite.
4	Setup	Configure Diosynth to optimize playing experience and MIDI connectivity.

There are two other items in the top window: the Connection Setup on the left, and the ASM Logo on the right.

Connect to Diosynth

See [Connection Setup](#) on the previous page for a description of how to connect Diosynth to Diosynth Manager.

ASM Logo

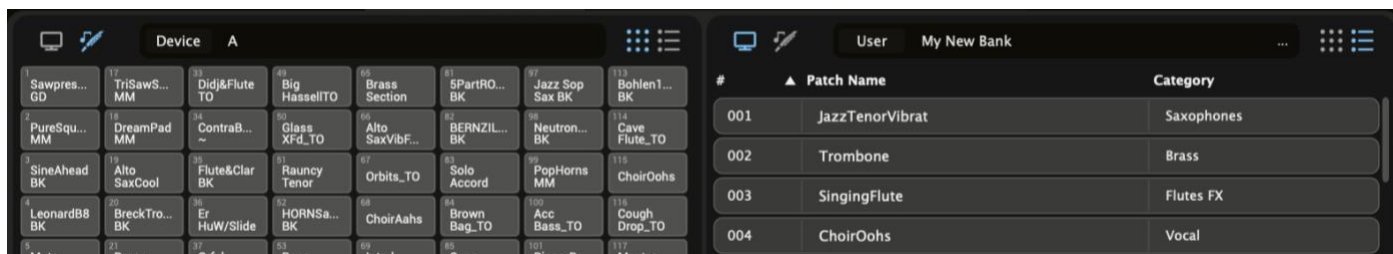
Click the ASM Logo in the upper right corner of the application window to view the Diosynth Manager version number and the firmware version of the attached Diosynth.

Layout [Patch Manager]

Note: This section provides an overview of the Patch Manager tab. For full details about the Patch Manager, such as how to create a new bank or using the cut/copy/paste/delete features, see the [Patch Manager](#) chapter.

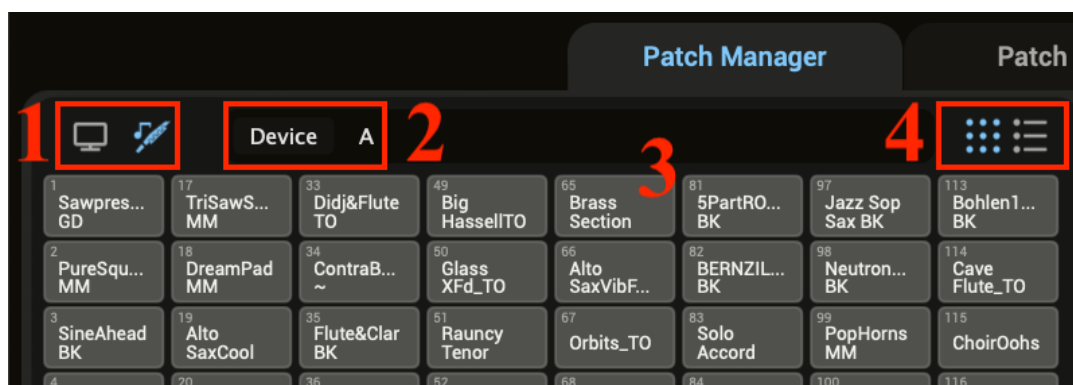
Two bank browsers

The first tab selects the Patch Manager window. It provides two browser windows, side by side. This lets you browse two banks simultaneously for flexible patch management. Either window can be in Tiles view or List view (see [Patch browsing options](#) #4), and either one can access patch banks in the Diosynth or on the computer.



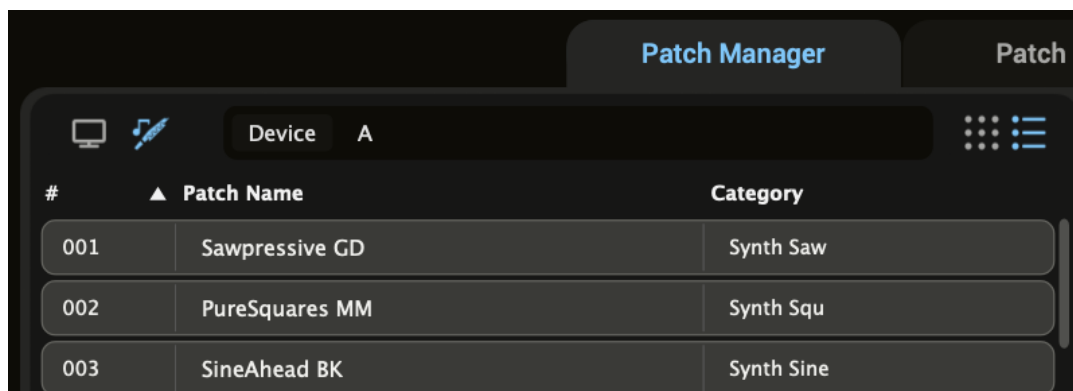
Patch browsing options

Each browser toolbar has four main components.



Patch Manager – Tiles view

1. **Computer/Diosynth Selector** – select the source to browse
2. **Current Source and Bank** – drop-down menu to select the bank to browse in the corresponding browser.
3. **Bank contents** – This shows the names of the patches in the selected bank. There are two ways to view the contents of the bank: Tiles view and List view. The view type can be toggled using the Tile/List view option (#4 in the figure above; described below).
4. **Tiles/List view** – Click this area to change the way the patches are displayed.
 - Tiles view shows the patch name and number in an 8 x 16 grid (as pictured above).
 - List view shows the name, number, and category in a vertical stack (see below).

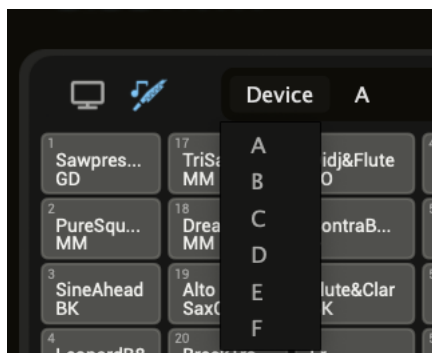


Patch Manager – List view

[List view](#) has a few more features than Tiles view ([Sort options](#), for example). Please see the [Patch Manager](#) chapter for the full details.

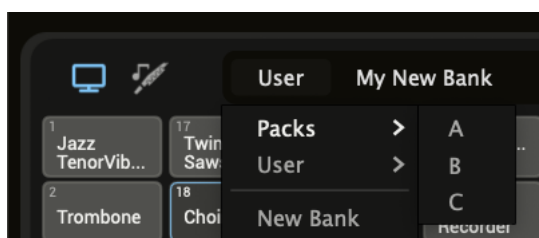
Selecting a bank

To select a bank when Diosynth is selected, click the Device button (or anywhere in the black field that surrounds it).



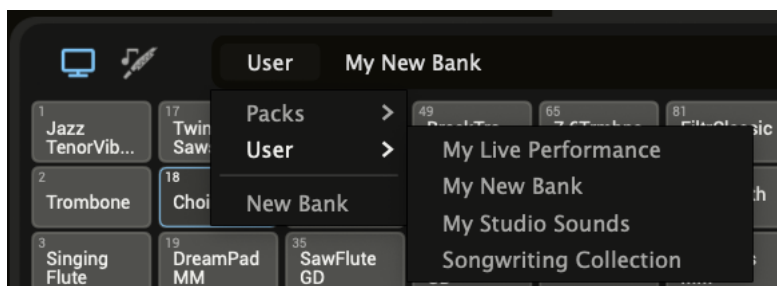
Select a Diosynth bank

To select a bank when the computer is selected, click the word User (or anywhere in the black field that surrounds it).



Select a patch bank in the computer

Two options are shown in the drop-down menu: Packs (the factory banks) and User (banks you have created).



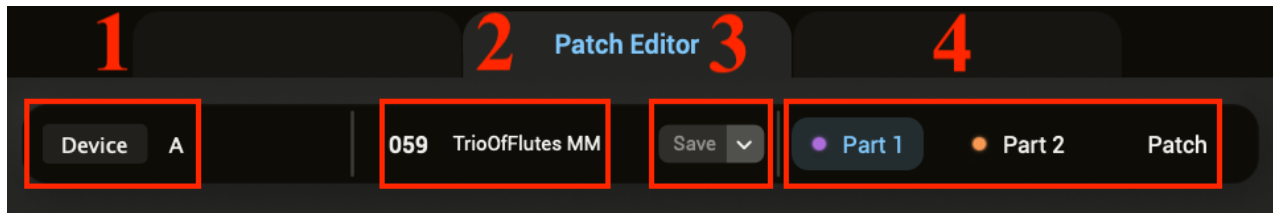
How to find to a User bank you have made

To select one of your patch banks in the computer, navigate to the User option in the drop-down menu.

There's a lot more you can do on the Patch Manager tab. For more details, such as how to create a new bank, or for an explanation of the cut/copy/paste/delete features, see the [Patch Manager](#) chapter.

Layout [Patch Editor]

Click the second tab from the left to select the Patch Editor.



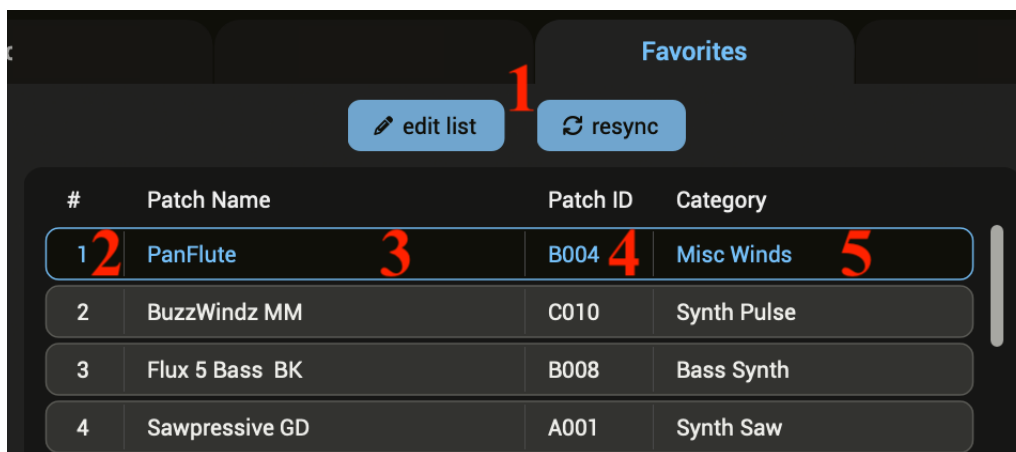
Patch Editor tab – four top functions

1. **Bank source and name** – This is for informational purposes only; it can't be changed here.
2. **Patch slot number and name** – Click the name to rename the patch and/or recategorize it.
3. **Save / Save As button** – Click to save your edits onto the original patch; use arrow to select a new location.
4. **Part 1 / Part 2 / Patch selectors** – Click one of these to select the component of the patch you want to edit.

We've barely scratched the surface on this topic. For the full details, head over to the [Patch Editor](#) chapter.

Layout [Favorites]

Click the Favorites tab to view and organize the list of your Favorite patches.



Favorites tab – five main sections

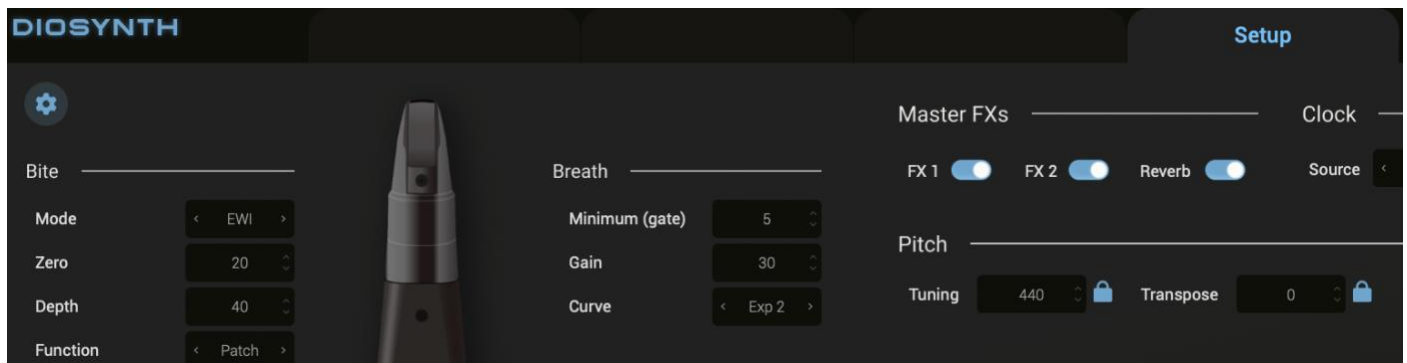
1. **Edit and Resync**
 - Click **Edit** to change the list in Diosynth Manager while the Diosynth is connected.
 - Use **Resync** to update the Favorites list in Diosynth Manager if changes were made inside the unit.
2. **Favorites number column** – This is the location of the patch within the Favorites bank.
3. **Patch Name column** – Shows the name of the Favorites patch.
4. **Bank / Patch Number column** – This is the source bank and patch slot that contains the Favorite patch. If that patch is changed or replaced, it will change in the Favorites list too.
5. **Category column** – Shows the category of the Favorites patch.

It's important to know that the Favorites list does not contain the patches themselves. What the Favorites list does is point to the contents of a specific patch bank and slot inside the unit. If the original patch is altered or replaced, it will also be altered or replaced in the Favorites list.

That said, there are several ways to add patches to the Favorites list. For details, see the [Favorites](#) chapter.

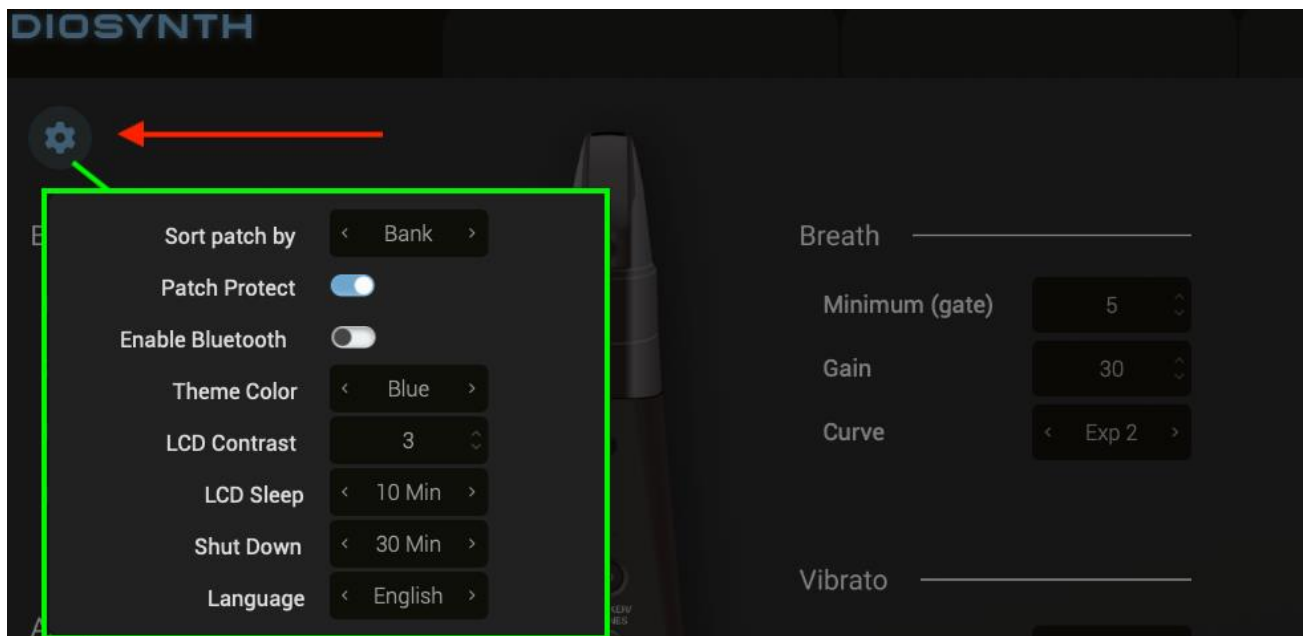
Layout [Setup]

Click the Setup tab to choose the settings that affect the entire Diosynth, such as what the Assign buttons and Press pads do. This is also where you can adjust the Master Tuning, change the MIDI settings, etc.



An example of the settings on the Setup page

Don't miss the gear icon in the left corner of the Setup window! It has settings that are mostly set-and-forget, like the language and time-out values. But it also provides a quick way to access the Bluetooth enable/disable switch.



Click the gear icon for additional Setup options

There are a lot of important parameters on the Setup page, like Audio settings, etc. When you want to know all about it, check out the [Setup](#) chapter.

Patch Manager

We covered the basic features of the Patch Manager earlier in the [Layout \[Patch Manager\]](#) section, so if you went straight to this chapter you may want to review it later. But the essential thing to know is this: To browse banks on the computer, select the computer with the **Computer/Diosynth Selector**, then navigate through the Packs/User locations to choose the bank you want to open.

Tiles view = List view (almost)

Tiles view and *List view* have very similar features, so both are covered on the next few pages. *List view* offers a few more features, though. To learn about those, see the [List View](#) section.

Hidden Patch functions

Diosynth Manager has some very useful features you might not see at first.

Send patch to unit

When you select a patch in a bank or merely hover over it, an icon appears in the corner of that cell:



"Send to unit" icon

This icon appears whether you are in Tiles or List view. When you click it (or double-click that row), the patch is sent to Diosynth and loaded into the Patch Editor section. Then you can click the Patch Editor tab to edit the patch.

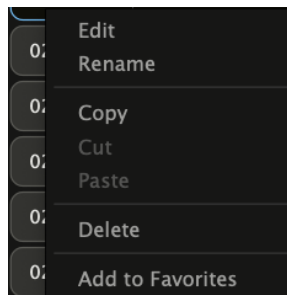
But if you want to start editing the patch right immediately, there's a way that's even faster.

Right-click patch menu

Right-click the patch name to reveal a context menu with more options.



Patch menu options: User banks



Patch menu options: Internal banks

The same options are available for patches inside the Diosynth and on the computer, except [Add to Favorites](#), which is only available for internal patches.

- *Edit*: This sends the patch to the unit and switches to the [Patch Editor](#) tab automatically.
- *Rename*: This highlights the patch name so you can type in a new one (up to 15 characters).
- *Copy, Cut, Paste*: These options can help you reorganize or assemble a bank of patches.
- *Delete*: Be careful: this does what it says. But if you make a mistake, there's an Undo feature!
- *Add to Favorites (internal banks only)*: This opens a window that lets you add the selected patch to your Favorites list. More about that in the [Favorites](#) chapter.

It is possible to select multiple patches and Copy, Cut, Paste, and/or Delete them. We'll describe those actions and the Swap/Insert features a bit later.

First a couple of caveats:

1. It isn't possible to cut or delete a patch from one of the Pack banks, nor paste a patch into it.
2. You can't rename or recategorize a patch in a Pack bank, but there's a workaround: if you right-click the patch, send it to the Patch Editor, and then save it somewhere else, you can make those changes at that point.

Keyboard Shortcuts

Standard computer keyboard shortcuts are available when working with patches in a bank.

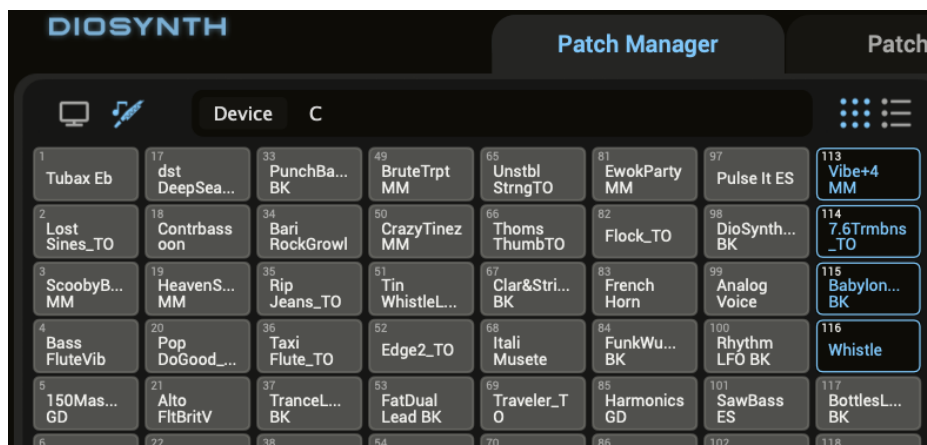
PC	Mac	Function
Ctrl + A	Cmd + A	Select all
Ctrl + X	Cmd + X	Cut
Ctrl + C	Cmd + C	Copy
Ctrl + V	Cmd + V	Paste
Delete	Delete	Delete
Shift	Shift	Hold Shift while clicking another patch to select all patches between the first clicked and last selection.
Control	Command	Hold Ctrl/Cmd + click to select non-adjacent patches.

Multi-patch operations

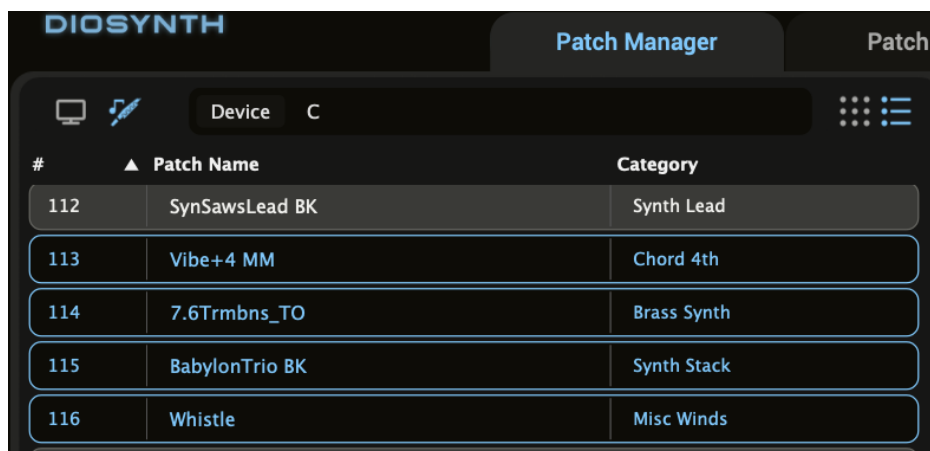
It's possible to select more than one patch and copy/paste them, or to drag/drop them onto a new location or bank. The patches don't have to be all together when you select them, but they will end up all together in the new location.

IMPORTANT: As you learn the following procedures, please remember this: The changes are written **immediately** to the target patch bank when transferring patches between browser windows. This is true whether the bank is inside the computer or inside Diosynth. Be sure you know which patches will be replaced before you paste or drop patches onto the target bank.

To select a group of patches, click on the first patch name, hold SHIFT, and click the last patch name in the group.



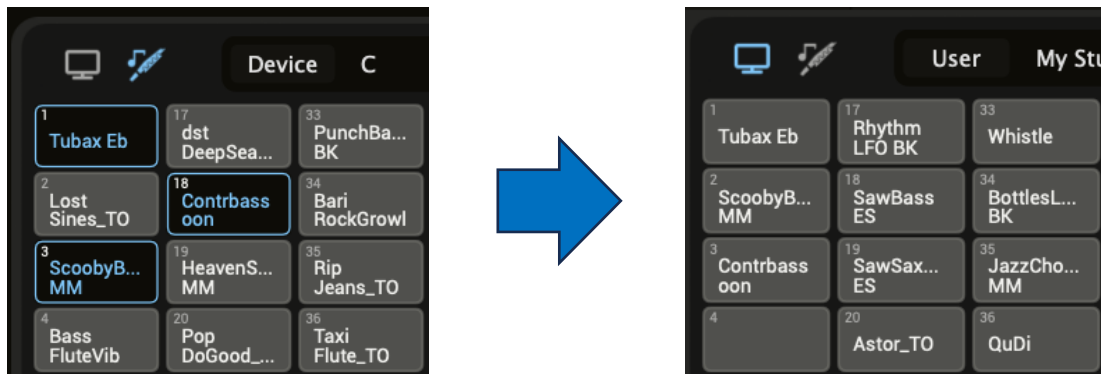
Select patches – Tiles view



Select patches – List view

To select non-adjacent patches, hold Ctrl/Cmd and click the desired patches.

Warning: The selected patches will be pasted next to each other into the destination bank. This will overwrite any patches currently in those locations.



Non-adjacent patches, when copied...

...will be pasted next to each other.

This can be useful when creating a genre-specific bank, for example: Select the desired patches from a bank, drag them into an empty bank, then open a different source bank and repeat, etc.

Cut, Copy, and Delete: an important distinction

The difference between **Cut**, **Copy**, and **Delete** is what happens when you use the Paste function. **Cut** and **Copy** hold the patch(es) in a temporary buffer so you can paste them somewhere else. The **Delete** function does not hold the patch(es) in a temporary buffer. Patches cannot be pasted after they have been deleted.

To cut patch(es), select the patch(es) to cut, then press **Cut**.

Note: Only patches within a User bank on the computer can be cut; patches in the Packs folders cannot. Also, patches inside the Diosynth cannot be cut.

To copy patch(es), select the patch(es) to copy, then press **Copy**.

To paste patch(es), click on the patch name of the slot you would like to paste on (or the first slot of the slots you would like to paste the group of patches to), then press **Paste**.

Warning: The selected patches will be pasted next to each other into the destination bank. This will overwrite any patches currently in those locations.

To delete patch(es), select the patch(es) to delete, then press **Delete**. The slot(s) will turn empty.

Note: Only patches within a User bank on the computer can be deleted; patches in the Packs folders cannot. Patches inside the Diosynth also can be deleted; when this action is taken, they are replaced with an initialized patch.

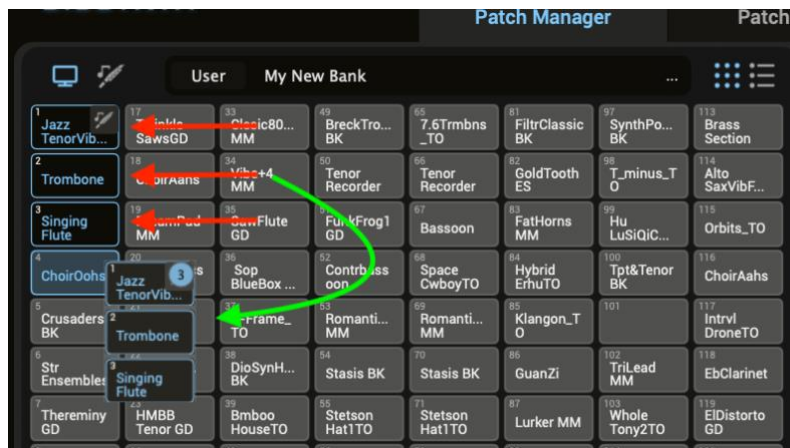
Swap and Insert

To swap patch(es) in same browser, select the patch(es) to swap, then drag them to the first slot where you want the swap to happen. This is great for changing the patch order within a bank.

For example, to swap patches #1-3 with #4-6, select patches #1-3, then drag and drop at slot #4.

(If the number of destination slots are insufficient to allow the swap to happen, such as dropping a large selection at slot #127, then the swap is invalid; the swap result cannot exceed slot #128.)

IMPORTANT! Be careful! Dragging patch(es) to the other browser window will not swap patches between the browsers; **it will replace them** instead.



Swap patches: Tiles view

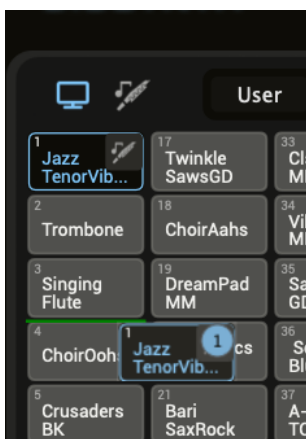


Swap patches: List view

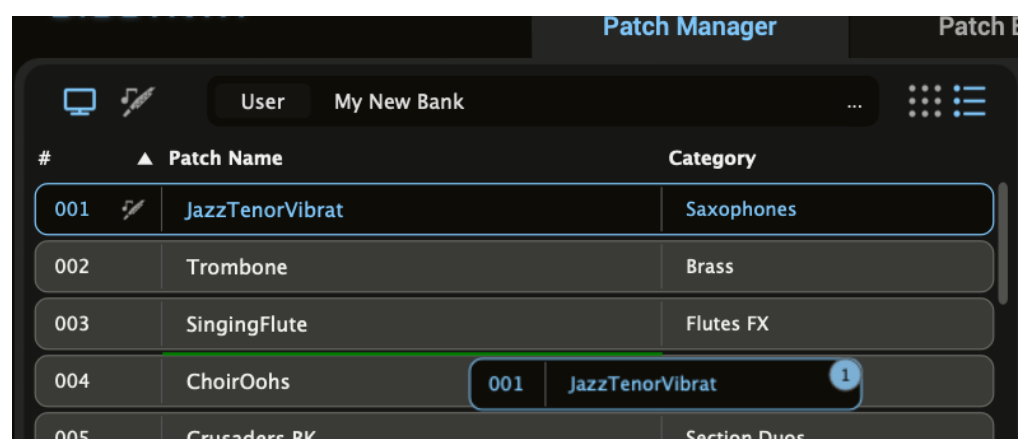
To insert patch(es) in same browser, select the patch(es) to insert, then drag to the top edge of the slot where you want to insert the selected patches. Watch for the green line to appear, then release the cursor. This allows you to rearrange the order of the patches: It pushes all patches prior to the insertion point backward to fill the space vacated by the patches that are being relocated.

For example, to insert patches #1-10 so they appear in the order ahead of #21, select patches #1-10, then drag them to the top edge of slot #21. Again, watch for the green line to appear, then release the cursor.

Note: Insert only works in the same browser window.



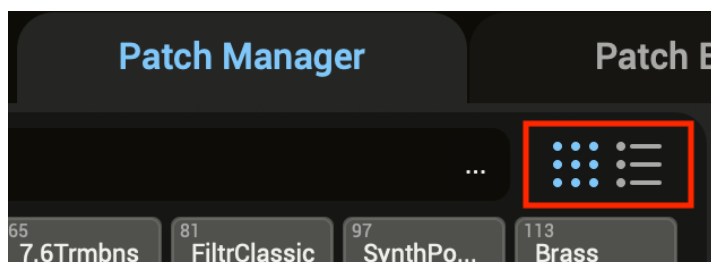
Insert patches: Tiles view



Insert patches: List view

List View

When the Computer/Diosynth selector is set to Computer, you can use the *Tiles/List* view switch to select one of two ways to view the selected bank.



The Tiles/List view switch

The Tiles/List view switch is framed in red in the graphic. Click either button to toggle between the two views.

List view vs. Tiles view

List view offers a few more features than *Tiles* view: It has several Sort options (explained below) and the ability to add a patch to the Favorites list without having to right-click the patch name (see [Add to Favorites: The heart icon](#)).

Sort options

List view can be sorted differently by clicking the title of each column. Click again to reverse the order (e.g., A to Z becomes Z to A, etc.). A triangular arrow in the title cell indicates whether the sort order is ascending or descending.

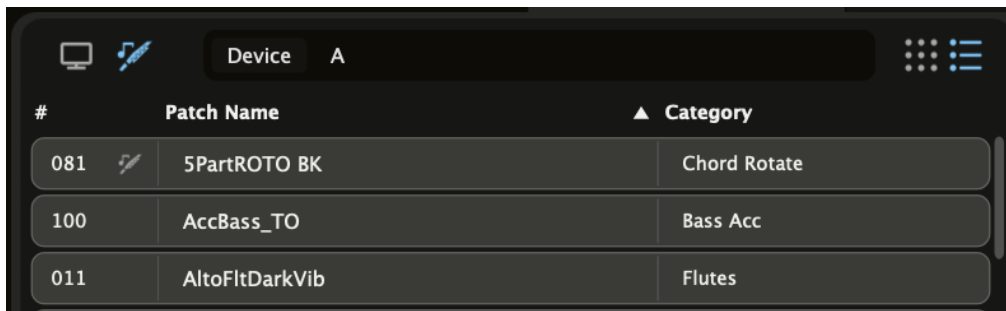
#	▲ Patch Name	Category
001	Sawpressive GD	Synth Saw
002	PureSquares MM	Synth Squ
003	SineAhead BK	Synth Sine

Sort by number (ascending)

#	▼ Patch Name	Category
128	TotalSquare GD	Synth Squ
127	SynSineSaw BK	Synth Lead
126	SopranoSaxVelo	Saxophones

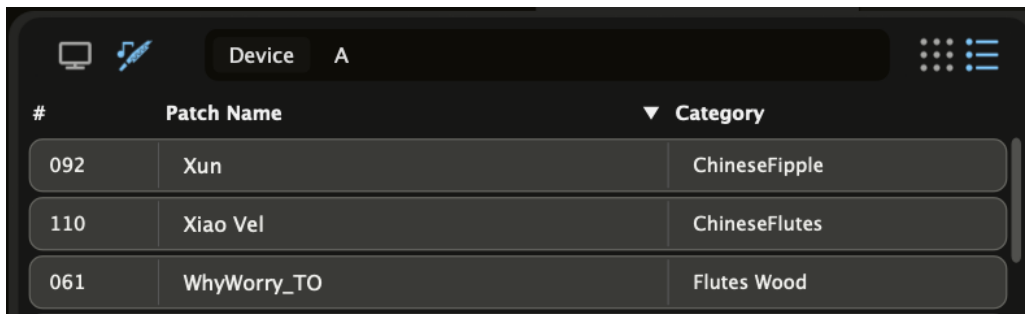
Sort by number (descending)

Note: It isn't possible to drag or paste a patch into a list unless it has been sorted by number (ascending). If you try to do this with another sort option selected you'll see an error message ("Paste is only available when sorted by index").



#	Patch Name	Category
081	5PartROTO BK	Chord Rotate
100	AccBass_TO	Bass Acc
011	AltoFltDarkVib	Flutes

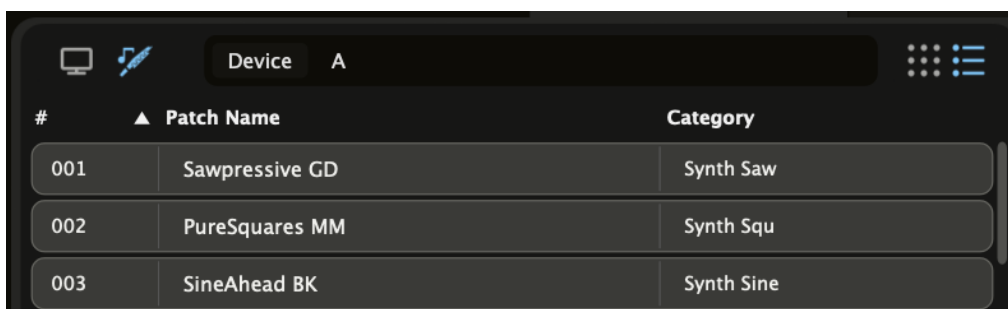
Sort by name (A-Z)



#	Patch Name	Category
092	Xun	ChineseFipple
110	Xiao Vel	ChineseFlutes
061	WhyWorry_TO	Flutes Wood

Sort by name (Z-A)

Remember: You can't drag or paste a patch into a list unless it has been sorted by number (ascending). If you try to do this with another type of sort option you'll see an error message ("Paste is only available when sorted by index").



#	Patch Name	Category
001	Sawpressive GD	Synth Saw
002	PureSquares MM	Synth Squ
003	SineAhead BK	Synth Sine

Sort by category (A-Z)



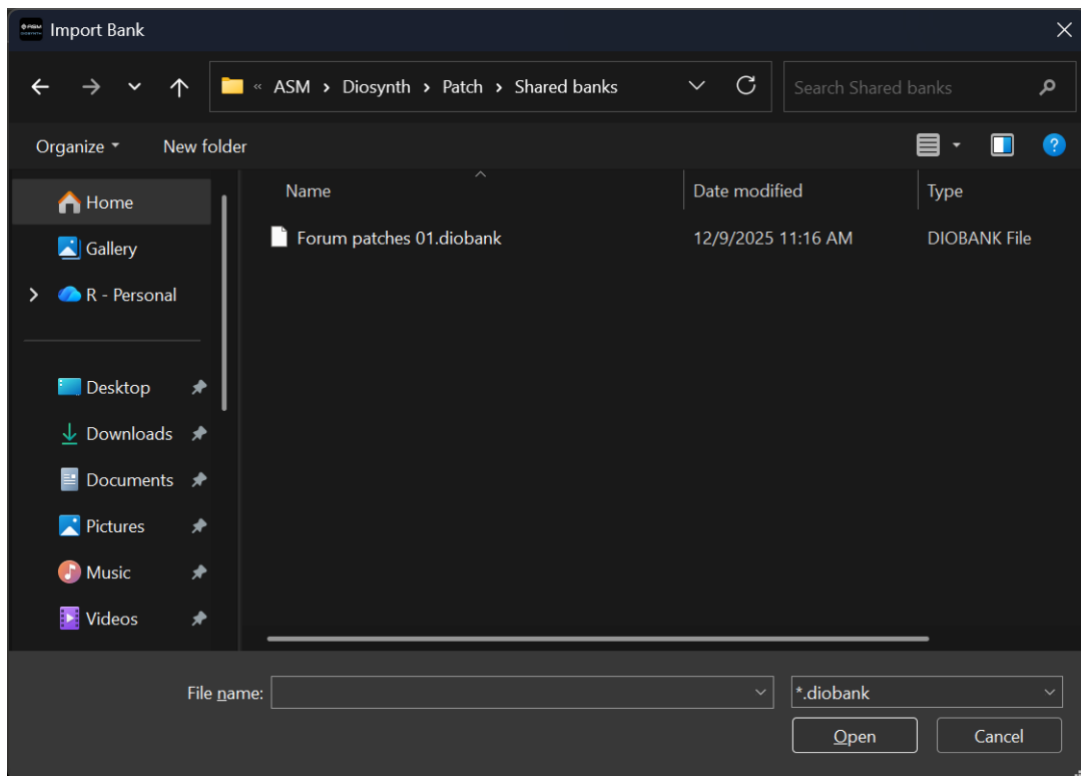
#	Patch Name	Category
128	TotalSquare GD	Synth Squ
127	SynSineSaw BK	Synth Lead
126	SopranoSaxVelo	Saxophones

Sort by category (Z-A)

Note: Diosynth Manager won't let you move patch(es) into another list unless they are sorted by number (ascending). If another sort option is used you'll see the message ("Paste is only available when sorted by index").

Import a bank

To import a new bank into the **User** folder, select **Import Bank** from your [computer's File menu](#), browse to the location of the bank you would like to import, select the bank, and press **Open**.



Navigate to the location of the patch bank you want to import.

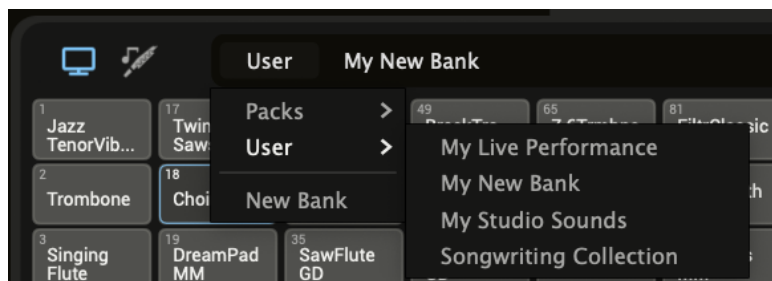
Make a new bank

If you want to create a new, empty patch bank, select the “New Bank” option from the computer’s [File menu](#). You’ll be asked to create a name for the bank. Click “OK” to confirm the name, and the new bank will be created. It will become available immediately in the User folder.

After that you can copy/paste patches into it, or drag/drop patches into it, etc. It’s all very quick and intuitive.

To find the bank after creating it:

- Select the Computer icon in one of the browser windows.
- Click the Packs/User icon in the bank name field and select User.
- Locate the new bank inside the User menu and select it.



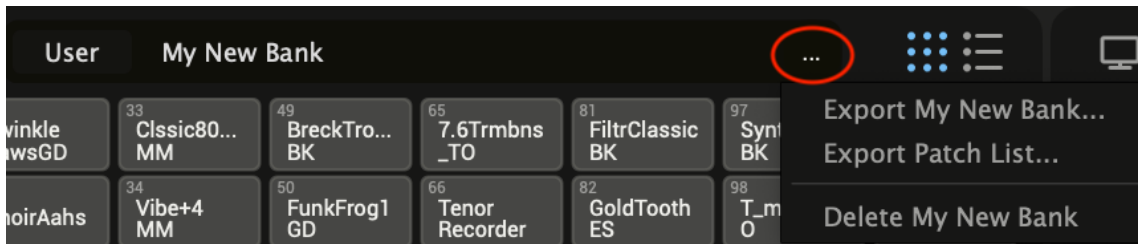
Navigate to your new bank in the User folder menu

Note: A new bank contains 128 initialized patches. These are “blank slates” you can use to build your own patches from the ground up, or you can replace one or more of them with patches from other banks.

Export or Delete

Export a Bank

The banks you've created are all in one place: ...\\Documents\\ASM\\Diosynth\\Patch\\User. But if you want to export a bank to a different storage device (perhaps a portable USB drive you can take to a session), select the desired User bank and then click the three dots on the right side of the bank navigation field.



Location of the User bank Export/Delete options

From the drop-down menu that appears, select Export (the selected bank). Then navigate to the folder to which you want to export the selected bank.

Export a Patch List

This option lets you export the patch names from the current User bank into a spreadsheet (.xlsx format). You can use this to create a master list of your patches, for example.

Delete a Bank

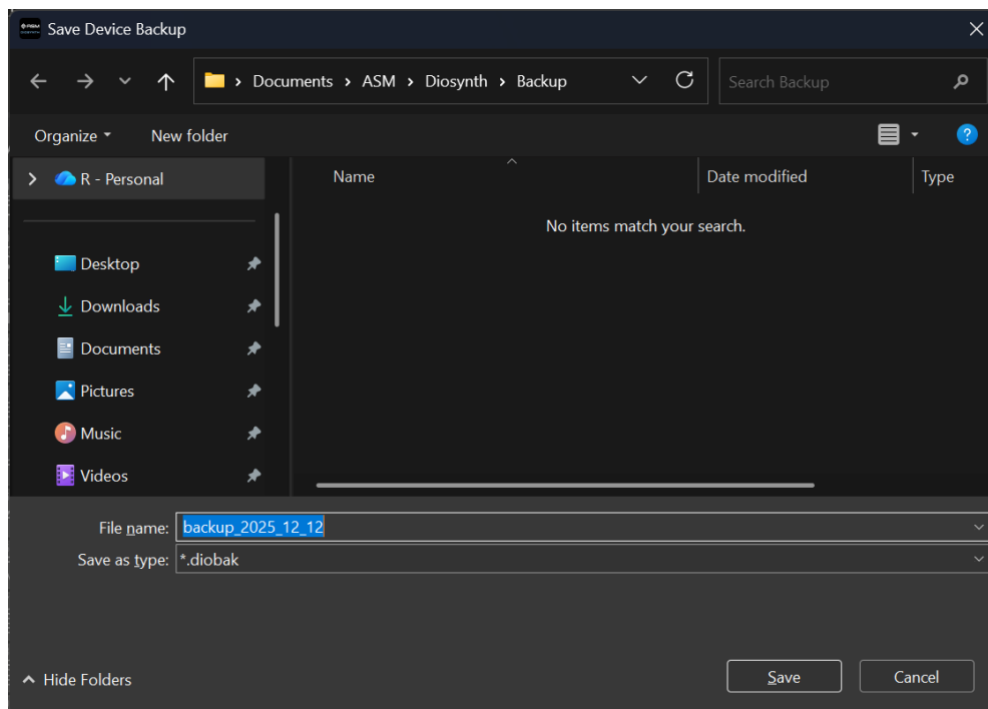
Be careful with this option!

To delete the selected bank, select the Delete option from the same drop-down menu. It disappears immediately, along with all the patches it contains. But if you make a mistake, Diosynth Manager maintains an extensive 30-level Undo/Redo history (until you quit the application).

Backup all banks

To back up the entire memory of a Diosynth, press **Backup Unit**, enter the backup name, and press **Save**.

Note: This takes several minutes to do. It's best not to let your computer go to sleep during this process.

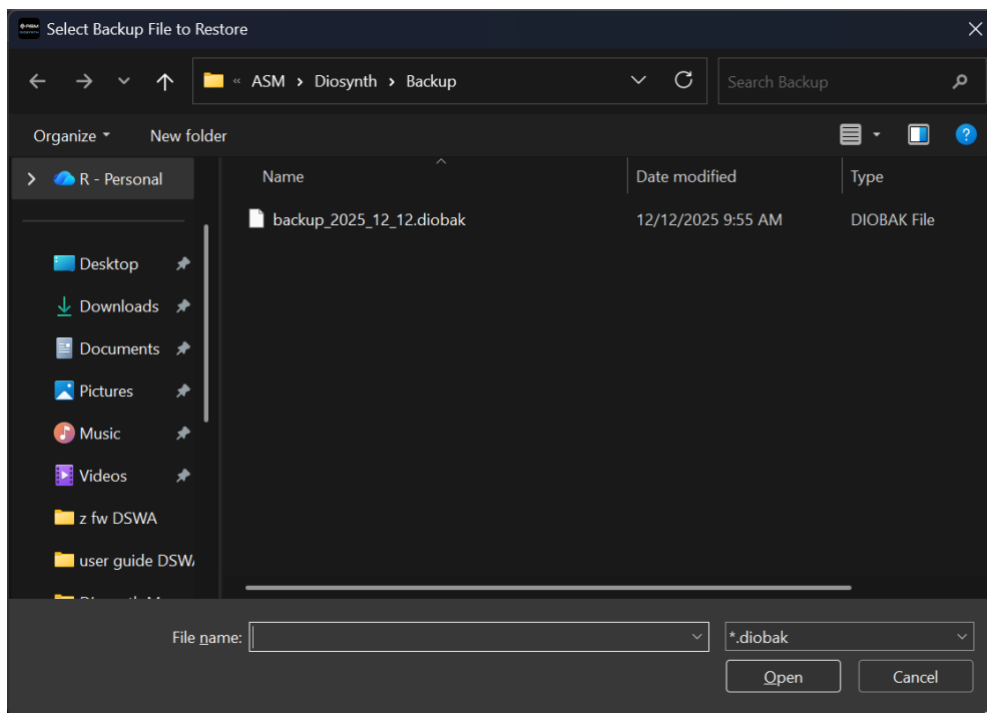


Select Backup from the computer's Device menu, navigate to the target location, then click Save.

Restore all banks

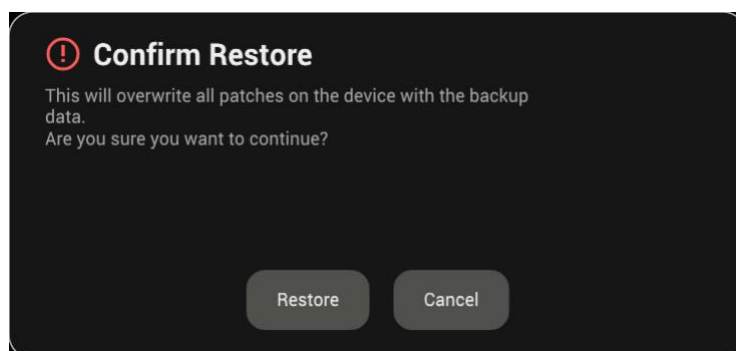
To restore the entire memory of a Diosynth, press **Restore Unit**, select the backup file, and press **Open**.

Warning: This will replace ALL BANKS inside the Diosynth.



Select **Restore** from the computer's **Device** menu, navigate to the **Backup** file, then click **Open**.

Since this will overwrite every patch in the Diosynth, you will be asked to confirm the decision first.

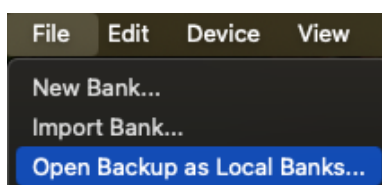


Note: This takes several minutes to do. It's best not to let your computer go to sleep during this process.

Open Backup as Local Banks

It's a good habit to back up your Diosynth patches regularly so you can restore the entire unit before an important performance, etc. This replaces all patches in Banks A–F, so always be sure you've backed up the current patches before using the Restore function.

But if you're looking for a specific patch that isn't in the unit but used to be, you don't have to replace the memory of the unit to look for it. The Open Backup as Local Banks feature will extract Banks A–F from a backup file and split them into separate User banks. Then you can use the Patch Manager tab to navigate to those banks and look through each one until you find the patch you want.

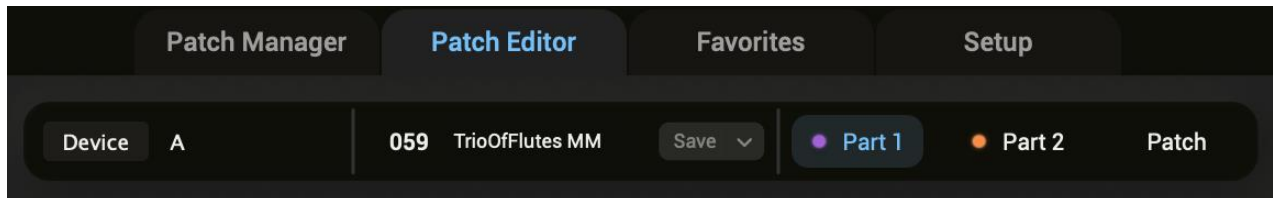


Patch Editor

There's a lot you can do on the Diosynth itself. But when you want to dig in and see what makes a patch great, or if you want to edit an existing patch until the chemistry between you and Diosynth is perfect, or if you want to build your own patch from the ground up, the Patch Editor is the place to be.

There are two ways to open the Patch Editor:

1. Right-click a patch in the Patch Manager and select the Edit option. This also sends the patch to Diosynth so you can hear the patch as it is being edited.
2. Click the Patch Editor tab at the top of the Diosynth Manager window. The patch that was selected most recently in the Patch Manager or on the Diosynth will be there, ready to be edited.



From left to right, you'll see the location of the patch being edited (User/Packs/Device), then the Bank name or letter, followed by the Patch number and name. Next to that is the Save button, which is used to [Save the edited patch](#). The last section has three Page buttons: [Part 1](#), [Part 2](#), and [Patch](#). These are the three components of every patch.

[Part 1 and Part 2](#) are the two sound layers that exist in each Diosynth patch. The parameters inside each Part are identical, but their settings can be drastically different depending on what you want to do.

The [Patch button](#) holds parameters that affect both Parts: Relative Level and Pan settings; Transposition and Scale; Glide; Key Range; Joystick, Pad, and Assign button settings; the Master FX, and more.

Things to know

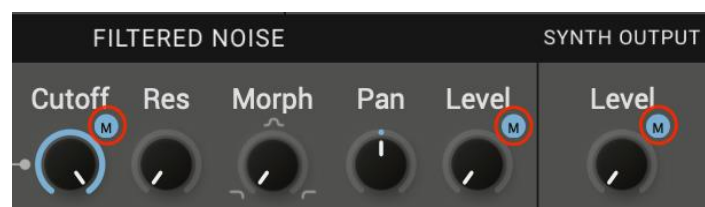
- Double-click a parameter control or value field to reset it to its default value.
- Click-drag a control to edit its value. The value appears near the control and in the lower tool bar.
- When the value is shown in a blue field, you can right-click the field and enter a number with your computer keyboard.
- Click a menu to make a selection. It will stay open until you do, or until you click outside the menu.

Parts 1 and 2

Each Part has 2 synthesizer oscillators and a sample engine, plus its own settings for Filter, Growl, Attack and Key Off noises, FX, Envelopes, LFOs, Modulation Matrix, and more. Related parameters are organized into sections; for example, the Synthesis section has the Oscillator settings, the Sample Engine section has the multi-sampled instrument settings, etc. Everything you need to make a great patch is found in these clearly defined sections.

We'll take a tour of every parameter. But first, let's go over some features that are only available for Parts 1 and 2.

Mod buttons



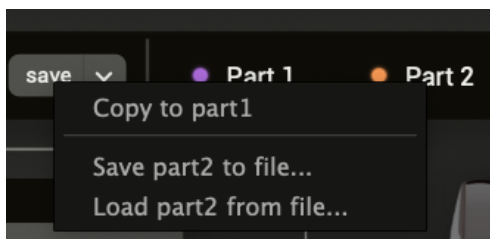
Some of the Mod buttons in the Patch Editor

Notice the small blue "M" buttons located throughout the Patch Editor for Parts 1 and 2. These are the Mod buttons. They hold one or more modulation sources that are routed directly to the associated parameter, which avoids the need to set up that route in the Mod Matrix. Each source has an independent level setting, so they can modulate the target parameter by different amounts, sometimes in different directions.

Some Mod buttons hold 1 or 2 sources (e.g., WaveScan and Semi in the Oscillator section); some hold up to 4 (e.g., Cutoff in the Noise Filter section). Each hardwired mod was chosen to make it as easy as possible to tailor each patch precisely to your needs.

Hidden features: Copy, Save, Load Part

Right-click one of the Part buttons to open a list of options.



Right-click a Part button for more features

Copy Part X to Part Y

If you want Parts 1 and 2 to share some settings and be different in other ways, you can copy the settings from Part 1 to Part 2 (or vice versa) and then offset them. For example: Right-click Part 1 and select “Copy to Part 2”. Then make changes on each Part to differentiate them.

Save/Load Part X as a file

If you like the way Part 2 turned out so much that you’d like to add it to another patch, this feature lets you do that. For example:

1. Right-click Part 2 and select “Save Part 2 to file”. If this is the first time you’ve done this, Diosynth Manager will add a folder called “Parts” inside the Patch folder as the default location.
2. Name the Part and save it. It is given the extension “.diopart”, without a Part number...you’ll see why.
3. Select the patch to which you want to add the saved Part.
4. You can add the saved Part to Part 1 or Part 2; right-click the desired part and select “Load Part X from file”. You’ll see a message that asks you to confirm this decision, because it will overwrite the current Part.

Synthesis



This is where you choose the synthesizer waveforms for the Oscillators, set their pitches, and add filtered noise as desired.

This is also home to the WaveScan feature, which lets you morph between different waveforms and find exactly the timbral quality you want. The WaveScan setting can be modulated, which injects an astounding amount of life into a patch.

As you can imagine, there is quite a bit of sound design power here. We’ll list the parameters first and describe them in detail later.

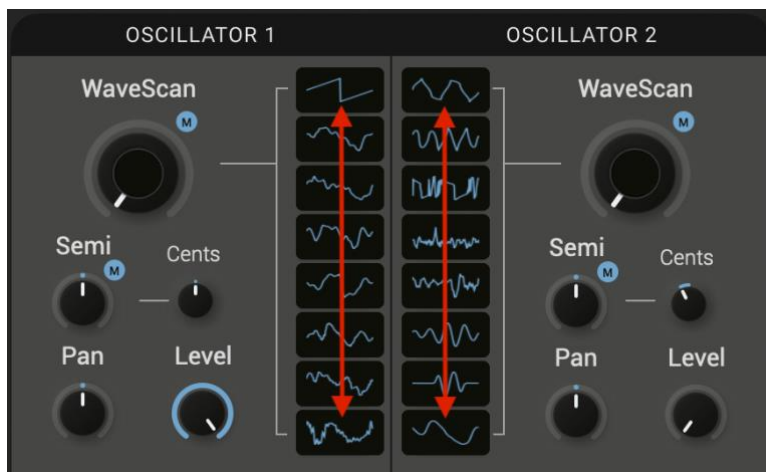
Oscillators 1 and 2

These parameters are the foundation of the sound produced by the Synthesis section.

Parameter	Mod?	Range	Description
WaveScan setting	Yes	1.0 to 8.0 in steps of 0.1	Select the starting position of the WaveScan. An intermediate value morphs between two adjacent waveforms.
Waveform selection	–	(see list of Diosynth waveforms)	Click one of the buttons to select an option for that waveform slot.
Semi	Yes	+/- 36 semitones	Coarse tuning of oscillator pitch.
Cents	–	+/- 50 cents	Fine tuning of oscillator pitch
Pan	–	+/- 32	Adjust the stereo position of the oscillator.
Level	–	0 – 64	Set the volume of the oscillator.

WaveScan setting

Diosynth lets you select up to eight waveforms for each oscillator in the center Wavelist.



8 different waveforms in the Wavelist for each oscillator

The WaveScan parameter will morph gradually between the positions in the Wavelist, using Breath control, an LFO, or some other source through the Mod Matrix. There are also two hardwired mod routes available via the Mod button.

The eight waveform slots correspond to the x.0 positions of the WaveScan knob: Wave 1 = position 1.0, Wave 2 = position 2.0, etc. A WaveScan value of 1.5, for example, is derived by morphing halfway between Wave 1 and Wave 2.

WaveScan Mod button

Click the "M" for hardwired routes that can modulate the WaveScan setting.

WaveScan Mod parameters	Range	Description
Breath	+/-128	Enables breath force to modulate WaveScan.
Breath Thresh.	+/-128	Controls how much the Breath Threshold mod source affects WaveScan.

Breath lets you use breath force to bring in more noise on louder notes, rather than having the noise be a constant presence. You can also reduce the noise level as you blow harder by setting this to a negative value.

Breath Thresh. is a separate mod source related to breath force. Its modulation range is affected by the **Breath Threshold Setting** parameter on the Patch tab.

See [Breath, Breath Threshold, and Breath Threshold Scale](#) for an overview of how those modulation sources interact.

Tip: You can modulate the WaveScan setting automatically using an LFO or an Envelope as a modulation source, or you can do it manually with one of the Press Pads. These can be set up in the [Mod Matrix](#).

Waveform selection

The buttons let you pick a waveform for each of the 8 waveform slots. Options include OFF, Silence, and any one of the 219 waveforms. Note: Wave 1 can't be set to OFF or Silence.

- 🎵 When a Wave is set to OFF, any Wave after it is treated as if it were in an earlier position. For example, if Wave 7 = OFF but Wave 8 = Pulse4, Diosynth handles Pulse4 as if it were Wave 7.

Tuning

Semi

This tunes the oscillator in semitones, or chromatic steps.

Semitone Mod button

Click the [M] button for a hardwired mod route between the Semi parameter and Breath. The range is +/-128.

Semitone Mod parameter	Range	Description
Breath	+/-128	Enables breath force to raise or lower oscillator pitch.

Cents

This is a fine-tuning parameter, like adjusting the tuning peg on stringed instrument or repositioning a mouthpiece to make the instrument slightly more sharp or flat.

Note that this tunes the selected oscillator, not the instrument. If you're looking for a global adjustment so you can adjust the tuning of the entire Diosynth, that's on the Setup page in the [Pitch Setup](#) section.

Pan

Each oscillator can be moved left or right in the stereo field. It can stay there, or its position can be modulated by an LFO or some other source via the Mod Matrix.

Oscillator Level

This lets you adjust the output volume of the selected oscillator.

WaveScan example

Here's an experiment to help understand what WaveScan is, and how to use it.



This is how Oscillator 1 should look after step 5.

1. Select the patch A003 SineAhead BK on the unit.
2. Select the Patch Editor tab in Diosynth Manager and select Part 1.
Note that Sine is in position 1.
3. Assign Triangle, Trisaw, Saw, and Square to positions 2-5.
4. Play a note, turn the WaveScan knob, and listen to how the sound changes.
It is morphing between those 5 waveforms.
5. Now assign something crazy like Klangor1 to position 6 and do the same thing.
Notice the big change in the sound at the end of the knob turn!
6. Set WaveScan back to 1.0.
7. Click the [M] button and set Breath to ~82.
8. Play a note while varying the breath pressure.
You should hear the same transformation of the sound that you did in step 5.

You can also make this happen on its own. For example, try routing an LFO to Osc 1 WaveScan in the [Mod Matrix](#).

Filtered Noise

The Filtered Noise section gives you control over the harmonic content of the noise generator.



The Filtered Noise and Synth Output sections

Parameter	Mod?	Range	Description
Breath -> Cutoff	–	+/- 128	Breath control of Cutoff frequency
Breath thresh. -> Cutoff	–	+/- 128	Breath threshold control of Cutoff frequency
Cutoff	Yes	0–256	Filter frequency
Res	–	0–256	Resonance
Morph	–	0–256	High Pass > Band Pass > Low Pass
Pan	–	+/- 32	Stereo position of Noise Filter
Level	Yes	0–64	Output level of Noise Filter

See [Breath, Breath Threshold, and Breath Threshold Scale](#) for an overview of how those modulation sources interact.

You can use this portion of the Synthesis module to mix a bit of noise with the output of the oscillators. There are 8 hardwired mod routes to help you mix in exactly how much noise you want, when you want it.

There are many ways to use the Noise Filter:

- The Breath control parameters add a realistic amount of noise that increases and decreases with the amount of air pressure, exactly the way a real instrument would.
- With an envelope this can add emphasis to the attack sound of an instrument and then disappear.
- The hardwired connection for LFO1 can introduce a noise sound that sweeps continually as you play
- You could turn down the oscillators altogether and use Diosynth to imitate the sound of wind blowing!

Filtered Noise Cutoff

This parameter adjusts the frequency at which the Noise filter starts doing its work. Its function is to let some frequencies be heard and not let other frequencies be heard.

These frequency ranges are determined by the Morph setting, which shifts the filter between its High Pass, Band Pass, and Low Pass states. As you might imagine, the High Pass setting lets high frequencies pass, and the Low Pass setting lets low frequencies pass. Band Pass is a combination of the two, allowing Low and High frequencies to pass while scooping out a band of frequencies in the middle.

There are six modulation routes hardwired to the cutoff frequency. Two have dedicated controls (Breath and Breath Thresh.); the other four are available by clicking the [M] button.

Parameter	Mod?	Range	Description
Breath -> Cutoff	–	+/- 128	Breath control of Cutoff frequency
Breath thresh. -> Cutoff	–	+/- 128	Breath threshold control of Cutoff frequency

Filtered Noise Mod button

These parameters are linked directly to the Filter Noise cutoff parameter.

Noise Filter Cutoff Mod parameters	Range	Description
Keytrack	+/- 200	The increase/decrease of cutoff frequency based on note number
LFO 1 Amount	+/- 128	The LFO modulation amount/direction of cutoff frequency
Env 1 Amount	+/- 128	The impact of Env 1 on cutoff frequency, positive or negative
Velocity	+/- 128	The velocity control of cutoff frequency, positive or negative

Res

“Res” is an abbreviation for Resonance, which is also known as Emphasis or Q.

This setting adjusts the resonance of the filter, which means you can emphasize the corner frequency at which the filter begins to reduce the high frequency content (Low Pass) or allows it to increase (High Pass).

Morph

This parameter adjusts the filter between its various states, with a High Pass filter at one extreme, a Low Pass filter at the other, and a Band Pass filter at the middle setting. Along the way there are hundreds of intermediate settings.

Pan

Use this parameter to set the stereo position of the Noise generator.

Level

This controls the output level of the Noise Filter. It has two hardwired modulation routes that help you optimize the contribution the noise makes to the sound.

Filtered Noise Level Mod button

Noise Filter Level Mod parameters	Range	Description
Breath	+/-128	Breath control of Noise Filter Level
Breath Thresh.	+/-128	Breath Threshold control of Noise Filter Level

Note: These mod sources only affect how *loud* the noise is; they don't affect its harmonic content. If that's what you want, use the Breath and Breath Thresh. controls on the left side of the Cutoff control.

See [Breath, Breath Threshold, and Breath Threshold Scale](#) for an overview of how those modulation sources interact.

Synth Output

This Level control adjusts the combined level of the Oscillators (1 and 2) and the Noise Filter.

Synth Output Level Mod parameter	Range	Description
LFO 2 amount	+/-32	Amount/polarity of LFO 2 control of Synth Output parameter

LFO 2 amount provides a hardwired link to LFO 2. You can use this to modulate the Synth Output Level automatically. One way to use this is to make the synth sound's level rise and fall while the Sample Engine sound remains constant.

Sample Engine



The Sample Engine parameters

This section provides instruments for which we recorded a human playing every note on an acoustic instrument, at many different volume levels and articulations. Some had reeds, some had mouthpieces, some had keys, and others had strings. There were also some with vocal cords!

Selection

Click the menu to see the list of available instruments. They are organized into groups (Saxophones, Double Reeds, Strings, etc.) so you can find what you want quickly.

For a list of each of the instruments in the Sample Engine, see [this page](#).

Tuning

This sets the chromatic transposition for the selected instrument. The range is +/- 24 semitones, for a total of 4 octaves.

Sample Engine Level

Drag the control to set the combined level of the Sample Engine and Acoustics sections. Ultimately it helps you balance those sampled instruments with the output of the Synthesis section (yes, you can use them all at once!). The range is 0-64.

Legato

This can increase the realism of certain sampled instruments. For example, when you play the first note on a trumpet the initial attack has some "spit". Each staccato note you play has a similar attack. But if you sustain a note and press the valves to change the pitch a few times, the attack of each note is more subdued. You just played a legato passage.

It's the same with many other instruments (woodwinds, violins, etc.). If you don't want the full attack of the breath or bow on every note, enable the Legato parameter. You will still get the full attack if you articulate each note independently, but you'll get a legato response when you change the fingering.

This might not always be what you want with other sampled instruments, such as the Accordion. They sound more natural with Legato set to Off, so you hear the full attack of each note when a key is pressed.

Envelopes

Another thing the Legato parameter does is activate the Pitch and Amplitude envelope controls on the right side of the Sample Engine section. If you want to hear instant changes to pitch and amplitude, keep Legato = Off. But if you want the pitch to scoop upward with every note, or if you want the volume of one note to linger when a new note is played, set Legato to On.

Name	Pitch	Amplitude	Range	Description
Attack	✓	✓	0–127	The rate at which the envelope rises to its target level.
Hold	✓	✓	0–127	Offsets attack. Lower numbers = less distance to target level.
Depth	✓	–	0–12	The distance the pitch envelope will travel, in semitones.
Release	–	✓	+63/-64	How long the previous note lingers after the next note begins.

Pitch envelope

This provides a simple envelope to control the rate and depth of the slide between each legato note. If you want instant pitch transitions, set the Depth to zero. An Attack of zero is extremely quick, so that's another way to handle it.

This effect is only triggered by playing a legato note. Distinct notes come in at their center pitch.

Amplitude envelope

This provides a simple envelope to control the rate of the volume swell of the Sample Engine instrument between

each legato note, and the rate at which a note dissipates. If you want instant full volume with each note, set the Attack to zero. If you want the note to cut off immediately after it is played, set the Release to zero.

A short release can emulate the resonance of the body of a cello, for example, where the note resonates in the body for a short time after it is played.

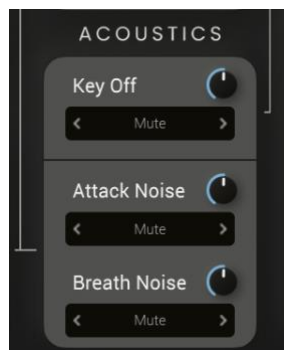
This effect is only triggered by playing a legato note. Distinct notes obey the other envelope settings.

Acoustics

This section lets you mix in other real-world sounds to the sampled instrument you've selected, for additional realism. There are three categories of samples: Attack Noise, Breath Noise, and Key Off sounds. Each one has an independent level control so you can dial in exactly as much as you want of each one.

You can mix and match if you like! For example, you could add a Flute attack to a Trumpet, or use an Oboe attack with a Violin, etc.

It's also possible to combine the Acoustics samples with the output of the Synthesis section, with or without the multi-sampled instruments from the Sample Engine. The potential number of combinations is staggering.



Acoustics section signal flow

We've added a dotted line in this graphic to indicate that the Acoustics section has two subsections: Key Off is in the top half, Attack Noise and Breath Noise are in the lower half. Their outputs are routed in different directions:

- Key Off is fed directly into the EQ, not through the Filter.
- Attack Noise and Breath Noise pass through the Filter and then into the EQ.
- Key Off is not affected by the Level control in the Sample Engine section.
- Attack Noise and Breath Noise are governed by the Level control in the Sample Engine section.

For a list of the samples in the Acoustics section, see [this page](#).

To view the entire signal flow, see the [Voice Path diagram](#). You'll notice the Key Off samples listed above the Amp, where they are connected between the Amp and the Part Level diagrams.



Key Off

This lets you add mechanical noise to the end of each note you play. The options are Brass Key Off, Sax Key Off, and Mute (no key off sound). Use the Level control to add as much or as little as you want. Note that its level control is independent of the [Sample Engine level](#) control.

Attack Noise

The attack sounds of 14 different instruments are available here: Soprano Sax, Flute, Oboe, and a Bottle, to name a few! Use this to add an Ocarina attack to an Italian Musette, for example, or add more realism to the English Horn instrument by adding more English Horn attack. Use the Level control to add just the right amount.

Breath Noise

This lets you add the sound of air moving through the selected instrument. You can combine Flute Noise with one of the Flute instruments for added realism, for example, or mix and match noises and sampled instruments if you like. You can also add any one of these noises to a synthesizer patch to make something entirely new!

Growl

When playing a wind or brass instrument, a performer can make the sound "growl" by humming certain frequencies that cause inharmonic vibrations. Diosynth emulates this growl through a technique known as Ring Modulation.

Ring Modulation takes two audio signals and generates a sound based on



the sum and the difference of their frequency content. Diosynth achieves this by using a third oscillator to modulate the Synthesis oscillators and the Sample Engine. You can tune this effect within a 6-octave range.

The growl in some of the patches uses a certain tuning interval within an octave of the fundamental pitch. But you can use this to make other kinds of sounds! Depending on the tuning of the sources, the result can be bell-like and pure, or it can be wiry, robotic, trashy, and/or pleasingly unnatural. For example, try routing an Envelope or some other source to Growl Pitch in the Mod Matrix. Isao Tomita used this to great effect.

Parameter	Mod?	Range	Description
Semi	–	+/- 36 semitones	Coarse tuning of growl oscillator
Cents	–	+/- 50 cents	Fine tuning of growl oscillator
Level	Yes	0 – 64	Sets initial level of growl oscillator.

Growl Level Mod parameters	Range	Description
Breath	+/-128	Breath control of Growl Level
Breath Thresh.	+/-128	Controls how much the Breath Threshold mod source affects Growl Level

See [Breath, Breath Threshold, and Breath Threshold Scale](#) for an overview of how those modulation sources interact.

Filter

This is actually a collection of filter types. Each has its own character, and some may be similar to analog filters you have encountered. But we didn't want Diosynth to sound like any other instrument, so we took some of the flavor of the original filters and made something new. You will find the Diosynth filters add their own signature to the sound.



An example of the Filter section

Parameter	Mod?	Range	Description
Drive	Yes	0–256	Adds controlled harmonic saturation.
Res	–	0–256	Resonance
Cutoff	Yes	0–256	Filter frequency
Breath	–	+/- 128	The amount and polarity of the impact breath force has on filter cutoff.
Env 1	Yes	+/- 128	The amount and polarity of the influence Envelope 1 has on filter cutoff.
Morph [1]	–	0–256	Formant control (not pictured above)

[1] This control is only visible when the Filter Type = Vowel.

Select type

Name	Description	Name	Description
LP Ldr12	12dB Uncompensated Ladder filter	BP 3-Ler	Band Pass filter derived from a modular synth
LP Ldr24	24dB Uncompensated Ladder filter	HP 3-Ler	High Pass filter derived from a modular synth
LP Fat12	12dB Compensated Ladder filter	LP Stein12	Our version of a popular 12dB Low Pass filter
LP Fat24	24dB Compensated Ladder filter	BP Stein12	Our version of a popular 12dB Band Pass filter with dual 6dB slopes
LP Gate	Low Pass Gate filter	HP Stein12	Our version of a popular 12dB High Pass filter
LP MS20	Low Pass filter with an MS-20 flair	LP 1 Pole	A gentle 6dB Low Pass filter
HP MS20	High Pass filter with an MS-20 flair	LP 8 Pole	A steep 48dB Low Pass filter
LP 3-Ler	Low Pass filter derived from a modular synth	Vowel	Vocal formant filter

The filters listed above fit into three main categories. The Vowel filter is in a class of its own.

High Pass Filters – When you need to emphasize the upper frequencies or remove low-end rumble, these three high-pass designs offer different flavors of brightness:

- **HP MS20:** Classic aggressive character with musical distortion at higher resonance settings
- **HP 3-Ler:** Boutique modular character with powerful resonance potential
- **HP Stein12:** 12dB per octave design with smooth, controllable response

Band Pass Filters – For isolating mid-frequencies or creating vocal-like "wah" effects:

- **BP 3-Ler:** Boutique modular character with focused, clear band-pass response
- **BP Stein12:** 12dB design with dual 6dB slopes for musical, warm character

Low Pass Filters – The heart of subtractive synthesis, these ten models cover everything from gentle warmth to aggressive character:

- **LP Ldr12:** 12dB uncompensated ladder filter—classic vintage thinning at high resonance
- **LP Ldr24:** 24dB uncompensated ladder filter—the full vintage experience with steep slope
- **LP Fat12:** 12dB compensated ladder filter—retains bass content at high resonance
- **LP Fat24:** 24dB compensated ladder filter—full-bodied sound with aggressive filtering
- **LP Gate:** Combines low-pass filtering with amplitude control for unique textures
- **LP MS20:** Classic character with distinctive musical distortion
- **LP 3-Ler:** Boutique modular character with powerful resonance potential
- **LP Stein12:** 12dB design with smooth, versatile response
- **LP 1Pole:** Gentle 6dB per octave for subtle warmth and character
- **LP 8Pole:** Steep 48dB per octave for dramatic cutoff effects

Vowel Filter

- **Vowel:** Vocal formant filter that transforms patches into textures with a human quality

Compensated vs. Uncompensated Ladder Filters

Understanding the difference between compensated and uncompensated filters will help you choose the right character for your sound:

Uncompensated filters (LP Ldr12, LP Ldr24): As resonance increases, the low frequency content diminishes. This creates the classic "thin" resonant sound that defined many vintage synthesizers. Perfect when you want that cutting, aggressive resonant character that cuts through a dense mix.

Compensated filters (LP Fat12, LP Fat24): The bass response remains consistent even as resonance increases. This maintains the fundamental weight of your sound while adding harmonic emphasis. Ideal when you need resonant character without losing low-end power.

Drive

Available for all High Pass, Band Pass, and Low Pass filter types, the Drive parameter adds controlled harmonic saturation to your sound. Unlike simple distortion, this drive interacts musically with the filtering process, creating everything from subtle warmth to aggressive character.

At low settings, Drive adds harmonic richness and presence. As you increase the value, you'll hear pleasing saturation that enhances the filter's character. At maximum settings, Drive can create dramatic tonal transformation while maintaining musical quality.

Tip: Try moderate drive with classic ladder filters for vintage warmth, or push the drive hard on the steeper filters for modern aggressive textures.

Filter Drive Mod parameters	Range	Description
Pre/post	Pre, Post	Places Drive effect before the Filter (pre) or after (post).
Breath	+/-128	Breath control of Filter Drive amount
Breath Thresh.	+/-128	Controls how much the Breath Threshold mod source affects Filter Drive.

See [Breath, Breath Threshold, and Breath Threshold Scale](#) for an overview of how those modulation sources interact.

Filter Cutoff

This controls the fundamental filtering frequency for most filter types. As you sweep the cutoff, you're determining which frequencies pass through and which are reduced or removed entirely.

For the Vowel filter, this parameter becomes vowel control, morphing between different vocal sounds and creating the characteristic formant movements that make the patch "speak".

Filter Cutoff Mod parameters	Range	Description
Keytrack	+/- 200	Determines the amount of change in filter cutoff per octave
LFO 1 Amount	+/-128	Controls the level of filter cutoff modulation by LFO 1
Breath Thresh.	+/-128	Controls how much the Breath Threshold mod source affects Filter Cutoff.

Resonance

This adjusts the resonance of the filter, emphasizing frequencies around the cutoff point. At moderate settings, it adds harmonic interest and character. At higher settings it can create dramatic sweeping effects, and many filter types will self-oscillate to produce pure tones for percussive attacks or a playable instrument in its own right.

Each filter type has its own resonant character—experiment to find which ones provide the musical response you're looking for.

Breath

As the control is moved you'll see the words "Breath -> Cutoff" as the value changes within the range of +/- 128. Negative values mean the Filter Cutoff frequency is lowered as you blow harder; positive values mean the Filter Cutoff frequency rises as you blow harder.

Envelope 1

This defines the amount and polarity of the effect Envelope 1 will have on the filter. Positive values open the filter as the envelope rises; negative values close it, creating inverse effects where the envelope darkens the sound instead of brightening it.

Envelope 1 has a pre-wired connection to the filter section, which saves a mod route. A different envelope can be used to control the filter if you want; just create a new route in [The Mod Matrix](#).

Envelope 1 Mod parameter	Range	Description
Velocity	+/-128	Determines the amount of impact velocity will have on the Envelope 1 Amount value.

Morph

This provides control over the location and spread of the formants, which are certain peaks and nodes in the filter frequencies that help to approximate the resonance of the human vocal apparatus. Use this with the Cutoff and Resonance parameters for greater precision.

EQ

EQ is an abbreviation for the word “Equalizer”. An EQ lets you raise or lower certain frequency ranges of an audio signal. Diosynth has a 4-band EQ, which means its controls cover four different ranges of the combined output of the oscillators, samples, and filter.

The Low and High bands let you adjust the frequencies at which they begin to cut or boost the signal. The two Mid bands are parametric, which means you can adjust not only their center frequencies but also the width of the frequency ranges they will cut or boost.

EQ Band	EQ Type	Frequency Range	Q (Width)	Cut/Boost Range
Low	Shelving	32 Hz – 2 kHz	n/a	-12/+12 dB
Mid 1	Parametric	80 Hz – 10 kHz	0.1–12.0	-12/+12 dB
Mid 2	Parametric	80 Hz – 10 kHz	0.1–12.0	-12/+12 dB
High	Shelving	500 Hz – 16 kHz	n/a	-12/+12 dB

Low and Hi bands: Shelving EQ

A “shelving” EQ got its name because it affects all frequencies the same past a certain point; picture a flat shelf holding books and it’s like that, only with sound. This type of EQ band lets you cut or boost everything on the other side of the selected frequency: the Low band will affect everything from the selected frequency all the way down; the High band will affect everything from the selected frequency all the way up.

The Low band has an adjustable frequency range between 32 Hz and 2 kHz. Everything below the selected frequency can be lowered or raised by up to 12 dB.

The High band has an adjustable frequency range between 500 Hz (the C above middle C) and 16 kHz. Everything above the selected frequency can be lowered or raised by up to 12 dB.

Mid 1 and Mid 2 bands: Parametric EQ

Unlike a shelving EQ, a parametric EQ band only affects frequencies within a certain range. The range itself can be adjusted (that’s the Q parameter). There are two parametric bands (Mid 1 and Mid 2), and they can overlap.

Q (width) provides an adjustable width for the Mid EQ bands. Lower values provide a wide “bell curve”; higher values provide an increasingly focused range of frequencies (picture a very narrow spike or dip). This can be good for reducing problem frequencies or emphasizing a desirable range. The reduction of a wide Q range can help achieve the popular “smile curve”; an emphasis of high/low ranges through the reduction of the midrange frequencies.

Mid 1 and Mid 2 have an adjustable frequency range between 80 Hz and 10 kHz. Everything centered around that frequency that falls within the range defined by the Q parameter can be lowered or raised by up to 12 dB.

Insert FX

This lets you add an effect that is dedicated to the selected Part. It can have its own delay, chorus, distortion, even its own reverb, without affecting the other Part. The two Parts will then pass through the Master FX and Reverb for final blending, after which the signal is passed to the outputs.

The Insert and Master FX have identical effect modules and parameters. The exception is that the Master FX have controls that let you adjust the Input Level and Output Level independently.

See the [Effects List](#) for a list of the effect types.

Modulation Matrix

Modular synthesizers use cables to make connections. Diosynth has a neater solution: an easy-to-use internal patch bay with 32 sets of modulation sources and destinations. If you need a mod route that doesn’t already have a hardwired connection under one of the Mod buttons, this is the place to make it happen!

The mod routes are set up in groups of 8. There are two ways to select the groups: 1) Click the arrows on either side of the numbers at the top of the Matrix list, or 2) click the numbers and make a choice from the drop-down menu.



Sources are in the left column. Click one and a list appears, from which you can select a source for the mod route.

Destinations are in the middle column. Click one and a list appears, from which you can select a destination for the source to modulate.

	Source	Destination	Depth
1	Breath	Synth Level	2
2	Joystick Up/D...	ALL OSC Pitch	4
3	Joystick <-	OSC1 Wavesc...	256
4	Joystick ->	Growl Level	108
5	PressPad 1	OSC2 Level	256
6	Bite	ALL OSC Pitch	0

The Depth is in the blue section of each row. Click and drag up or down to set the modulation to a positive or negative value. If you right-click in this field you can enter a value manually.

The idea is simple: You want a control to make a parameter to do something, so you connect those two items in the Mod Matrix.

- The source makes the modulation happen.
- The parameter is the target (i.e., the destination)
- The depth decides how much of an effect the source has on the destination.

The source can be a physical control (like a Press Pad) or a software control (like an LFO or MIDI CC).

Mod Matrix examples

Let's go through a couple of simple examples of how to use the Mod Matrix.

Joystick -> Oscillator pitch

1. Using the Patch Manager, find an INIT patch on your Diosynth (those were in banks D-F originally).
2. Right-click that patch and select Edit. This opens that patch in the Patch Editor window.
3. Look at the Mod Matrix section on the right side.
4. Click the first slot in the left column to view the source list, then select Joystick -> (if it isn't already selected).
5. Click the first slot in the middle column to view the destination list, then select OSC 1 Pitch from the top of the list.
6. Drag the number in the third column to adjust the value (it can be positive or negative).
7. Play a note and move the joystick to the right. You'll hear the pitch go up or down, depending on whether the depth value is positive or negative.

LFO -> Oscillator pitch

1. Change the source in the left column to LFO 1.
2. The pitch will sweep repeatedly from top to bottom on its own; that's the LFO doing the job the Joystick did in the first example.
3. Try different LFO shapes, speeds, and other settings.
4. Try different sources, like PressPad 1, Envelope 1, etc.
5. Try different destinations, like Osc 1 Pan, Filter Cutoff, etc.

As you can see, the Mod Matrix can make a Diosynth patch do some very interesting things!

Modulation Sources

These are the mod sources available in the Diosynth. There is related information below the chart.

Type	Notes
Breath	Breath, Breath Threshold, Breath Threshold Scale
Bite	The Bite sensor can be used as a modulation source.
Velocity	Breath force and incoming MIDI note velocity
Keytrack	Center note = C4
Joystick	Joystick <-, Joystick ->, Joystick <->, Joystick Up, Joystick Down, Joystick Up/Down
PressPad	PressPad 1, PressPad 2
Gyro	Diosynth motion can be a modulation source
Env	Env 1, Env 2, Env 3, Env 4, Env 5
LFO [1]	LFO 1, LFO 2, LFO 3, LFO 4, LFO 5 LFO 1+, LFO 2+, LFO 3+, LFO 4+, LFO 5+
MIDI [2]	CC [000-119]

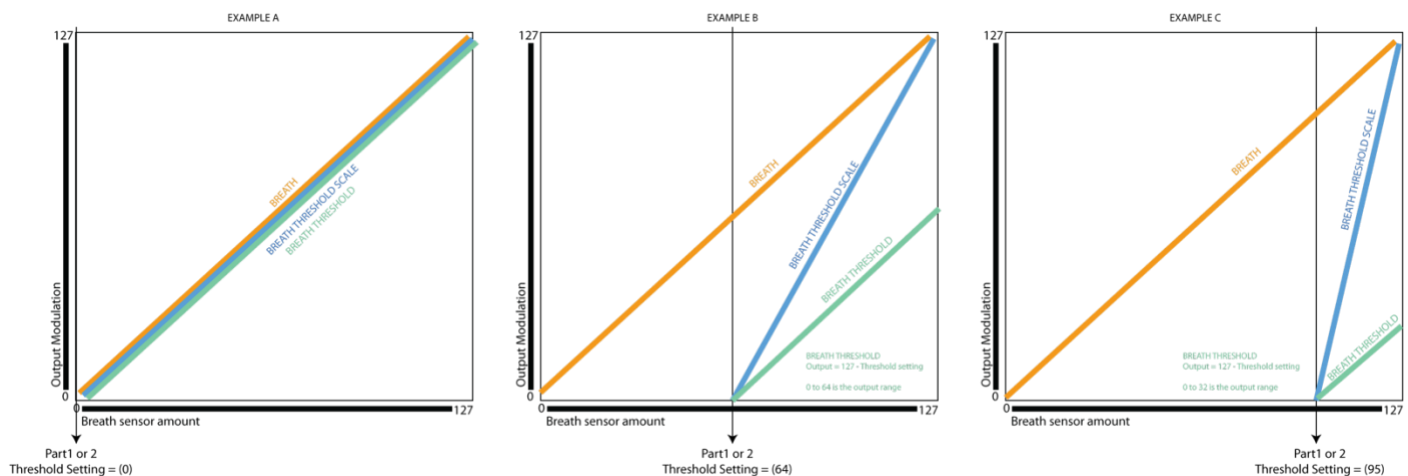
[1] An LFO is normally a bipolar source; i.e, it will modulate in a positive direction, cross the zero point, and then modulate in a negative direction, etc. A plus sign [+] means the LFO will modulate the target either positively or negatively starting from the zero point. The direction is set by the modulation depth in the Mod Matrix.

[2] Omitted: MIDI CCs 2, 20-27, and 120-127.

- MIDI CCs 2 and 20-27 are reserved for Diosynth functions, as listed in [MIDI Settings](#): e.g., Breath Control (CC 2), Joystick left/right (CC 21, CC 22), PressPad 1 and PressPad 2 (CC 25, CC 26), and Gyro TX (CC 27).
- MIDI CCs 120-127 are reserved for Channel Mode messages, as explained in the [MIDI v1.0 specification](#).

Breath, Breath Threshold, and Breath Threshold Scale

Here's an overview of how the **Breath**, **Breath Threshold**, and **Breath Threshold Scale** modulation sources interact.



Each of these parameters are mod sources that relate to breath force (the breath sensor amount, as shown above).

With the Part Threshold setting at 64 (the one on the Patch tab in the Patch Editor), here's what they do:

1. The **Breath** source ignores the Threshold setting altogether. It always outputs the breath sensor amount, and is always capable of outputting values = 0–127.
2. **Breath Threshold** outputs nothing until the input exceeds 64. Then it can only output values = 0–64.
3. **Breath Threshold Scale** outputs nothing until the input exceeds 64. Then it can output values = 0–127, but at a lower resolution.

The above numbers will change based on the Part Threshold value. See the rightmost graphic, where Part Threshold is set to 95. There is no change to the Breath mod source, but the others operate within a more limited range.

To summarize:

- BREATH always outputs the breath sensor amount. The mod route depth determines the impact it has.
- BREATH THRESHOLD always outputs the breath sensor amount minus the threshold setting.
- BREATH THRESHOLD SCALE always outputs the breath sensor amount but scales the output between 0–127.

Modulation Destinations

These are the potential mod destinations in the Diosynth. There is related information below the chart.

Destination	Parameter(s)
Osc 1, Osc 2, Growl, Sample, All Osc	Pitch
Osc 1, Osc 2	Wave Scan
Osc 1, Osc 2, Growl, Sample, All Osc, Noise	Level
Osc 1, Osc 2, Noise	Pan
Filter	Cutoff, Resonance, Morph, Drive
Noise	Cutoff, Resonance, Morph
Synth, Amp, Part	Level
LFO 1–5	Rate, Level
Env 1–5	Attack, Hold, Decay, Sustain, Release
Mod Matrix [1]	Depth [01-32]

[1] Mod Matrix: A source can modulate the depth of any mod route. “Mod Matrix Depth 1” targets mod route 1, etc.

Envelopes 1-5

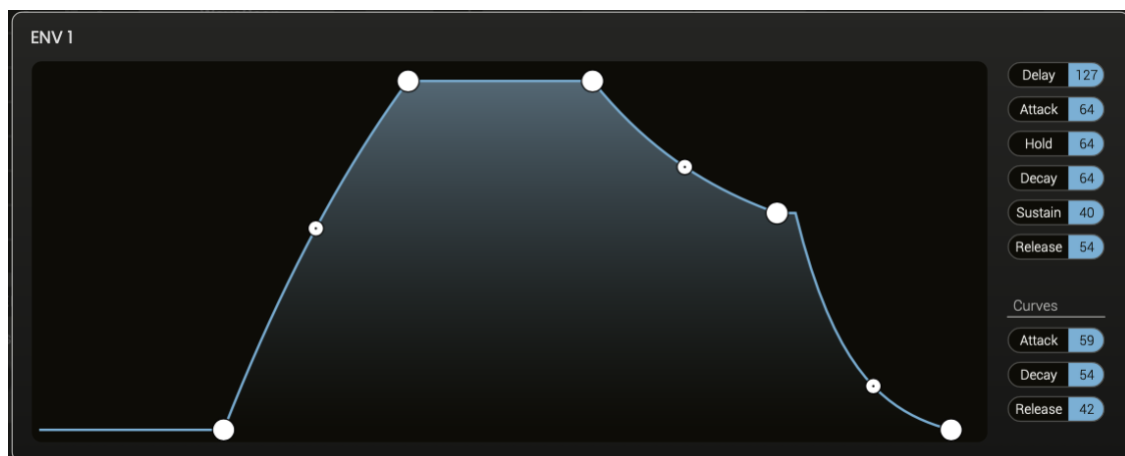
It’s less common now, but when you mail a letter, you put it in an envelope. When you open the envelope, its contents are revealed. It’s the same with Diosynth envelopes: They can open and close to reveal what they contain.

Here’s a simple example:

1. Select an INIT patch from one of the empty Diosynth banks (D-F).
2. Right-click and select Edit.
3. Set Filter Cutoff and Filter Breath to zero. You should hear no sound if you play a note.
4. Set the Filter Env 1 Amount control to maximum. The sound returns.
5. Select ENV 1 from the Envelope section and set Sustain to zero. Play a note: no sound.
6. Raise Sustain to maximum and set Attack to about 40. Play a note: The sound comes in gradually as the envelope opens the filter.
7. Set Sustain to zero and play a note: The sound comes in gradually and drops suddenly to zero.
8. Set Decay to about 40 and play a note: After the envelope opens completely, it drops more slowly to silence. The Decay parameter controls the rate at which the envelope closes the filter back to zero.

We’ll describe all of the envelope parameters below, but first let’s look at another way to change the settings.

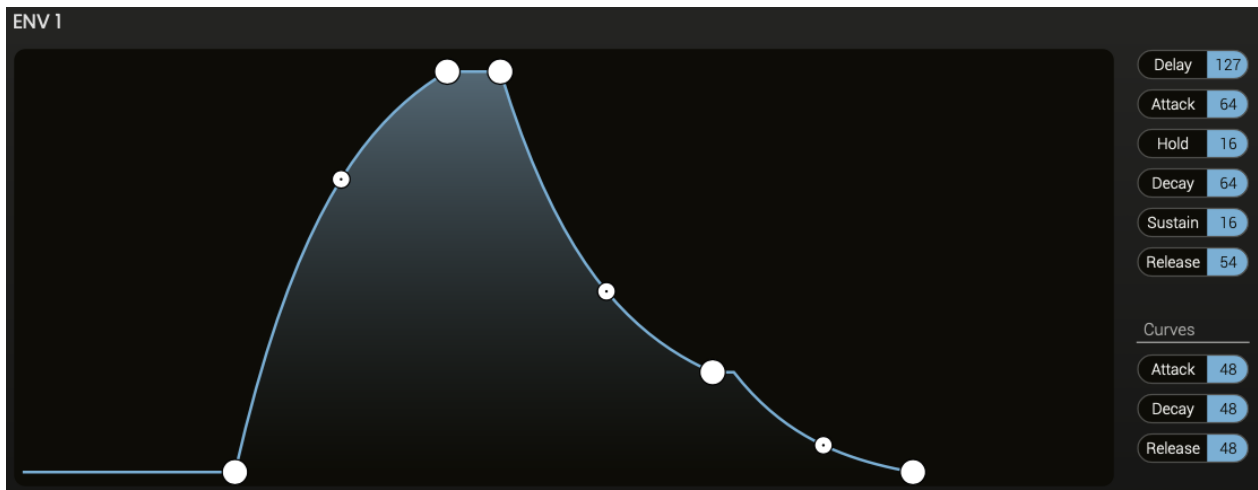
You might have noticed during steps 6-8 above that the graphic under the Envelope controls was changing as you adjusted the controls. If you hover over that graphic, a blue pencil icon appears in the right corner of that window. Click that and you’ll see something like this:



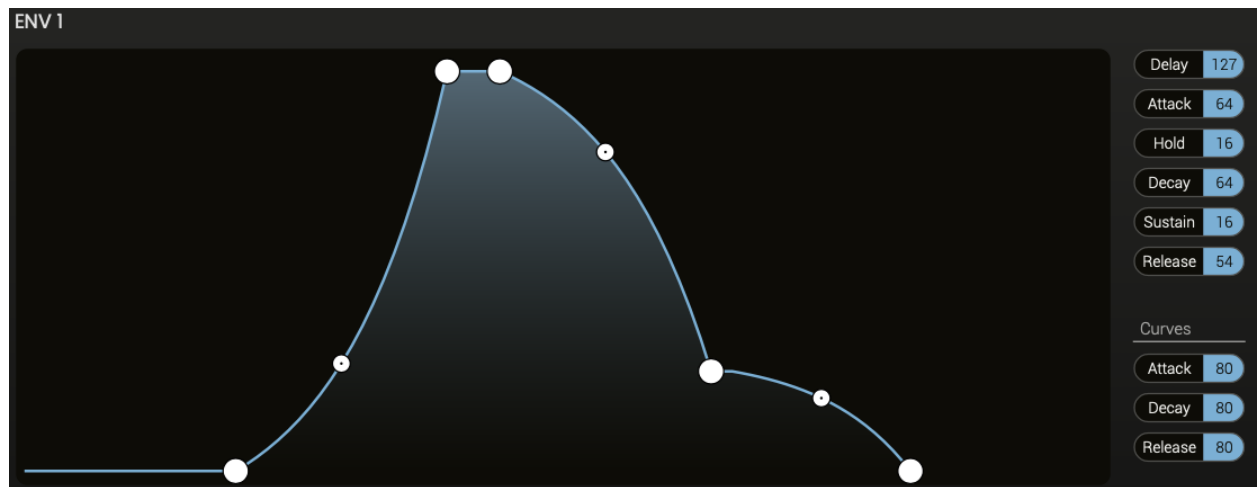
The bigger white dots represent the various stages of the envelope. As they are dragged, the numbers on the right side of the window change. The time-based stages move left and right (Delay, Attack, Hold, Decay, and Release). The Sustain parameter is a level, not a time, so it drags up and down.

Envelope curves

The smaller white dots can be dragged to change the curves of three of the time-based stages (Attack, Decay, and Release). This affects the behavior of those stages exactly the way it appears: For example, the attack stage of the envelope can open slowly and then speed up, or open quickly and then slow down.



Envelope curves example 1: With all curve values at 48, the Attack curve is logarithmic (start quickly, end slowly); the Decay and Release curves are exponential (start slowly, end quickly).



Envelope curves example 2: With all curve values at 80, the Attack curve is exponential (start slowly, end quickly); the Decay and Release curves are logarithmic (start quickly, end slowly).

Click outside the envelope window to close it and return to the main window.

Stages

All Diosynth envelopes provide the classic ADSR controls (Attack, Decay, Sustain, and Release). But they've been enhanced with delay and hold stages, so technically the form factor is DAHDSR. The Delay and Hold parameters are visible under the ADSR controls.

These definitions apply to all Envelopes:

- **Attack:** After the delay period, the length of time the envelope takes to reach its full amplitude.
- **Decay:** After the hold period, the length of time the envelope takes to reach its sustain level.
- **Sustain:** The resting level of the envelope prior to note off.
- **Release:** The length of time the envelope takes to reach its zero point after note off.
- **Delay:** The length of time before the attack segment begins.
- **Hold:** The length of time between the attack and decay segments.

Trigger sources

There's a blue gear icon in the upper right corner of the Envelope window. Click that to reveal the Trigger Source options for each envelope: Off, Note On, and LFOs 1-5. Each Envelope can have up to 4 Trigger sources.



All Envelopes have their default Trigger sources set to Note On, but you can set them all to whatever you want. It can be interesting to have an LFO trigger an Envelope, for example, because then once the patch has been triggered it can play itself forever. Synthesizer programmers call this “generative sound design”, where a patch can evolve in complex ways over time with minimal or no input from another source.

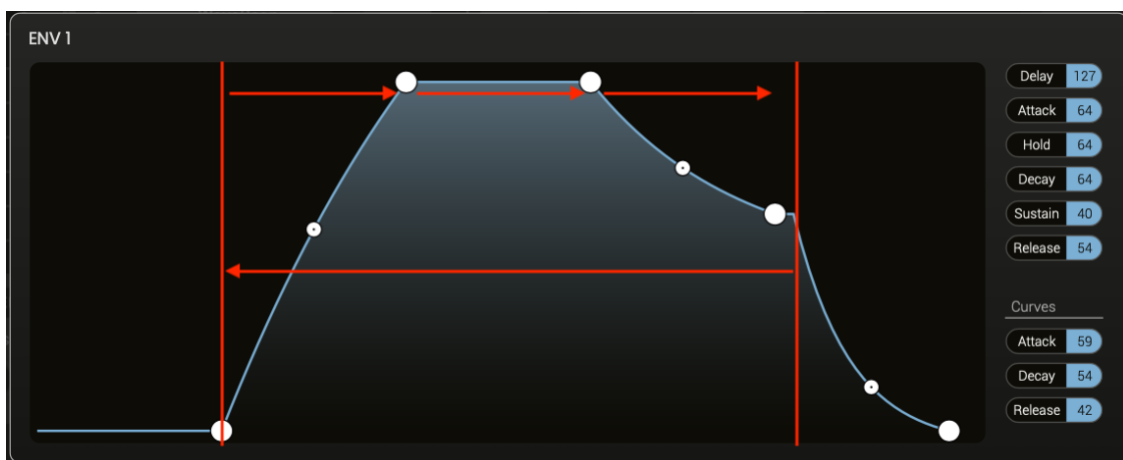
Sync

Under the Release control there's a switch labeled “Sync”. When that is enabled, all time-based stages of that envelope are now measured in beats (quarter notes, eighth notes, etc.). This lets you synchronize the entire envelope to the tempo. This can be especially interesting when the envelope is looped (see the next section).

Loop

Whether an envelope has Sync set to On or Off, it can be set to loop up to 49 times and then come to rest at the Sustain stage. With the maximum setting of 50 it can loop forever.

The length of the loop is determined by the Attack, Hold, and Decay parameters. So, after the Delay period is over, the envelope will repeat those stages the number of times set by the Loop parameter. If the number of loops is 49 or less, the envelope will proceed to the Sustain stage and stay there until the note is released.



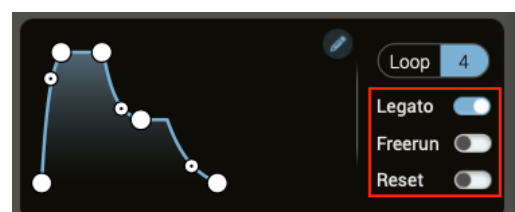
ENV Trigger Modes

There are three switches under the Loop parameter: Legato, Freerun, and Reset. These determine whether the envelope starts from the beginning when a note is played, and whether it needs to be triggered before it begins.

Legato: When sheet music uses the term “Legato” it means to play a passage smoothly, with no rests between the notes. Likewise, when this parameter is set to On, the envelope will not retrigger if previous voice has not been released. This allows a filter envelope to remain at its sustain stage when a series of notes are played, for example, which can help a solo or a bass line to be more expressive.

Freerun: An envelope set to Freerun passes through all segments, even if the note is released before the end of the decay segment. If the note is held then the envelope proceeds to the sustain level and remains there until the note is released, after which the envelope proceeds through the release segment.

Reset: When Reset is On an envelope will reset when a new note is played.



LFOs 1-5

LFO is an abbreviation for Low Frequency Oscillator. Something that oscillates goes back and forth in a repeating pattern, like an oscillating fan. Each time it returns to its starting point, it has completed one cycle.

On a synthesizer, LFOs are the cause of familiar effects like vibrato and tremolo, but they can be used in very complex ways through the Mod Matrix.

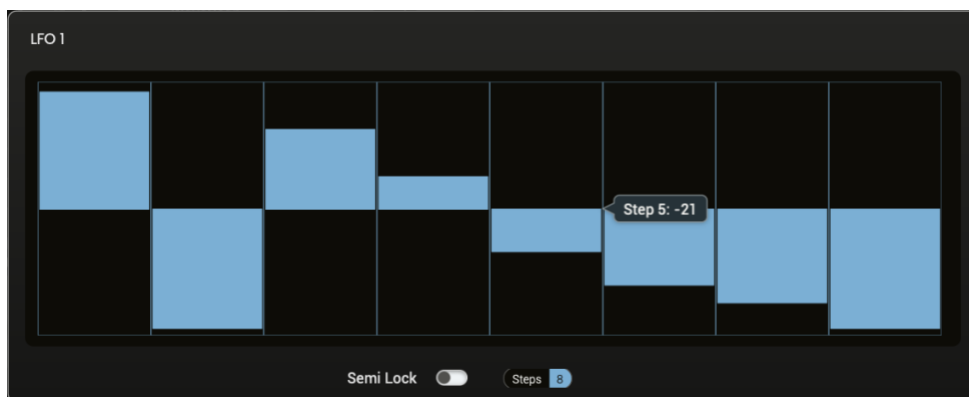
All 5 LFOs have identical parameters, so every description applies equally to all.



- **Speed** sets the duration of the LFO cycle.
- **Sync** determines whether the LFO cycle is measured in cycles per second (Hertz, a.k.a. Hz), or is measured in beats (quarter notes, eighth notes, etc.).
- **Delay** is the length of time before the LFO begins to modulate its target.
- **Fade In** is how long it takes the LFO to rise to its maximum amplitude.
- **Gain** is the maximum amplitude the LFO will reach.
- **Wave** opens a menu with 11 waveform options. The characteristics of each LFO waveform are shown in the graphic below the controls. Some are simple (Sine, Triangle, Saw, Square, and PWM); some are more complex (S&H, Noise, and Random). The [Step LFO](#) is the most complex, and perhaps also the most fun! There's a section dedicated to that below.
- **Trig** selects one of 2 trigger modes for the LFO: Note and Off. It decides whether an LFO resets with each new note or cycles freely.
- **Mode** decides if the LFO will cycle repeatedly, run its course only once, or advance by one step each time it is triggered. We'll cover all of that in the [Step LFO](#) section.
- **Phase** lets you specify the exact point at which an LFO will begin its cycle, as measured in degrees from zero to 360.
- **Smooth** softens the transitions from one amplitude of an LFO to the next. When a waveform with abrupt changes is selected (Saw, Square, S&H, Step) the Smooth parameter makes the LFO "glide" between adjacent values. At the highest setting the square and triangle LFO waveforms are identical.

Step LFO

The Step LFO lets you define up to 64 stages through which the LFO will pass. When LFO Wave = Step, a blue pencil icon appears in the lower right corner of the LFO window. Click that to reveal the Step LFO parameters.



New parameters appear in this window: Semi Lock and Steps. Let's work with Semi Lock Off for now.

1. Right-click an [INIT] patch and select Edit.
2. In the Mod Matrix, select LFO 1 as the source and OSC 1 Pitch as the destination.
3. Set Depth to 256.
4. Select LFO 1 and choose the Step waveform from the Wave menu.
5. Set the Speed to about 3.00 Hz.
6. Hover over the lower right corner of the LFO window and click the blue pencil icon after it appears. This puts you into the Step Edit page.
7. Leave the Steps value at 8 for now.
8. Notice that steps 1 and 2 have high and low values, respectively.
9. Hold a note. Three octaves of the same pitch will play. The third pitch is longer because the last six steps are set to the same value.

10. Keep holding the note and notice that the 8-step sequence repeats.
11. Drag inside the other steps to set other values and listen to the way that affects the Step LFO output.

Tip: You can click and drag inside the Step Edit page to draw a line or curve across multiple steps.

Now let's learn how to select specific pitch intervals for the Step LFO.

Semi Lock



Semi Lock displays the steps inside the Step Edit page in semitone values. This makes it easy for an LFO to play standard 12-tone pitches. Let's try with Semi Lock On this time.

1. Right-click an [INIT] patch and select Edit.
2. In the Mod Matrix, select LFO 1 as the source and OSC 1 Pitch as the destination.
3. Set Depth to 256.
4. Select LFO 1 and choose the Step waveform from the Wave menu.
5. Set the Speed to about 3.00 Hz.
6. Hover over the lower right corner of the LFO window and click the blue pencil icon after it appears. This puts you into the Step Edit page.
7. Leave the Steps value at 8 for now.
8. Hover the cursor above steps 1, 2, and 3, and notice they are set to +12, -12, and 0, respectively. These are the chromatic equivalents of the non-Semi Lock values.
9. Hold a note. Three octaves of the same pitch will play.
10. Enter values on the other steps to see how that affects the Step LFO output.

But what if a step value doesn't fall on a chromatic interval? Continuing with the previous example:

1. Set Semi Lock to Off.
2. Set a few steps to random values.
3. Toggle Semi Lock On and Off a few times and watch the bar graphs for the steps. As Semi Lock is enabled the bar graphs change to exact semitone values.

Let's try a Step LFO with more than 8 steps.

1. Set Semi Lock to On.
2. Click and drag the blue value field to select a higher number of Steps. There can be up to 64.
3. Select semitone values for each step as needed.
4. Play a note and listen. The LFO conforms to chromatic intervals.

Close the Step Edit window and try other settings for Smooth, Rate, BPM = On, etc. With 64 steps and a synced LFO rate of 1/16, for example, an LFO can play a 4-bar melody!

Remember, in order for the Step LFO semitone values to quantize to the chromatic scale, be sure to do the following:

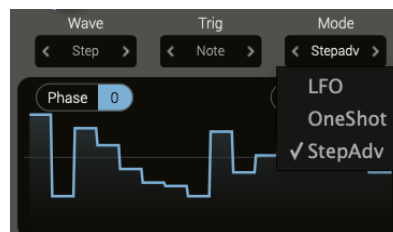
- Set the LFO Gain to 64.
- In the Mod Matrix, route the LFO to the pitch of an oscillator with a depth of 256.

With those conditions met, the Step LFO semitone values will always match the 12 pitches in the chromatic scale.

Step LFOs: Step Advance

The LFO mode has a third option: Step Advance (Step Adv). When LFO Wave = Step and Mode = Step Adv, each time that LFO is triggered it advances to the next Step in the sequence.

Other parameters affect how this works. But for now, let's set up a crazy little Step LFO!

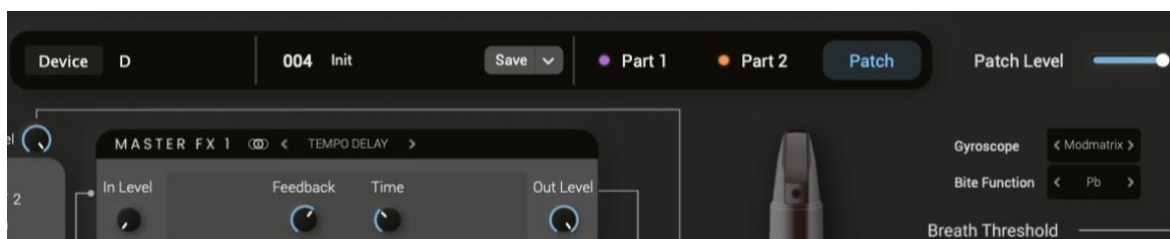


1. Right-click an [INIT] patch and select Edit.
2. In the Mod Matrix, select LFO 1 as the source and OSC 1 Pitch as the destination.
3. Set Depth to 256.
4. Select LFO 1 and choose the Step waveform from the Wave menu.
5. Set Mode = Step Adv.
6. Hover over the lower right corner of the LFO window and click the blue pencil icon to enter the Step Edit page.
7. Set Semi Lock to On. This provides semitone values in the Step Edit window.
8. Select values between -12 semi and +12 semi.
9. Play the same note 8 or more times. Each time the LFO is triggered the sequence advances by one Step!

Note: When Mode = Step Advance, the Smooth setting has no effect.

Patch parameters

The Patch page provides a diverse set of parameters that affect the entire patch.



- Some are independent per Part, such as the pan and level settings.
- Some govern how the Parts interact (note range, breath threshold setting).
- Some affect both Parts equally, like the FX.

The Patch page has different sections: Mixer, Master FX, Pitch, Glide, a keyboard graphic, a Patch Level slider, and a column of controller settings. These can be set differently for each patch.

Mixer

Each Part can be panned to a different location in the stereo field, and each can be set to a different level. This allows you to achieve the perfect balance between the two parts.

You can also set a specific note range for each Part, which makes it possible to play a completely different sound in each range.

Parameter	Range	Description
Pan	+/- 128	Stereo position of the selected Part
Level	0-64	Relative volume of the selected Part
Lo Note / Hi Note	C-1-G9	Note limits for the selected Part



Lo Note / Hi Note

Click-drag the value, or right-click and enter one. Notice the keyboard graphics at the bottom of the window as the value is changed: it shows the range in which each part is active or inactive. You can also drag those points to set the keyboard range. If you change it in one place, it also changes in the other.



Part 1 and Part 2 overlap in the middle of the keyboard range.

Master FX

This section provides three effects that are applied equally to both Parts: Master FX 1, Master FX 2, and Reverb.



The Insert and Master FX have identical effect modules and parameters. The exception is that the Master FX have controls that let you adjust the Input Level and Output Level independently.

Click the effect name in the middle of each effect to open a selection menu. Set parameters as desired, and control the strength of each effect with the In Level and Out Level controls for each effect.

See the [Effects List](#) for a list of the effect types.

Dry Level

The Parts are sent directly through the Master FX section and emerge 100% wet. The Dry Level parameter lets you mix in as much of the unprocessed signal as you like. For example, if you only want a touch of reverb or delay, set the Dry Level parameter higher and the Out Level parameter(s) lower.

Pitch

These four parameters let you adjust the tuning, transposition, and octave range of each patch. You can also select a specific scale or design your own!



Parameter	Range	Description
Tuning	380–500 Hz	Sets frequency of A4 for the current patch (default = 440 Hz)
Transpose	+/- 11 semitones	Chromatic transposition for the current patch
Octave	+/- 3 octaves	Octave range for the current patch
Scale	Custom user scale + 38 preset scales + 32 Microtuning scales	Select the scale for the current patch

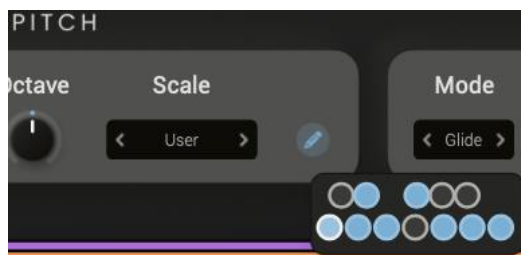
🎵 If the Tuning, Transpose, and/or Scale parameters are greyed out and cannot be changed, that is because their respective parameters are locked in the [Pitch](#) section of the Setup page.

Diosynth includes some classical temperaments that are useful when playing older music, such as music from the Renaissance period. It also includes Eastern scales, useful for playing traditional music from Japan or China, along with more experimental non-traditional scales. The default scale is Chromatic. Click the link to see a list of the [Diosynth Scales](#).

Create a User Scale

It's easy to design your own scale:

1. Select the User option from the Scale menu. It's one click to the left of the Chromatic scale.
2. A blue pencil icon appears when the User scale is chosen. Click that to enter the Scale Edit page.
3. A dot-based keyboard appears. The dots represent a chromatic scale (C, C#, D, etc.) Choose up to 8 notes.
4. Click outside the dot-based keyboard graphic to exit the Scale Edit page.



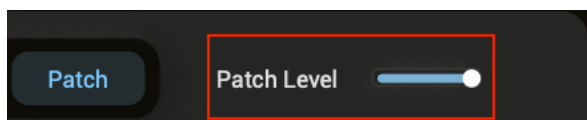
Glide

This feature allows the notes you play to glide from one pitch to the next. The pitch can change smoothly (Glide) or chromatically (Glissando), and you can adjust how quickly the pitch changes from a lower note to a higher note, or vice versa.



Parameter	Range	Description
Mode	Off, Glide, Glissando	Glide = smooth, Glissando = chromatic
Time	0–127	The speed at which the pitch changes
Curve	0–128	0 (exponential) to 128 (logarithmic). 64 is linear.
Legato	Off, On	Off: Glide always happens On: Glide only happens between legato notes. It does not happen between staccato notes.

Patch Level



There's a slider on the right side, straight across from the Part 1 / Part 2 / Patch selectors. This controls the overall output level of the patch. You can use this to help adjacent patches in your bank to be a similar volume. The factory patches have been levelled, but it's possible that an edit to an effect or the addition of another oscillator can make an edited patch louder than the others. Use this parameter to balance them.

Controller settings

Along the right side of the Patch window are a series of assignable controls that can be personalized for each patch. For example, in one patch the Bite function can be set to PB for Pitch Bend, but in the next patch it can be set to Mod Matrix so it can be dedicated to use as a modulation source only.

Group	Option	Range	Description
---	Gyroscope	Off, Mod Matrix, Vibrato, Growl, Glide, Glide Rate, Tone	Determines the behavior of the Gyro sensor for the current patch.
---	Bite Function	Off, Mod Matrix, PB (Pitch Bend)	Determines the behavior of the Bite sensor for the current patch.
Breath Threshold Setting [1]	Part 1	0–127	Sets the range of the Breath Thresh. mod source for the selected Part.
	Part 2		
Assign buttons [2]	Button 1	Next Patch, Prev Patch, Next Fav, Prev Fav, Glide	Independent options for Assign buttons 1–3 (see footnote).
	Button 2		
	Button 3		
Joystick [1]	Move <–	Off, Mod Matrix, Vibrato, Growl, Glide Rate, Tone	Independent options for Joystick Left and Right (see footnote).
	Move –>		
	PB Up	0–1200	Pitch Bend range for Joystick Up (see footnote).
	PB Down	0–1200	Pitch Bend range for Joystick Down (see footnote).
Pressure Pads [1]	Button 1	Off, Mod Matrix, Vibrato, Growl, Glide, Glide Rate	Independent options for Pressure Pads 1–2 (see footnote).
	Button 2		

[1] See [Breath, Breath Threshold, and Breath Threshold Scale](#) for an overview of how those modulation sources interact.

[2] There's a Setup tab option for each of these controls that allows them to have globally fixed functions or change their settings per patch. If you want them to do something different per patch, set the function to Patch on the [Setup page](#). Otherwise they will ignore the settings on the Patch Editor page.

Save the edited patch

As soon as you've edited a patch to the way you want it, you can save it on top of the original version or give it a new name and save it to a new location.

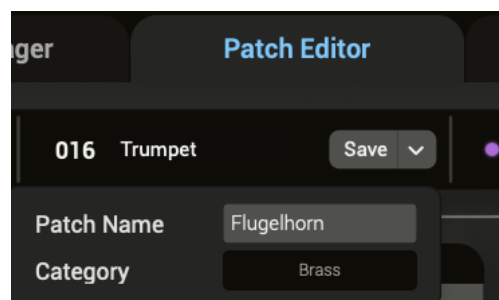
Naming the patch

Click the name of the patch and a menu opens below it that contains the Patch Name and Category fields.

Click inside the Patch Name field and enter the new name. It can contain up to 15 characters.

When you've given the patch the name you want it to have, you can save it to a new location using the down arrow menu. This opens the [Save Patch As](#) menu.

If you want to save the edited, renamed patch onto its original location, click the Save button.



Change patch category

If you decide that a certain patch should be listed in a different category, simply click its name in the Patch Editor and select the new category. Click Save to finalize the change.

In this case we've decided to recategorize SquareBass GD as a Synth Lead rather than a Bass.



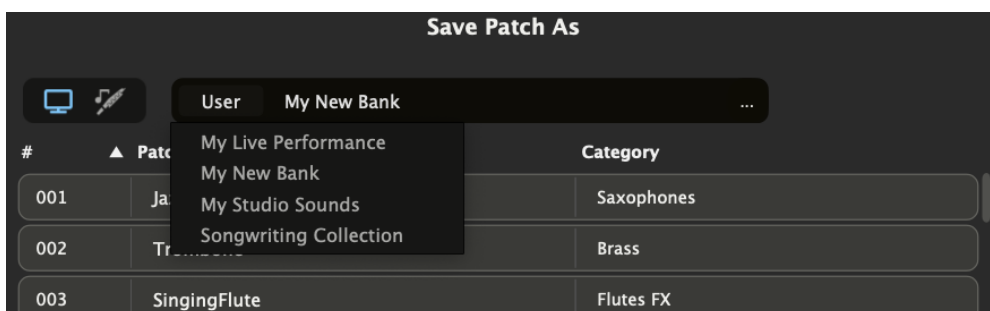
Changing the category of a patch

Save Patch As...

If you want to save the edited patch to a new location, click the down arrow next to the Save button. You can click the Diosynth/Computer buttons to select the target device, then click the bank name to select the target bank.



Save Patch As with Diosynth bank options menu



Save Patch As with Computer bank options menu

Once you have selected the target bank, select the desired patch location and click Save.

Favorites

Click the Favorites tab to view and organize the list of your Favorite patches.

Favorites tab

The patches in the Favorites bank are listed in numerical order. The columns show the Favorites slot number, the name of the patch, the location of the source patch (Patch ID), and the category of each patch.

Remember, the Favorites list points to the contents of a specific patch location in the unit. If the original patch is altered or replaced, it will also be altered or replaced in the Favorites list.

Edit the list

There are several ways to change the Favorites list. You can add patches, replace them, and/or change the order of patches in the list.

To get started, select the Favorites tab and click the blue Edit List button (the one with the pencil icon). The Favorites list will shift to the right and the internal patch banks will appear as buttons on the left.

Editing the Favorites list

Drag and drop method

This is the fastest way to add a patch to the Favorites list.

1. Select a bank button in the left window to view the patches in that bank.
2. Locate the patch you want to add to the Favorites list.
3. Scroll through the Favorites list on the right to find the location where the new Favorite should go.
4. Now drag the desired patch into the Favorites list on the right.

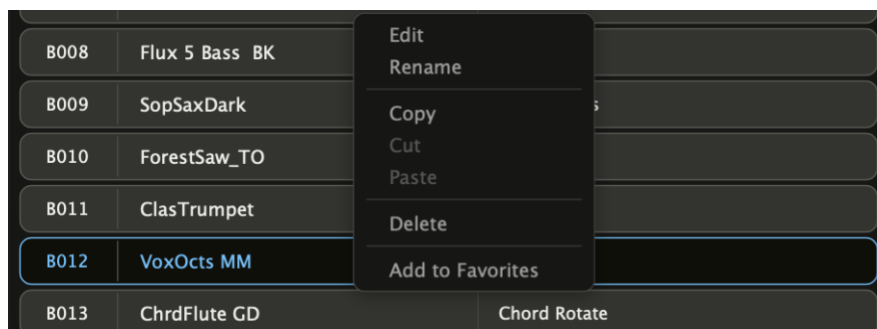
Drag a patch onto the Favorites list

You can add more patches to the Favorites list if you want. The same patch can be placed in multiple slots in the Favorites bank by repeating the above steps.

When you're done, click Stop Editing to return to the Favorites tab.

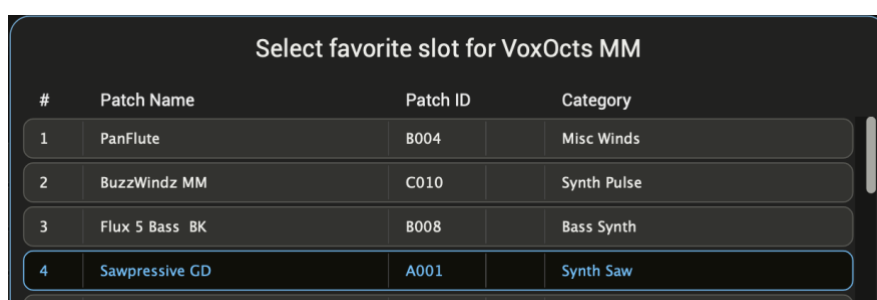
Add to Favorites: Right-click

To add a patch to the Favorites bank from the Patch Manager tab, right-click the desired patch and select **Add to Favorites** from the context menu. In this example, patch B012 has been selected.



Right-click the patch name and select Add to Favorites

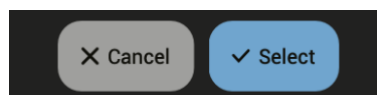
After clicking Add to Favorites, a window opens where you can choose the Favorites slot for the desired patch. The name of the selected patch is listed at the top of the window.



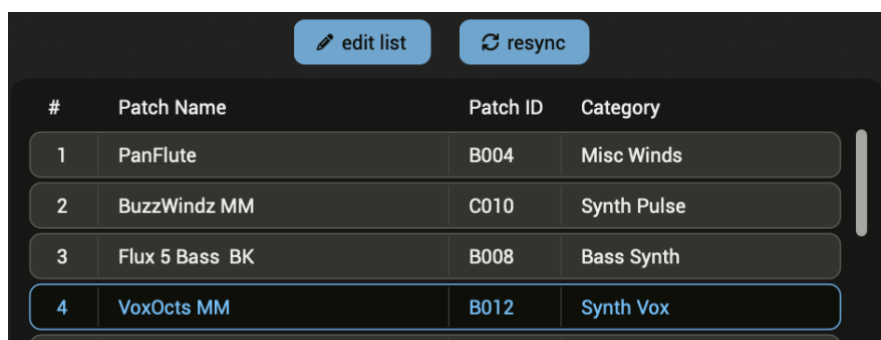
Select the desired location in the Favorites bank

Scroll through the Favorites list and choose the target slot where the new patch should be. In this example Favorites slot 4 has been chosen. Note that the slot currently points to patch A001.

Click the Select button at the bottom of the window to approve the chosen slot or click Cancel to return to the Patch Manager tab.



The edited Favorites bank now points to patch B012 in slot 4 instead of patch A001. The Favorites bank was updated in the Diosynth at the same time.



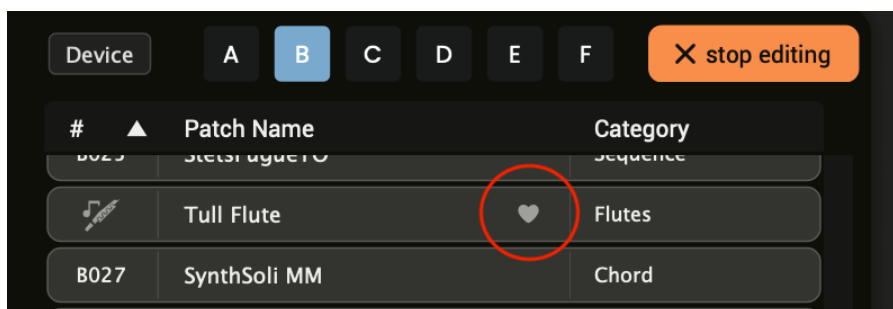
The edited Favorites bank

The same patch can be placed in multiple slots in the Favorites bank by repeating the above steps.

Add to Favorites: The heart icon

This next example starts inside the Edit List window, but it's basically the same if you start on the Patch Manager tab.

When you hover over a patch name with the cursor, a heart icon appears at the end of the patch name cell.



Hover over a row and click the heart icon to add that patch to the Favorites list.

Click this heart and a window opens that asks you to select the Favorites slot for that patch.

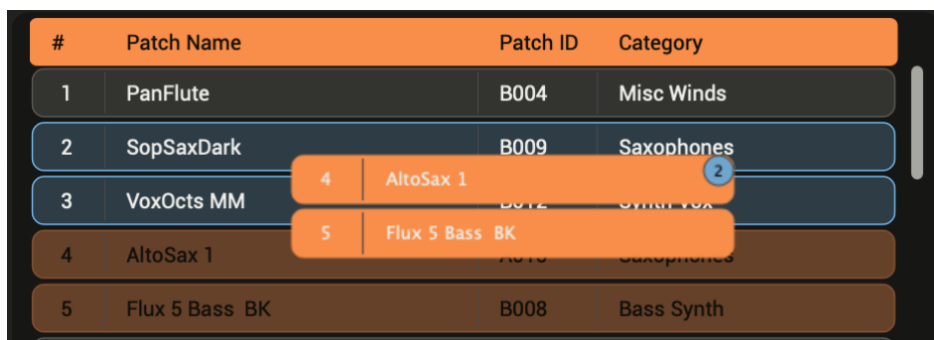
After making a selection, click the Select button to approve the chosen slot or click Cancel to return to the Edit List window. If you started the process from the Patch Manager tab you'll be taken back to the patch bank list instead.

Note that the same patch can be placed in multiple slots in the Favorites bank by repeating the process. When you're done, click Stop Editing to return to the Favorites tab.

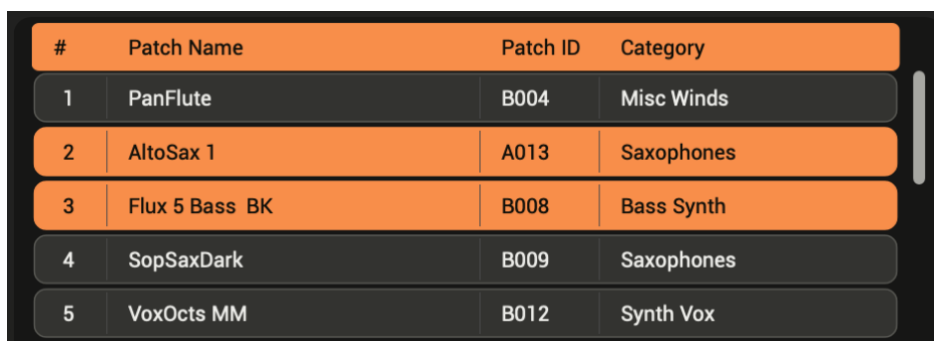
Reorder Favorites list

If the set list changes for a gig, you may want to reorganize the Favorites list to match the new order. Here's how:

1. Assuming you're already on the Favorites tab, click Edit List.
2. Click-drag one or more adjacent patches to the new location(s).



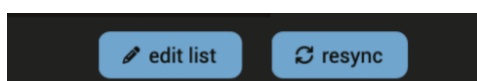
3. Drop the patches on the new location, and they will swap slots with the targeted patches.



When you're done, click Stop Editing to return to the Favorites tab.

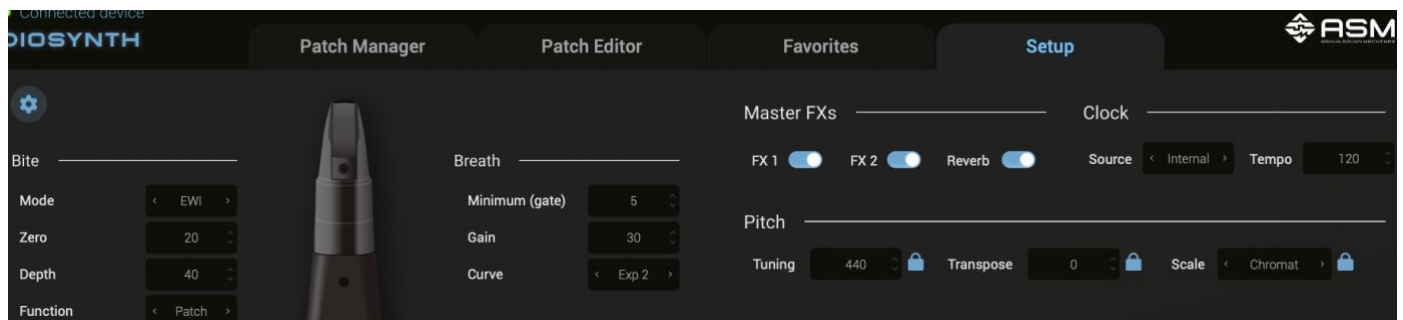
Resync

Use **Resync** to update the Favorites list in Diosynth Manager if you made changes inside the unit while it was connected to Diosynth Manager. This keeps the lists in sync in Diosynth and Diosynth Manager.



Setup

The Setup page is home to the Global parameters. These are settings that affect every Diosynth patch, except for the ones that are set to the Patch option. In that case, the behavior of that control can be different for every patch.



Bite

The bite sensor can detect the strength of your bite on the Diosynth mouthpiece. You can assign different functions to it per patch or set it to bend the pitch on every patch.

Parameter	Range	Description
Mode	Off, Sax, Loose, EWI	Selects bite sensor response mode.
Zero	0–127	The point at which the bite sensor can produce modulation data.
Depth	0–127	Sets the pitch bend width.
Function	Off, Patch, PB (pitch bend)	Per-patch or global Pitch Bend for all patches. Off = no bite sensor response.

Mode

The bite sensor can be used for pitch bend and vibrato effects. There are four modes:

- *Off*: No modulation data is sent from the bite sensor.
- *Sax*: Simulates the tight embouchure required for a saxophone or clarinet. By dropping your jaw, you can drop the pitch and bend the note back up to zero. The modulation effect only goes negative.
- *Loose*: This simulates the looser embouchure required for a recorder or fipple-based instrument. By biting on the reed, you can bend the pitch upward. The modulation effect only goes positive.
- *EWI*: This is the default setting. Any bite movement creates an effect of the pitch going positive or negative, and it will automatically return to zero. In this mode you cannot bend the pitch, but it can generate a very controllable vibrato.

Zero

This sets the amount of dead range before the bite sensor will respond. At 0 it will output any change that is sensed; at 127 it will only start to output modulation data at the very end of the movement range. The default value is 20.

Depth

This determines the width of the bite sensor effect. The range is 0–127; the default is 40. Higher numbers mean a wider pitch bend range.

Function

The bite function is set to Patch by default, which means it can respond differently on every patch. But you can set it so it bends the pitch on every patch (PB), or you can disable it entirely (Off).

Assign buttons

The Assign buttons can be used in several ways, but perhaps the most practical use is to dedicate one button to a per-patch function while the other two are configured to select adjacent patches or Favorites (one moves forward through the bank or Favorites, and the other moves backward).

All 3 Assign buttons have the same options, so they're only listed once here. But the information applies equally to each one. Remember, if you want the buttons to be able to behave differently for every patch, select the Patch option.

Mode

Parameter	Range	Description
Mode	Momentary, Latch	Decides if the button will toggle its function or if it needs to be held down.
Function	Off, Patch, Next Patch, Prev Patch, Next Favorite, Prev Favorite, Glide	Defines the button behavior.

Function

- *Patch*: Assign button behavior can be different for every patch, as set in the Patch Editor on the [Patch](#) tab.
- *Next Patch / Prev Patch*: The button(s) can select patches in banks A-F.
- *Next Favorite / Prev Favorite*: The button(s) will select patches only inside the Favorites bank.

Joystick

This determines whether the joystick responds to the Global or patch-specific settings, or none. For maximum flexibility, the default setting is Global.

Parameter	Range	Description
Move <- Move ->	Off, Patch, Vibrato, Growl, Glide Rate, Tone	Global setting options for Joystick Left and Right. The Patch setting enables per-patch independence.
PB Mode	Off, Global, Patch	Sets Pitch Bend response for all patches (Global), per-patch (Patch), or disable it.
PB Up [1]	0–1200	Pitch Bend range for Joystick Up [1]
PB Down [1]	0–1200	Pitch Bend range for Joystick Down[1]

[1] Default range is 100 cents, or one half-step. The maximum range is 1200 cents, which is a full octave.

Breath

These parameters let you tailor the way Diosynth responds to note dynamics.

Parameter	Range	Description
Minimum (gate)	0–127	Minimum breath force level
Gain	0–127	Dynamic range above Minimum (gate)
Curve	Exp 1–5, Linear, S-curve, Log 1–5	Options for breath force curve response

Minimum (gate)

This sets the minimum breath force needed to make Diosynth produce sound. The default value is 5, which is fine for most users. But if you normally play with a hard reed and more air pressure, you might want to raise the value.

Gain

This controls the amount of air required to go from minimum to maximum levels. Here's how the values work:

- Settings from 0–19 will not let you hit the full value of 127.
- A value of 20 provides the widest dynamic range.
- Values from 21–127 add gain to the breath amplitude, making it easier to reach full level. This will also reduce the available dynamic range.

Curve

This selects the shape of the breath force curve. The most popular settings are Linear, Exponential 1, Exponential 2, or Exponential 3. You may want to try them all until you find the one that offers you the best response.

Vibrato

Parameter	Range	Description
Rate	0.30–10.00 Hz	Global Vibrato rate
Amount	0.0–12.0	Global Vibrato depth

Rate

This determines the global vibrato rate and will apply to all patches when Vibrato is the destination for any of the assignable functions. The range is 0.30–10 Hz (1 Hz = 1 cycle per second; the default value is 2.7 Hz).

Amount

This sets the global vibrato depth. The range is 0–12.0 semitones (1 octave); the default is 1.0.

Utility settings

Parameter	Range	Description
Key Delay	0–64	Key response time buffer
Fingering	Sax, Flute, Recorder, Trumpet	Instrument note fingering method
Octave range	+/- 2 octaves, +/- 3 octaves	Sets response of Octave buttons
Gyroscope	Off, Patch, Vibrato, Growl, Glide, Glide Rate, Tone	Determines the behavior of the Gyro sensor for the current patch or all patches. You can also disable it completely.

Key delay

This lets you decide how quickly the keys will respond to your playing. It can be used to slow down the key response and limit the generation of errant notes. Higher values are more lenient toward inconsistent fingering technique, with the tradeoff being that faster musical passages might not be able to be played. Lower ranges are less forgiving but will allow faster playing.

Fingering

This lets you select one of four fingering methods. If you're used to playing the saxophone, select the Sax setting. Likewise with the Flute, Recorder, or Trumpet settings.

Octave range

This determines the way the Octave buttons respond. With the

- +/- 2 octaves: Button 1 shifts +/- 1 octave and button 2 shifts +/- 2 octaves. If you press both buttons at the same time, the pitch still only shifts by 2 octaves.
- +/- 3 octaves: Button 1 = +/- 1 octave, buttons 1+2 = +/- 2 octaves, button 2 = +/- 3 octaves.

Gyroscope

Diosynth has a built-in gyro control that can detect the motion of the instrument and will activate an assigned function. If the Patch option is selected, the response can be defined by the current patch. Otherwise, the other settings (Off, Vibrato, Growl, etc.) will be in effect for all patches.

Pressure pads

The pressure pads can fade in modulation based on how hard they are pressed. When the Function is set to Patch, the destinations are determined based on what has been programmed for the selected patch.

Parameter	Range	Description
Mode	Latch, Momentary	Decides if the pad will hold the value or if it needs to be held down.
Sense	Off, 1–10	Response range of the selected pad
Function	Off, Patch, Vibrato, Growl, Glide [1], Glide Rate	Sets the behavior of the selected pressure pad for the current patch or all patches. A setting of Off disables the pad.

[1] The Glide option is binary; it toggles Glide on and off. There are no intermediate settings.

Mode

This determines the behavior of the selected pressure pad. If the assigned destination is a modulation parameter (e.g., Growl), the Latch option holds the last value until the pad is pushed again. When Mode = Momentary, modulation input returns to zero when the pad is released.

Sense

This determines the range of the selected pressure pad when assigned to modulation parameters. Higher values will create a larger effect, i.e., more Growl or Vibrato. The range is 1–10, with a default value of 6. Adjust to taste!

Function

- *Off*: The selected pad generates no modulation data.
- *Patch*: This setting allows per-patch assignment of the selected pressure pad.
- *Vibrato*: Assigns the selected pad to the global [Vibrato](#) function.
- *Growl*: Enables the selected pad to introduce Growl into any patch.
- *Glide*: This function is an on/off toggle, not a pressure-sensitive parameter.
- *Glide Rate*: Allows gradual adjustment of the Glide rate within the Sense range.

Master FX

These are the Global FX bypass toggles. If you need to disable the Master Reverb for all patches, for example, set the Reverb switch to Off.

Note: These parameters do not override the Insert FX. That must be done within each patch by setting IFX Type to Bypass for each Part on the [Patch Editor](#) page.

Parameter	Range	Description
FX 1	On, Off	Toggle MFX 1 on/off for all patches
FX 2	On, Off	Toggle MFX 2 on/off for all patches
Reverb	On, Off	Toggle Master Reverb on/off for all patches

You can view the list of all FX types and their parameters [here](#).

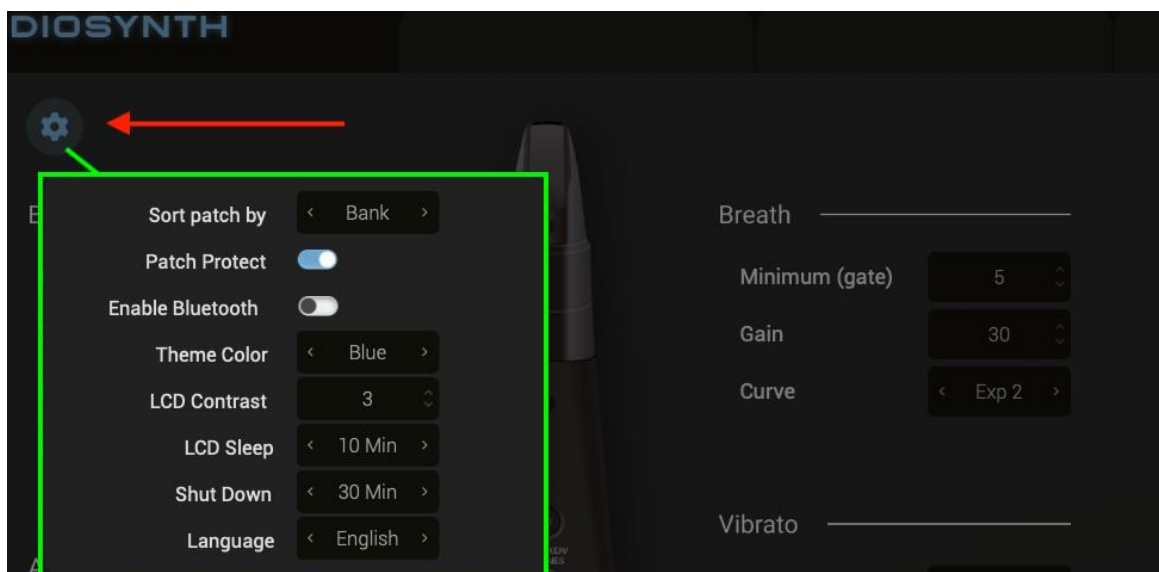
Clock

This decides the tempo source for anything on the Diosynth that has BPM set to On: Delay FX, LFOs, etc.

Parameter	Range	Description
Source	Internal, USB MIDI, DIN MIDI	Select the tempo source
Tempo	30–240 BPM, Ext	If Clock Source ≠ Internal, Ext is shown. Tempo must be changed from your computer (USB MIDI) or the external device (DIN MIDI).

The Gear icon

The Setup window has a gear icon in the left corner. It has some essential settings that you might only set once, such as the language and the theme color. But you might change the Sort Patch By option more frequently.



Parameter	Range	Description
Sort Patch by	Bank, Category	Changes the way patches are accessed on the unit.
Patch Protect [1]	On, Off	Toggles patch protect feature on and off.
Enable Bluetooth	On, Off	Toggles Bluetooth circuit on and off.
Theme Color	Off, Red, Orange, Yellow, Green, Indigo, Blue, Violet, White	Selects the color of the light bar on the front of the unit.
LCD Contrast	1–5	Sets the brilliance of the display on the unit to allow for various lighting conditions.
LCD Sleep	Off, 10 or 30 seconds, 1, 5, 10, or 30 minutes	Amount of time until the display goes dark
Shut down	Off, 5, 10, 15, or 30 minutes	Amount of time until the unit powers down
Language	English, Chinese	Set according to preference.

[1] This determines if a patch can be saved from within the unit. This app can still save an edited patch to Diosynth.

Pitch Setup

Parameter	Range	Description
Tuning	380–500 Hz	Fine tune adjustment, for the whole Diosynth or on a per-patch basis.
Transpose	+/- 11 semitones	Chromatic adjustment, either globally or per patch.
Scale	Custom user scale + 38 preset scales + 32 Microtuning scales	Select the scale for all patches, or you can let each patch have its own scale.

Tuning

When this is set to Global (locked), you can tune all Diosynth patches sharp or flat. This comes in handy when you need to match the pitch of an older piano, for example, or a song that was recorded on older technology, etc.

The pitch reference is A4, the one above middle C on a piano. The default pitch of A4 is 440 Hz (cycles per second), but you can tune it up or down by 60 Hz.

If the lock icon is unlocked, that's the per-patch setting. Tuning can be different for every patch.

Transpose

With this set to Global (locked), you can transpose all Diosynth patches up or down by 11 half-steps. You might need to do this if someone puts an Eb chart in front of you, for example, and you're playing a Bb instrument at the time.

When you need to shift the range by an octave or more, that's always done in the [Pitch section](#) of the Patch Editor.

If you prefer to change the transposition on a per-patch basis, unlock this setting.

Scale

When this is set to Global (locked), you can force all Diosynth patches to conform to whatever scale you select here. This can be a lot of fun, and it could even help you perform entirely in the Phrygian mode, for example.

One of the options is User, and when that is selected a blue pencil icon appears. You can click that icon to open the Scale Edit window and make a custom scale. See [Create a User Scale](#) to learn how to do that.

Click this link if you want to see the list of available [Diosynth Scales](#).

Global/Patch lock icons

Click the lock icon to toggle this setting for any of these three parameters. When the lock is closed, this means the parameter is set to Global; the value you set here will override that setting for all patches.

Audio

Diosynth has a full complement of audio input/output features. You can send or receive audio via USB, and you can receive audio from an external Bluetooth device. The audio output of the Diosynth can be switched from stereo to mono or vice versa, so you can interface with just about any sort of audio environment.

Parameter	Range	Description
USB In	0–127	Controls the level of incoming USB audio. Default = 127.
USB Out	0–127	Controls the level of outgoing USB audio. Default = 100.
Bluetooth In	0–127	Controls the level of incoming Bluetooth audio. Default = 127.
Output	Mono, Stereo	Toggles Diosynth audio output to mono or stereo (the default).

MIDI Settings

There's a grey section on the right side of the Setup window that we used to corral all the MIDI settings into one place. Some are on/off toggles; others have anywhere from 6 to 100+ settings. We'll break them all down in the following pages.

Binary settings

Parameter	Description
MIDI Enable	When set to ON, Diosynth can send & receive MIDI. When set to OFF, it can do neither.
Local Off/On	Disconnects Diosynth hardware from its sound engine. Used with a DAW to prevent MIDI loop.
Program Change Send	Toggles the ability of Diosynth to transmit Bank Select & Program Change messages
Program Change Receive	Toggles the ability of Diosynth to receive Bank Select & Program Change messages

MIDI Enable

When MIDI Enable is On, MIDI can be sent and received. When it's Off, Diosynth won't send MIDI data or respond to it.

Local Off/On

This one needs a bit of explanation.

The Local Off/On setting determines whether Diosynth will produce sound when played from the instrument's own breath and key controls (i.e., locally). This feature is needed to prevent MIDI feedback loops, which is what happens when a MIDI instrument like Diosynth is being fed the same data on its MIDI input that it is sending to the MIDI output.

For example, if you are playing notes into a DAW via the MIDI Out and the DAW is connected to Diosynth through the MIDI In, Diosynth will end up playing the same notes twice (once locally and once via MIDI), which can sound terrible. Turning Local Off prevents this from happening.

Important notes:

1. If you play Diosynth and don't hear any sound, check the Local On/Off setting.
2. Diosynth saves the changes you make in the Settings menu when you shut down. If you set Local to Off while working with a DAW, power down, and power up again, Local will still be set to Off.

Program Change Send/Receive

Toggle these settings to enable or disable the selection of patches over MIDI.

If Send is Off but Receive is On, Diosynth will not send Program Change/Bank Select messages over MIDI but can still receive them.

Conversely, if Send is On but Receive is Off, Diosynth will send Program Change/Bank Select messages over MIDI but will ignore them when received.

Bank Select and Program Change messages are sent in the following format:

- Bank Select MSB: MIDI CC 0, Value = 0 (fixed)
- Bank Select LSB: MIDI CC 32, Values = 0-5 (Banks A-F)
- Program Change values = 0-127

MIDI Channels

When MIDI Enable is set to Off, no MIDI data can be sent or received by Diosynth. But when MIDI Enable is set to On, everything the unit can do over MIDI becomes possible.

MIDI In channel

This sets the MIDI channel on which Diosynth receives MIDI information. If you are using Diosynth with an external MIDI device or a computer-based DAW, Diosynth must be set to receive on the same MIDI channel (1–16) as that device or DAW track. The default setting (Omni, i.e. "all") enables Diosynth to receive incoming MIDI information on any MIDI channel.

MIDI Out Channel

This sets the MIDI channel on which Diosynth sends MIDI information. If Diosynth is controlling an external device or you want to record its MIDI output to a track on your DAW, the MIDI Out channel must match that of the receiving device (unless the receive channel on that device is set to Omni).

The default MIDI Out Channel setting is channel 1. Omni is not an available setting for the MIDI Out channel.

Joystick

This determines whether the Joystick left/right motions will send MIDI data, and which MIDI Control number(s) they will send. The defaults are MIDI CC 21 and 22, respectively, but either can be configured as follows:

- Off (send nothing)
- Breath (MIDI CC 2)
- Aftertouch
- Volume (MIDI CC 7)
- Pitchbend +
- Pitchbend –
- MIDI CC 1–127

The left and right motions can be set independently. For example, you could move the Joystick to the left and bend the pitch down on an external device, and move the Joystick to the right to send Aftertouch, etc.

Assign buttons out

Each of the three Assign buttons can be configured to send the following types of data.

Parameter	Range	Description
MIDI CC [1]	1–127	The only values sent are 127 and 0. No intermediate values are sent.
Program Change	0–127	The button can send a specific program change number.

[1] MIDI CC 0 is not an option; it is used for Bank Select MSB. Diosynth ignores MIDI CC 0 values above 0.

Keep in mind that the Assign buttons have two modes of operation: Latch and Momentary. This changes how they operate when sending a MIDI CC number.

- When Mode = Momentary, press down to send a value of 127, release button to send a value of 0.
- When Mode = Latch, it's more like "latch and release".
 - Pressing the button sends a value of 127. Release it and the value of 127 is retained (i.e., latched).
 - Press the button again to send a value of 0. Release the button and the value of 0 does not change.

Pressure pads

This determines whether the selected pressure pad will send MIDI data, and which MIDI Control number it will send. The Pad 1 / Pad 2 defaults are MIDI CC 25 and 26, respectively, but either can be configured as follows:

- Off (send nothing)
- Breath (MIDI CC 2)
- Aftertouch
- Volume (MIDI CC 7)
- Pitchbend +
- Pitchbend –
- MIDI CC 1–127

As pressure on the selected pad increases, the value of the assigned MIDI CC also increases. Again, MIDI CC 0 is not an option; it is used for Bank Select MSB. Diosynth ignores MIDI CC 0 values above 0.

Transmit

These three parameters help configure Diosynth for maximum control of external MIDI devices.

Velocity

- ON (default)
- Fixed values: 60, 80, 100, 110, 127

Bite

- Off (send nothing)
- Pitch bend (default)
- Mod wheel (MIDI CC 1)
- MIDI CC 1–127

Gyro

- Off (send nothing)
- Breath (MIDI CC 2)
- Aftertouch
- Volume (MIDI CC 7)
- MIDI CC 1–127

The default MIDI CC setting for the Gyro sensor is CC 27.

Breath

The Breath sensor can send two different sets of MIDI data at the same time. The options are the same for each setting (Out 1, Out 2):

- Off (send nothing)
- Breath (MIDI CC 2)
- Aftertouch
- Volume (MIDI CC 7)
- Expression (MIDI CC 11)
- Mod wheel (MIDI CC 1)

- MIDI CC 1–127

The default for Out 1 is Breath (MIDI CC 2); for Out 2 the default is Aftertouch.

Effects List

MFx/IFx

Below is a list of all the Master FX and Insert FX, with brief descriptions and a list of the parameter controls. All Master FX have In Level and Out Level controls, so those are not listed in the following chart.

Effect Type	Name	Description	Effect Type	Name	Description
Reverb	Room reverb	Small room-type reverb	Overdrive	Classic OD	Classic mild distortion effect
	Hall 1 reverb	Large hall reverb		Overdrive	Strong distortion effect
	Hall 2 reverb	Large hall reverb, decays more slowly than Hall 1	Amp Simulation	AMP 1	Amp simulator, cabinet 1
	Real reverb	Acoustic-space type reverb		AMP 2	Amp simulator, cabinet 2
Delay	Tempo Delay	Tempo-synced delay	Distortion	Clas Metal	Classic pedal distortion effect
	Tempo Echo	Tempo-synced delay where the delayed signal tone becomes darker over time		Clas Hard	Classic pedal distortion effect, less drive than Metal effect
	Cross Delay	Stereo delay		Hard Dist	Hard rock distortion effect
Pitch Effects	Chorus 1	Classic chorus effect, deeper than Chorus 2		Metal Dist	Heavy metal distortion effect
	Flanger	Classic flanger effect	Equalizer	EQ	EQ preset with “flat” settings
	Chorus 2	Classic chorus effect, more subtle than Chorus 1		EQ Hi-Fi	EQ preset with reduced low-mid frequencies
	Ensemble	Classic ensemble effect, with more harmonic content than Chorus 1 or 2		EQ Rock	EQ preset with enhanced low and high frequencies
	Dual Rotary	Stereo rotary speaker effect	Compressor / Limiter	Comp	Compressor preset with neutral settings
	Phaser	Classic phaser effect		Comp Standard	Compressor preset with gentle settings
	Tempo Phaser	Tempo-synced phaser effect		Limiter	Limiter effect with extreme compression
				Comp Attack	Compressor preset to reduce attack transients
Vibrato / Tremolo	Vibrato	Classic vibrato effect	Wah-wah	AutoWah	Auto wah-wah effect
	ClS Tremolo	Classic tremolo effect		BPMAutoWah	Tempo-synced autowah effect
Panning	AutoPan	Stereo panning effect			

Master Reverb

Below is a list of all the Master Reverb presets, with a list of the parameter settings for each. Those parameters can be adjusted within the ranges listed below and saved with each patch.

The Master Reverb also has In Level and Out Level controls; those are not listed in the following chart.

Parameter (Range)	Hi Cutoff (Thru, 20 Hz – 8.00 kHz)	Lo Cutoff (Thru, 1.00 kHz – 22.0 kHz)	Pre Delay (0 – 200 ms)	Time (10 – 30,000 ms)
Standard	60 Hz	6.33 kHz	47 ms	3290 ms
Hall	131 Hz	2.78 kHz	44 ms	2980 ms
Room	20 Hz	14.8 kHz	25 ms	3940 ms
Church	305 Hz	19.7 kHz	0 ms	3940 ms

Diosynth Waveforms

These are the synthesizer waveforms available for Oscillators 1 and 2.

Group	Waveforms	Group	Waveforms
Basic	Sine, Triangle, TriSaw, Saw, Square, Silence	Particl	Particl 1-3
Pulse	Pulse 1-6	Vokz	Vokz 1-6
Horizon	Horizon 1-8	Flux	Flux 1-5
SyncLav	SyncLav 1-5	Alweg	Alweg 1-8
Esquire	Esquire 1-4	Tronic	Tronic 1-6
ChriMey	ChriMey 1-6	Interval	Interval 1-6
Spect A	Spect A 1-7	Bobanab	Bobanab 1-4
Spect X	Spect X 1-7	Melotic	Melotic 1-7
Klangor	Klangor 1-5	Cluster	Cluster 1-8
Induct	Induct 1-3	Micoten	Micoten 1-5
Scorpio	Scorpio 1-9	Orland	Orland 1-8
Belview	Belview 1-5	Neuton	Neuton 1-7
Chendom	Chendom 1-8	Xfer	Xfer 1-7
Glefan	Glefan 1-7	Resyn	Resyn 1-4
Sqarbel	Sqarbel 1-2	Sano	Sano 1-4
Obob	Obob 1-3	SquRoo	SquRoo 1-15
Ingvay	Ingvay 1-3	Harmon	Harmon 1-23

Diosynth Sampled Instruments

These are the instruments available for the Sample Engine and the Acoustics section.

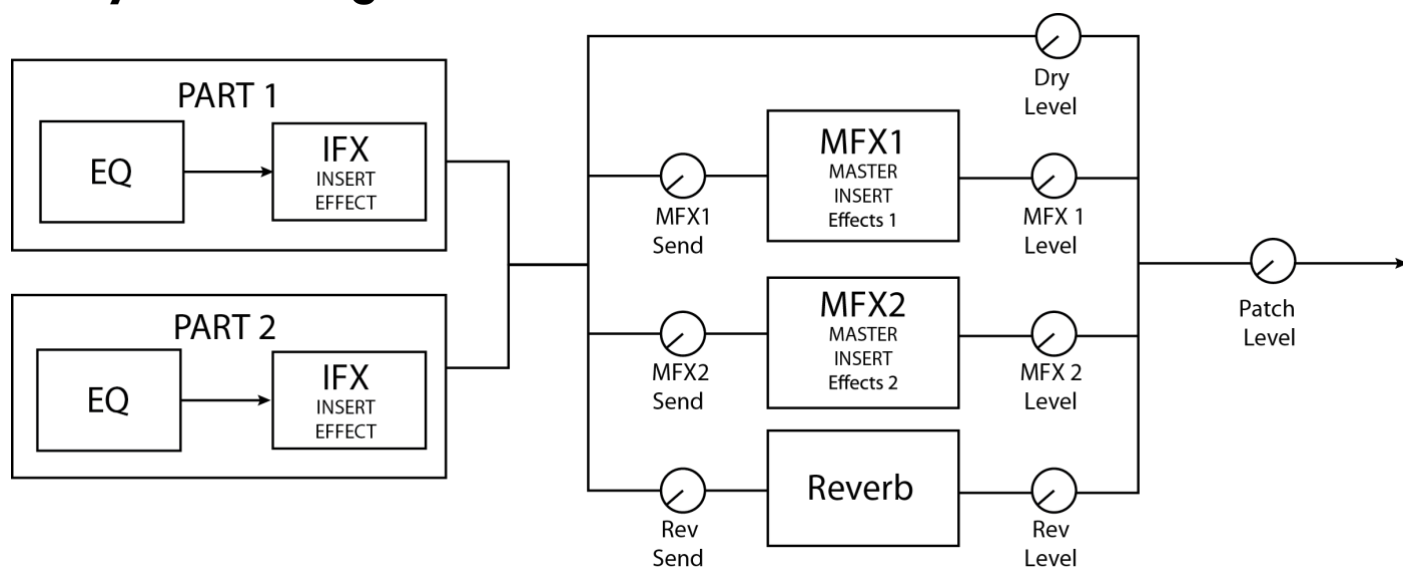
#	Saxophones	#	Clarinets	#	Chinese Winds
1	Soprano Sax BW Velocity	57	Bb Clarinet	105	Bang Di
2	Soprano Sax BW Rock	58	Eb Clarinet	106	Bang Di With Yi Yin
3	Soprano Sax BW Ballad	59	Bass Clarinet	107	Qu Di
4	Soprano Sax BW Vib Velocity	60	Contra Alto Clarinet	108	Qu Di With Yi Yin
5	Soprano Sax BW Vib Rock	–	Whistles	109	Ba Wu
6	Soprano Sax BW Vib Ballad	61	Llama Whistle	110	Ba Wu Qi Chan Yin
7	Alto Sax Rock JB	62	Tin Whistle D	111	Xiao
8	Alto Sax Cool JB	63	Tin Whistle Low D	112	Xiao With Yi Yin
9	Alto Sax Velocity JB	64	Ocarina	113	Xun
10	Alto Sax Vib JB Velocity	65	Whistle	114	Guan Zi
11	Alto Sax Vib JB Ballad	–	Recorders	115	Suo Na
12	Alto Sax Vib Fusion	66	Soprano Recorder	116	Suo Na With Chan Yin
13	Raunchy Tenor	67	Alto Recorder	117	Hu Lu Si
14	Rock Tenor Sax	68	Tenor Recorder	118	Hu Lu Si Qi Chan Yin
15	Rock Tenor Velocity	69	Bass Recorder	119	Lu Sheng 1
16	Jazz Tenor Vib CB	–	Other Winds	120	Lu Sheng 2
17	Jazz Tenor CB	70	Pan Flute		Chinese Strings
18	Ballad Tenor Sax CB	71	Shakuhachi	121	Er Hu
19	Bari Sax Rock JS	72	Blown Bottle	122	Vibrato Er Hu
20	Bari Sax Growl JS	–	Brass	123	Er Hu With Slide Up
21	Bari Sax Jazz JS	73	Trumpet	124	Ban Hu
22	Bari Sax Rock Growl	74	Vibrato Trumpet	125	Xi Pi
23	Bass Sax JB	75	Classical Trumpet	126	Er Huang With Da Yin
24	Tubax Eb	76	Mute Trumpet	127	Morin Khuur
–	Double Reeds	77	Trombone	128	Morin Khuur With Slide
25	Bassoon BW	78	Vibrato Trombone		Acoustics
26	Bassoon Vib BW	79	French Horn		
27	Contra Bassoon BW	80	Tuba	–	Key Off
28	Contra Bassoon Vib BW	81	Vibrato Tuba	1	Brass Key Off
29	Obassoon	82	Brass Section	2	Sax Key Off
30	Oboe	83	Pop Brass Section	–	Attack Noise
31	English Horn	–	Harmonicas	1	Soprano Sax Head
–	Flutes	84	Blues Harmonica	2	Flute Head
32	Jazz Flute	85	Vibrato Blues Harmonica	3	Piccolo Head
33	Hard Flute	86	Harmonica	4	Oboe Head
34	Rock Flute Velocity	–	Accordions	5	English Horn Head
35	Flutter Flute	87	Italian Musette	6	Ocarina Head
36	Flutter Flute Velocity	88	French Musette	7	Soprano Recorder Head
37	Singing Flute	89	Master Accordion	8	Alto Recorder Head
38	Singing Flute Velocity	90	Solo Accordion	9	Tenor Recorder Head
39	Alto Flute Velocity BW	91	Tango Accordion	10	Bass Recorder Head
40	Alto Flute Vib Velocity BW	–	Strings	11	Pan Flute Head
41	Alto Flute Bright BW	92	Vibrato Violin	12	Shakuhachi Head
42	Alto Flute Dark BW	93	Violin	13	Blown Bottle Head
43	Alto Flute Bright Vib BW	94	Viola	14	Whistle Head
44	Alto Flute Dark Vib BW	95	Cello	–	Breath Noise
45	Bass Flute BW	96	Vibrato Cello	1	Brass Noise
46	Bass Flute Vib BW	97	Contrabass	2	Bang Di Noise
47	Contra Alto Flute BW	98	String Ensembles	3	Xun Noise
48	Contra Alto Flute Vib BW	99	Classic Strings	4	Sax Noise
49	Contra Bass Flute	100	Tremolo Strings	5	Flute Noise
50	Contra Bass Flute Vib	101	Pizzicato Strings	–	–
51	Flutasaurus	–	Vocal	–	–
52	Flutasaurus Vib	102	Choir Oohs	–	–
53	Flute Classical	103	Choir Aahs	–	–
54	Flute Classical Vib	104	Analog Voice	–	–
55	Piccolo	–	–	–	–
56	Bamboo Flute JB	–	–	–	–

Diosynth Scales

Here are the Scales you can select per patch or globally.

User (see this page)	HarmMin	Blues	Dekany 1 3 5 11-3
Chromatic	Algerian	PentaMin	Dekany 1 3 5 7 11
Major	Gypsy	Hirajosh	Diaphnic 12 tone
Bebop Maj	Hungarian	Microtonal	Eikosany 13-11
Bebop	Ukrian	1/4 Tone	Greek Aeolic
Mixolydn	DimWhole	19 Tone	H.Partch 43 Note
HarmMaj	Locrian	31 Tone	Harmonic A 1-60
Lydian	NeapMaj	AllFarabiSynChrom	Hexany 1 3 5 9
LydnAug	NeapMin	Arabic 12 Tone	Hexany 1 3 7 11
Acoustic	Phrygian	ArchytasChromatic	Hexany 13 11 13
PentaMaj	Flamenco	ArchytasEnharmonic	India Raga
LocrMaj	Persian	BalafonSingapor	Japanese Koto
Promeths	PhryDom	BalafonW.Africa	Just Major C
Whole Tone	Enigmat	BendelerWellTempered	Just Min C
MeloMin	Tritone	Bohlen 11-tone	Meantone C
HalfDim	In	Chinese 300 B.C.	Pelog / Slendro
Aeolian	Insen	Chinese DiziFlute	Sk8board 17-65 Tune
Dorian	Augment	CrysntosByzantine	W.CarlosHarmonic

Diosynth FX diagram



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