



BATTERY 3

Operation Manual

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Users Guide written by Craig Anderton, Cliff Douse

Special thanks to the Beta Test Team, who were invaluable not just in tracking down bugs, but in making this a better product.



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Germany

NATIVE INSTRUMENTS GmbH
Schlesische Str. 28-30
D-10997 Berlin
Germany
info@native-instruments.de
www.native-instruments.de

USA

NATIVE INSTRUMENTS North America, Inc.
5631 A Hollywood Boulevard
Los Angeles, CA 90028
USA
info@native-instruments.com
www.native-instruments.com

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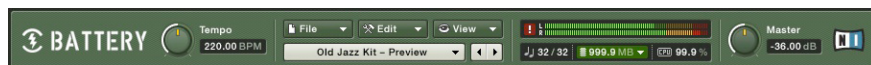
The BATTERY 3 Interface

BATTERY 3's interface is intuitive and flexible. You can view the entire interface or hide areas that aren't of interest to save screen space. BATTERY 3 also lets you select different elements of the interface in different ways, so you can use an approach that's most comfortable for you.

Although it's possible to use BATTERY 3's interface entirely in its default mode, you may want to acquaint yourself with the customizable options so that you can optimize your workflow based on your needs.

The interface is divided into three main sections:

Master Section



The Master Section has drop-down menus for File, Edit, and View functions, and another one for selecting kits.

This is where you manage and import drum kits, perform basic editing operations, check and adjust master levels, choose different interface views, set the size of the drum/sample matrix, set the tempo for imported REX/Apple/ACID loops (in stand-alone mode) and see information on polyphony, kit size, and the master level setting. Think of it as BATTERY 3's main “control panel.”

Drum/Sample Matrix



This shows a 16x8 drum/sample matrix — the maximum number of cells possible in BATTERY 3.

The Drum/Sample Matrix consists of a number of rows and columns. At the intersection of each row and column is a Cell, which represents a particular “drum” (or other sound – some people use BATTERY 3 to play back sound effects or even bass lines).

Each Cell can contain up to 128 samples. If the Cell contains multiple samples, they can be layered and/or velocity-switched (e.g., different velocity levels can trigger different drum samples to give realistic dynamics or special effects).

The matrix can contain up to 128 Cells, viewable as 4-16 columns wide. You can add or delete rows as desired so that the matrix doesn't take up more space than needed.

One reason for setting up Cells as rows and columns is that this allows for powerful Mute, Solo, Copy, Paste and Delete options. For example, not only can you mute and solo individual Cells, but also individual rows and/or columns. You can organize 12 percussion instruments as one row in a matrix that's 12 columns wide; to hear just that percussion, you would solo just that row. Or you could mute just the percussion and listen to everything else, and so on.

The Edit Pane



Note the small triangle in the upper right corner. This is a shortcut to show/hide the Edit Pane. The function key F2 will also perform the same action.

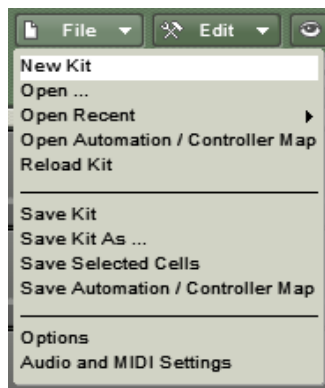
The Edit Pane works on the Cell level, just as the Master Section works on a 'global' level and the Drum Matrix works on a kit level. The Edit Pane is where you can map samples within a cell, add expressive signal processing such as modulation, filtering and dynamics, set up loop points for a sample, alter pitch, assign outputs, and much more. It is your key to drum kit customization and personalization.

The next few sections cover each element in detail.

The Master Section

File Menu: Loading Kits and Sounds

There are several ways to load complete kits and individual sounds into BATTERY 3. We'll start with the File Menu.



There are two ways to call up the File Menu: From the Menu bar (stand-alone mode only) or from the File button within the menu itself.

Here are the functions available via the File menu. When you access them from the Menu bar, you can also see the keyboard equivalents for calling up some of the functions in stand-alone mode:

New Kit (PC: Ctrl+N/ MAC: Apple+N)

Open (PC: Ctrl+O / MAC: Apple+O)

Open Recent kits

Reload Kit

Save Kit (PC: Ctrl+S / MAC: Apple+S)

Save Kit As... (PC: Ctrl+Shift+S / MAC: Apple+Shift+S)

Save Selected Cells

Save Automation/Controller Map

Options

Audio and MIDI Settings

Exit

New Kit

Use this when you want to create a new, blank kit. The Cells in the new kit will have no contents and they will use BATTERY 3's default parameter settings.

Open

When selected, a file selection box appears that recognizes all file types supported by BATTERY 3. This is a somewhat "intelligent" function. For example, if you load a kit, it will replace the existing kit with a new kit (and ask you first if this is what you want to do).

If you load a Sound Font file (which will probably contain multiple samples), your current kit will be replaced and the various samples will be mapped in cells from left to right beginning with row A.

On the other hand if you have selected a single Cell and choose a WAV or AIF file, it will load into only that Cell. If you Ctrl-click on several WAV or AIF files, it will load all of them, starting at the currently selected Cell.

The bottom line is that BATTERY 3 makes it easy to load/import a variety of sounds or kits in a very flexible way. Supported file types are:

Kontakt Instruments (*.nki)

Cells (*.cel)

Battery 1 kits (*.kit)

Battery 2 kits (*.kt2)

Battery 3 kits (*.kt3)

Wave audio (*.wav)

AIF audio (*.aif, *.aiff)

MPC samples (*.snd)

MPC Program (*.pgm)

HALion (*.fxp).

Samplecell (*.bnk)

LM4 (*.txt)

SF2 (Sound Font) container (*.sf2)

Gigasampler container (*.gig)

REX files (*.rex)

REX2 files (*.rx2)

Sound Designer II (SD2) files (*.sd2)

ACID (*.wav)
Apple Loops
AKAI S1000/S3000/S5000/S6000
Beatcreator (*.zgr)
Reaktor (*.map)
EXS24 (*.exs)

Open Recent Kits

This displays a list of your most recently used kits. It's like a "favorites" function, as you can return quickly to a kit used in a recent project.

Open Automation/Controller Map

Use this to open Automation/Controller Map settings you have created for BATTERY 3 kits.

Reload Kit

Allows you to reload an unedited version of your selected kit.

Save

This saves the current kit and overwrites the kit's previously saved version. If you Save a kit that has never been saved before, it will be treated the same way as the "Save As..." option described next.

Save As...

This saves the kit, but presents the option to specify a different file name and location. Furthermore, there are saving options:

Patch Only. This option saves Kit and Cell settings along with pointers to where samples reside on your hard disk. It references samples, but does not include them in the file, thus producing a smaller file size than if the samples were included. Checking **Absolute Sample Paths** forces BATTERY 3 to look in a specific path to find the associated samples.

Patch and Samples. Here you can choose a directory into which the samples will be saved. This is a good Save As... choice if you want a "transportable" patch, for example, when collaborating with another musician. Send the musician the patch and directory containing the samples, and it will be possible to reproduce exactly the kit and sounds you used.

The default **Save As...** option is **Patch and Samples** since this continues to be the surest way that you will always be able to load your kits and as quickly as possible, because they are saved all in one folder. If your kits are built with samples from multiple folders, then it is best to use **Absolute Sample Paths**. However, please be aware that renaming folders or moving them may result in having to relocate the used samples. In this case, please find them and then resave your kit.

Save Selected Cells

You can save one or more Cells as a .cel file. This function allows you to name the .cel file and choose its location. Hold down the shift or ctrl/ key and make your selection. When finished, use this function to save them as a .cel file.

Revert to Saved

When creating kits, it's a good idea to Save frequently (as described later) in case you “over-edit” and wish you had stayed with a previous version. This function returns the current kit to its last saved state.

Save Automation/Controller map

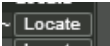
You can use this to save your Automation and Controller settings for a loaded kit.

Loading Dialogue

The loading dialogue appears when you load kits in Battery 3. It shows the file name and the file path (optional) within the loading window. If samples are not found, you will see details about them in the following window:

Name	Status	Path	Locate
KLING3.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA11z3_drm_hh.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA11z2_drm_rim.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA02z0_drm_shak.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA11z4_drm_fx.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA12z3_drm_sd.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA14z1_drm_bd.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA19z4_drm_fx.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA23z2_drm_cip.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA27z1_drm_bd.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA22z3_drm_fx.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
NA19z0_drm_cip.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
SCRATCH2.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
SN_TAMB.wav	Missing	Expected at: C:\Programme\Native Instruments\Battery 3\Library\08 - Battery 2 Kits\3 - Electronic Kits\Wip hop Sample-	Locate
Search FS Check Dupes Skip missing Abort loading Browse folder			

The following options are available:



Locate: Click on the Locate button next to a missing sample to locate the sample.



Search File System (FS): Initiates an intelligent search process on your local file system starting in your battery folder and continuing in a recursive way.

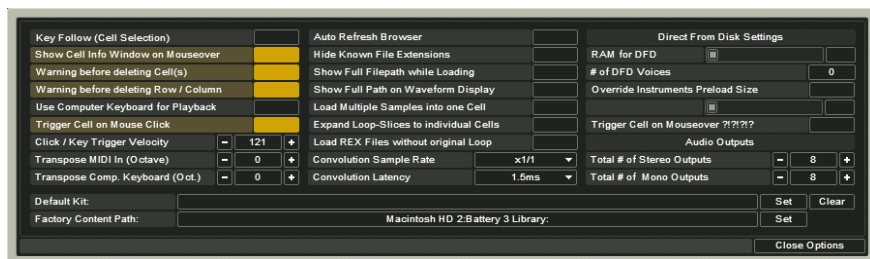
Check Dups: Allows you to check for duplicates of a sample to ensure you have the correct filepath.

Skip Missing: Skips the search and displays only the samples that have been found when the dialogue appears.

Abort Loading: Stops the loading process and returns to the previous battery status.

Browse Folder: Lets you select a folder to locate any missing samples.

Options



The Options menu lets you specify various essential default settings for BATTERY 3:

Key follow: Selects the Cell(s) for editing when a key input is received from your MIDI keyboard. Multiple held keys select multiple Cells. The selection is renewed after all the keys are released and new notes are received.

Show Cell Info Window on Mouseover: Displays an Info message when you move your mouse cursor over a Cell.

Warning on Delete Cells: Displays a warning message before you delete Cells.

Warning on Delete Rows/Columns: Displays a warning message before you delete a row or column.

Use Computer Keyboard for Playback: This lets you use your computer keyboard to trigger BATTERY 3. You can also edit the velocity value that a key will trigger.

Trigger cell on Click: Plays samples when you click on a Cell.

Trigger cell on Cursor: Selecting a different Cell via cursor keys triggers the Cell.

Click/Key Trigger Velocity: Plays the velocity layer's audio when selecting it in the Matrix.

Transpose MIDI In (Octave): Transposes the MIDI input in octaves. Use the '+' button to transpose up and the '-' button to transpose down.

Transpose Comp. Keyboard (Octave): Transposes the computer keyboard input in octaves. Use the '+' button to transpose up and the '-' button to transpose down.

Auto Refresh Browser: The Browser refreshes automatically so that new file names and position alterations are clearly visible.

Hide Known File Extensions: File extensions of the filetypes that are supported by BATTERY 3 are hidden.

Show Full Filepath while Loading: Displays the full file path of a kit as it is being loaded.

Load Multiple Samples into One Cell: Allows you to load multiple samples into one Cell.

Load REX/REX2 Without original Loop: Load slices only.

Convolution Reverb Sample Rate: Sets the sample rate of BATTERY 3's convolution reverb.

Convolution Reverb Latency: Sets the latency of BATTERY 3's convolution reverb in milliseconds.

RAM for DFD: Adjusts the amount of RAM to dedicate to the DFD process. Although samples stream from disk, it is necessary to store attacks in RAM so they are available instantly upon playback. If DFD isn't working properly, try allocating more RAM to this function.

Number of DFD Voices: Maximum number of stereo DFD voices the user will be able to play.

Override Instruments Preload Size: Ratio of the samples that will be loaded into RAM.

Total Stereo Outputs Count: Determines the number of Stereo Outputs to be used by BATTERY 3.

Total Mono Outputs Count: Determines the number of Mono Outputs to be used by BATTERY 3.

Default Kit Location: If you have a favorite kit and would like it to load automatically every time you launch Battery 3, click the Set button and select the path to your kit. Clicking the Clear button deletes this setting so Battery can be launched later without loading your kits.

Factory Content Path: Setting this directory allows quick access to the BATTERY 3 library from the “fast find” drop-down menu.

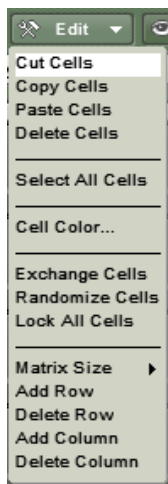
Audio and MIDI Settings

This brings up the dialog boxes for stand-alone mode where you can change SoundCard drivers, Routing, and MIDI assignments, as described earlier.

Exit/Quit

This closes BATTERY 3, and asks if you want to save your work before quitting.

Edit Menu: Modify the Cells



As with the File Menu, you can call up the Edit Menu from the menu bar (stand-alone mode only) or from within the program itself.

When you access these functions from the menu bar's Edit menu, you can also see the keyboard equivalents for calling up the following functions:

Cut (PC: Ctrl+X / MAC: Apple+X)

Copy (PC: Ctrl+C / MAC: Apple+C)

Paste (PC: Ctrl+V / MAC: Apple+V)

Delete (PC and MAC: Del)

Select All Cells (PC: Ctrl+A / MAC: Apple+A)

Exchange Cells (PC: Ctrl+E / MAC: Apple+E)

Randomize (PC: Ctrl+R / MAC: Apple+R)

Cut

Cuts the selected Cell(s).

Copy

Copies the selected Cell(s).

Paste

Pastes cell(s) into the drum / sample matrix. If multiple Cells were copied, they will paste starting at the selected Cell.

Delete

Deletes all selected Cells. Note: In the section on the drum/sample matrix, we will cover the various ways to select multiple Cells and groups of Cells for Copy, Paste, and Delete operations.

Select All Cells

Selects all of Battery 3's Cells.

Cell color

Can be used to set the color of selected Cells.

Exchange Cells

If two Cells are selected, this function switches them. For example, if the first Cell in Row A and the second Cell in Row B are selected, choosing Swap will place the contents of the first Cell in Row A into the second Cell in Row B, and the contents of the second Cell in Row B into the first Cell in Row A.

If multiple Cells are selected, then all will be swapped based on the number of Cells selected and the order in which they were selected. For example, if the first five cells of a row are called A, B, C, D, and E, you select them in that order, and then choose Swap, the new order will be E, D, C, B, A.

Randomize Cells

This places Cells at random locations within the drum matrix. Try this if you're getting into a creative rut and want to shake things up a bit!

Important: Consider saving your kit before using Randomize so that you can “Revert to Saved” if desired.

Lock All Cells

Locks all selected Cells so that their contents and parameter settings cannot be changed.

Matrix Size

Sets the size of the Drum Matrix. You can customize the Matrix size to show 4 x 4, 8 x 4, 9 x 6, 12 x 6, 16 x 8 Cells. You can also adjust the number of rows and columns by clicking the ‘+’ and ‘-’ buttons at the bottom right corner of the Matrix.

Add Row

Adds a horizontal Cell row to the Matrix.

Delete Row

Deletes a horizontal Cell row from the Matrix.

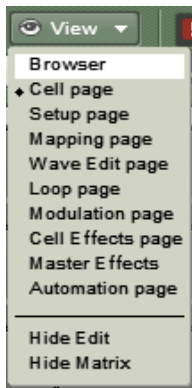
Add Column

Adds a vertical Cell column to the Matrix.

Delete Column

Deletes a vertical Cell column from the Matrix.

View Menu: Alter the Workspace



You can use the View Menu shortcuts to make quick window selections in the Edit area:

The View Menu gives shortcuts to all of these Edit windows:

Browser (F1)

Cell Page (F2)

Setup Page (F3)

Mapping Page (F4)

Wave Page (F5)

Loop Page (F6)

Modulation (F7)

Cell Effects Page (F8)

Master Effects (F9)

Automation Page (F10)

Hide Edit area (Page Up)

Hide Drum Matrix (Page Up twice)

Show Matrix/Edit Page (Page Down once or twice)

Automation Page



Please note: In plugin mode you have one table for midi cc controllers and one for host automation. You can change between them by clicking on the Midi CC/ Host Tab.

Just drag and drop the Midi CC number to the knob you want to automate. You can automate multiple parameters by dragging and dropping the same Midi CC number to another parameter on the Battery interface. The automatable parameters are marked with an hand-symbol during the dropping process.

The next controller appears then automatically in the list after a parameter has been allocated.

Here is a detailed description of the visible columns:

Column CC

Displays the Midi CC number.

You can change the midi controller itself by clicking and moving the mouse on the number.

Column Midi Label

Displays the name of the Midi controller

Column Cell

Displays the name of the affected cell

Column Parameter Name

Displays the allocated parameter.

Column From/ To

Here you can adjust the range of the knob you want to be affected by the Midi controller.

Column Soft

Incoming MIDI data is “quantized” to 128 divisions. Sweeping some parameters with this quantized signal produces a “stair-step” or “zipper” effect. The Smoothing parameter smoothes the incoming MIDI data by creating a ramp between values rather than a sudden jump. However, note that higher smoothing values also make the control less responsive.

Column Learn

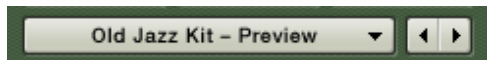
By pressing learn and moving a knob on your Midi-Keyboard you can allocate the assigned

Midi controller in the list directly to this knob.

Column Reset

By pressing the „X“ sign in the appropriate list-entry the assigned parameters are deleted beginning with the parameter you added lastly.

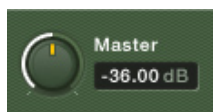
Library “Fast Find”



You can step through kits rapidly with the left and right arrows, as well as select kits from within the BATTERY 3 Library folder.

The Library Fast Find section under the File, Edit, and View menus browses the kits located in the BATTERY 3 Library folder. Click on the name for a drop-down menu of kits within the Library. You can also load the next kit in the Library by clicking on the (+) button, or the previous kit by clicking on the (-) button.

Master Volume Control



The Master Volume control and associated display field allow for precise level setting, whether in stand-alone mode or used with a host.

The Master Section volume control sets the overall level for all outputs used by the kit. The display field to the left of the control provides a precise numeric readout of the control's setting. This is handy if, for example, the mixer in your host shows that BATTERY 3 is overloading a mixer channel by 0.6dB, even though BATTERY 3's level is set to 0.0dB. You can then use this information to reduce BATTERY 3's level control to -0.7dB, thus insuring the host mixer will not distort.

Output Meter



The output meter shows the total level of the signals being produced by BATTERY 3. To avoid distortion, avoid having the meters go into the red.

Panic! Button

The red exclamation mark to the left of the output meters is there for those moments when things get a bit hectic. This cuts off all playing notes.

Data Fields



Use the data fields to check polyphony, the amount of memory required by the current kit, and the master volume level.

The data field to the right shows the CPU usage. The data field to the left indicates the amount of polyphony being used. For example, if it shows 4/32, then four out of 32 voices are being used. The voice field is editable. Click and enter the maximum polyphony by hand or drag the mouse up or down. The middle field shows how much memory the kit requires.

Purge

Purge analyzes which samples are being used in an arrangement, and removes from RAM any samples that aren't being used. Thus, BATTERY 3 can handle huge amounts of samples while exhibiting very low RAM usage. Purge is handy if you've finished a part; you can purge samples for that kit alone, thus freeing up RAM for additional overdubs. If you click on the downward arrow to the right of the kit memory size display you will be presented with access to the following functions:

Reset Markers: Deletes all 'tags' that mark samples as used.

Update Sample Pool: Unloads unused samples from RAM, and loads newly marked samples in RAM.

Purge All Samples: Unloads all samples from RAM.

Reload All Samples: Reloads all samples used in a kit. A display for the instrument shows Purge status.

The Drum/Sample Matrix

The Drum/Sample Matrix is where you assign samples to Cells, check info about Cells, mute and solo layers (rows and columns) of Cells, and copy/paste/delete individual Cells or groups of Cells. More detailed Cell editing occurs in the section Edit Pane.

Loading a kit loads samples into the matrix's Cells, and sets any Cell-related parameters to the same values as when the kit was saved.

Various View commands let you modify the Drum/Sample Matrix by adding or deleting rows, and changing the number of columns in the matrix. These functions were described in the previous section, and can be accessed from the View menu in the Master Section (as well as from the View menu option on the menu bar when in stand-alone mode).

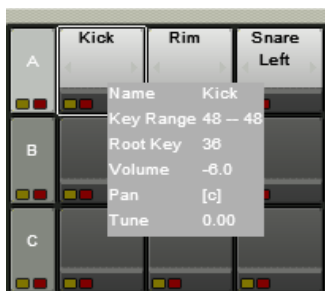
Cell Contents

Each Cell contains up to 128 samples (layered and/or velocity-split) and a set of parameters that affect the sound. These include key range (the range of notes to which the sound will respond), volume, pan, tuning, compression, modulation, etc. Although BATTERY 3 is a drum sampler, you can of course load any sample into a Cell – background vocals, sound effects, phrases, scratches, notes, whatever.

Auditioning Cells

To hear what's in a Cell, click on it with the mouse, or feed it a MIDI signal that triggers the Cell (as specified in the Edit Pane). When BATTERY 3 receives MIDI from a sequencer or other MIDI device, cells that are sounding have a blue "backlight."

Get Cell Info



Holding your cursor over a Cell reveals info concerning several parameters.

To see several crucial Cell parameter values (Name, Key Range, Root Key, Volume, Pan, and Tune) at a glance, hold your mouse's cursor anywhere over the Cell for about half a second. Active functions (i.e. loop, compressor, filter) will also be shown in this list. This is for informational purposes only; you cannot edit these parameters from this particular view. This hint can be deactivated in Options.

Copying and Moving Cells

Cell contents are freely movable among Cells. For example, suppose you have a great snare drum, but it sounds too mechanical when you trigger it repeatedly. You can copy the Cell contents to another Cell, make a few small changes to the copy (e.g., a slight pitch change), then alternate hits between the two Cells. This gives a more “humanized” effect.

Following are the procedures for manipulating Cell contents.

If you move a source Cell to a non-empty destination Cell, then the destination Cell's contents will replace the source Cell's contents – in other words, an automatic swap function. If you move a source Cell to an empty destination cell, then the source Cell becomes empty after the move is complete.

Move Cells (default): Click on the source Cell you want to move, and drag it to the destination Cell. The destination cell's key range will be used. Moving a cell to an occupied cell will swap them.

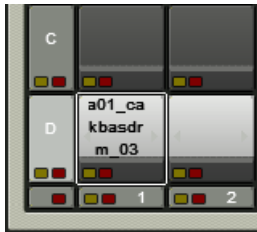
Move a Cell with key range to another Cell: Alt+drag (PC); Apple+drag (Mac) on the source Cell you want to move, and drag it to the destination Cell. This moves the cell, the key range and root key.

Copy a Cell to another Cell: Ctrl+drag (PC); Alt+drag (Mac) on the source Cell you want to copy, and drag it to the destination Cell. The destination cell's key range will be used.

Copy a Cell with key range to another Cell: Alt+Ctrl+drag (PC); Apple+Alt+drag (Mac) on the source Cell you want to copy, and drag it to the destination Cell. This copies the cell, the key range and root key.

You can access several more Cell-related functions by right-clicking (or Ctrl-clicking for Mac) on the Cell. See the section “Right-Click Cell Edits”.

Cell Solo and Mute



Each row, column, and Cell has a solo and mute button.

Each Cell, row, and column has two LEDs – yellow (solo) and red (mute).

- Click on the red LED to mute the Cell, row, or column. Click on it again to unmute.
- Click on the yellow LED to solo the Cell, row, or column. Click on it again to cancel.

The solo function is additive (not a “radio button”-type function): You can solo multiple Cells, rows, and columns. Solos can also be combined; for example, solo a row and a column. If all Cells in a row or column are muted or soloed, the row’s or column’s mute or solo LED will be lit. If a column or row contains a combination of soloed and muted Cells, then it will have no lit row or column LEDs.

Selecting and Editing Cells

Parameter-related editing operations (modulation, pan, tuning, etc.) affect ALL SELECTED Cells. For example, if you select an entire row of Cells and change tuning, all Cells within that row will have their tuning changed. As a result, BATTERY 3 includes flexible ways to select anything from a single Cell to various groups of Cells.

Selecting Cells

Select any arbitrary collection of Cells by Shift-clicking on them:

Select an individual Cell: Click on it.

Select discontinuous Cells: Ctrl-click (PC) / Apple-click (Mac) on the Cells to be selected.

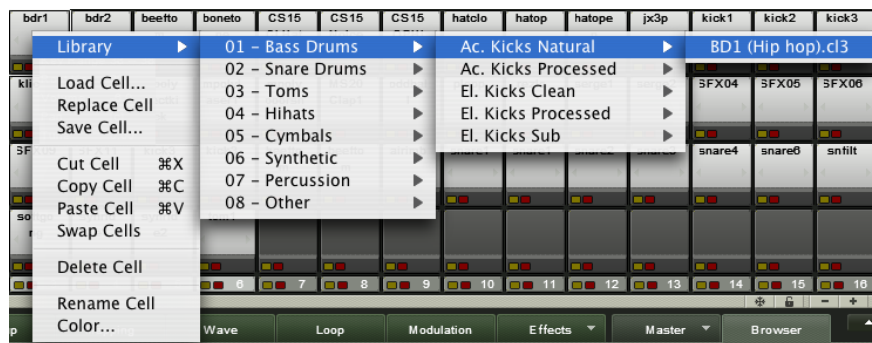
Select continuous cells (not a row/column): Shift-click the first and last cell in the range.

Select a row of Cells: Click on one of the row letters to the left of the matrix (A, B, C, etc.).

Select a column of Cells: Click on one of the column numbers on the bottom of the matrix (1, 2, 3, etc.).

Shift- or Ctrl-clicking applies to rows and columns as well as individual Cells. For example, if you Shift-click on rows A and C, all the Cells in both rows will be selected. If you Shift-click on row C and column 3, all the Cells in row C and column 3 will be selected.

Context Menu - Right-click Cell Edits



Powerful Cell edit functions are only a click away.

Right-clicking (Mac: Ctrl-clicking) on a Cell offers several editing functions:

Load Previous Cell/Sample: With multi-sampled sounds, samples are often saved in a folder and named so they can be differentiated easily (e.g., KickLowVel, KickMedVel, KickHiVel). Selecting this option loads the previous sample in the series compared to the existing sample within the Cell.

Load Next Cell/Sample: This is similar to Load Previous Sample, but loads the next sample in the series compared to any existing sample within the Cell.

The same loading functions are available as + and - in the Cell tab view. There it is called sample.

Library: Provides quick access to BATTERY 3's extensive library for easy kit editing. To make life even easier, drums are pre-arranged into different types – Kicks, Snare, Toms, Hihats, Cymbals, Synthetic, Percussion and Other.

Add Sample: Opens a dialog box where you can navigate to a sample you want to add to the Cell.

Note that if you open a kit, it will replace the existing kit.

Replace Sample: Opens a dialog box where you can navigate to a sample. If you select this, it will replace the Cell's current contents.

Save Cell: Opens up a "tree" view where you can choose a folder into which the Cell will be saved under its current name.

Cut: Cuts the Cell your clipboard.

Copy: Copies the Cell.

Paste: Pastes the Cell into the currently selected Cell.

Swap Cells: For swapping the positions of two Cells.

Delete: Deletes the Cell.

Rename Cell: For renaming the Cell.

Color: For changing the color of the Cell.

Alt-Click Sample Selection

When you click the Alt button, arrows will appear on the left and right sides of all selected Cells. You can use these arrows to 'step' through other samples or Cells.

Freeze and Padlock

The Freeze button at the bottom right of the Cell Matrix changes the edit status of the values within the Matrix Cells. When it's activated, the values within the Cells do not change when you're editing them within the cells directly.

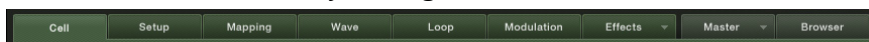
The Padlock Button locks the cell to its last displayed value. When it's activated different value types to the one that was last displayed within the cell before activating the function will not be displayed.

The Edit Pane

This is where you can take your creativity to the max by manipulating drum and other samples with anything from subtle to extreme processing. It's also a place where you can do Cell “housekeeping,” such as making MIDI trigger and controller assignments.

Edit Pane Overview

The Edit Pane can display any one of nine different windows with which you can organize samples within a Cell and process them in many different ways. Each window is selectable by clicking on a tab:



Cell: The Cell section defines a selected Cell’s basic MIDI and sample assignments, its pitch and its basic sonic characteristics.

Setup: This page provides powerful new tools specifically designed for drum playing and programming.

Mapping: The Mapping window is where you can set the minimum and maximum velocities for each sample in a selected Cell. You can also adjust the tuning, panning and root key for each sample.

Wave: This page is a conventional wave editor with the functions available on the screen. You can use it to edit drum samples within BATTERY 3 so you don’t have to export them into a separate audio editor.

Loop: This window lets you loop (repeat indefinitely) a section of a sample to produce a sustained effect when you hold down a key. Such an effect can even evolve over time.

Modulation: The Modulation window allows you to modulate your drum sound with a variety of sources including LFOs (Low Frequency Oscillators), envelopes, aftertouch, and external MIDI controllers.

Effects: The Effects page is where you can apply one or more effects to a Cell’s audio output to enhance it’s sonic richness or make it blend within a mix.

Master: The Master section has a range of high quality effects that can be applied to an entire drum mix: EQ/Filter, Compressor, Limiter, Delay, Reverb.

Browser: This page allows you to quickly browse and select files from BATTERY 3’s library folder or anywhere else on your computer.

The button in the top right hand corner of the Edit Pane area can be clicked to make the Edit Pane disappear or reappear.

Four Important Points!

- Remember that altering most of these parameters can affect everything from a single Cell to all Cells in the matrix, depending on which Cells you have selected.
- One extremely cool feature is that when you select a parameter for editing, the Info Strip towards the bottom of each Cell shows the status of that same parameter for each Cell. For example, if you tweak the Pan parameter, you'll see the current pan position for all Cells in their info strips. This makes it easy to compare settings for the various Cells.
- Most numeric fields can be edited in two ways: Double-click on the parameter value and type in a new number, or click on the field and drag up to increment the value, or down to decrement. For “fine tuning,” hold Shift while dragging.
- Double-clicking on knobs resets them to default values.

Now let's consider each section in detail.

Cell View Tab



This window provides basic Cell management with respect to MIDI, voice groups, name, and similar parameters. It also provides tuning, envelope shaping and advanced sample playback capabilities.

The Cell section defines the current Cell's basic MIDI and sample assignment functions. It also has a Tune control, alternative sample modes, and Volume and Pitch Envelope modifiers.

Cell management controls

Cell Name: Shows the Cell's currently selected name. This defaults to the name of a sample within the Cell; to rename, double-click on the name, then type in the new name.

Key Range: These two fields determine the MIDI note range that will trigger the current Cell. For example, a key range of C2-C2 means that the Cell will play only upon receiving MIDI note C2. If set to C1-E1, then C1, C#1, D1, D#1, and E1 will all trigger the Cell.

There are two ways to set the Key Range:

- Double-click on the low range and type in a new note name or numeric value. If you type in a numeric value, BATTERY 3 will automatically convert it to a “musician-friendly” MIDI note name (for example, type “60,” and the display will show C3). If necessary, do the same for the high range. Using this method does not change the root key.
- Click on the Learn button. Use a keyboard or other MIDI note generator to play first the low range note, then the high range note. After playing the second note, the display will update to show the new key range. With this method the root key will be changed to the low note. You can also use a computer's QWERTY keyboard to do this.

MIDI: This specifies whether a cell should receive data from ALL MIDI channels, or a specific MIDI channel from 1-16. Click on the down arrow and make the desired assignment.

Tracking: When activated (lit) and the Key Range exceeds one note, all samples in the current Cell will change pitch in response to the MIDI input. For example, if the key range is C1-D1 and you play D1 with track On, the pitch will be two semitones higher than if you had played C1. With Track disabled, the sample's pitch will be determined solely by its root key (as set in the Map view) and the Tune knob.

Tune: Use this knob to change the pitch of all sample layers contained in a Cell. The range is three octaves up or down, which allows for some serious sound design effects. Try sweeping this at low Hertz settings (described later). When used as a modulation destination the range is one octave up or down.

Sampler Mode

Battery uses three different modes to play back a sample. Each mode is intended to do a different job.

Sampler: When this mode is activated, **BATTERY 3** is in a “standard” digital sampler mode that stores sample data in system memory, reads it out from memory, and applies any needed pitch-shifting by resampling the audio data. The Sampler module is very efficient and draws little power from the host CPU.

Reverse: Reverses playback for all Samples contained in the selected Group. It produces the well-known “backwards tape” effect.

DFD: When this button is activated, the sample is streamed Direct From Disk instead of RAM. This is important if you have large samples but limited RAM.

Hi-Q (Hi Quality): Improves the sample interpolation when playing back pitched samples. The disadvantage of this feature is that it increases CPU load. Perfect best preserves the sample's signal properties at slow or fast playback speeds. **Low** is very CPU efficient and can be used on all drumsounds that are not altered in pitch, as the loss in quality only is most true for pitched samples. **Standard** is good for samples that are only pitched up or down a little.

Stretch Mode

Stretch Button: When this button is activated, BATTERY 3 is in 'timestretching mode'. It uses granular synthesis to alter sample speed while preserving the original pitch information.

Smooth: Adjusts the amount of granular micro-envelopes to reduce unwanted artifacts, thus altering the sonic character of the resynthesis process. Note that small values generally cause a buzzy sound.

Length (Speed): Changes the playback rate independently of pitch. The Length values are expressed as percentage: for example, 100% plays back the sound at the original speed, 200% doubles the speed, 50% halves the speed, etc. A value of 0 stops playback entirely and thus freezes the sound.

Grain: This control determines the size of the sound particles used for resynthesis.

Beat Machine Mode

Beat: When this button is activated, BATTERY 3 is in Beat Mode – it displays audio loops such as Apple Loops, REX2 files and ACID WAVE files as 'slices' which are played back at rhythmically correct times. Playing these back at a slower or faster rate slows down or speeds up the tempo respectively.

Length (Speed): The speed knob alters the sample's playback speed without altering the pitch. Clicking on the % symbol right next to the value opens a pop-up menu where you can select an appropriate rhythmic value. Once the rhythmic value is selected, the Speed control chooses a division of the chosen note.

Smooth: Adjusts the Attack and Release of a selection.

Slice Attack: Slicing a file can produce clicks at the slice point. This Slice Attack control adds an adjustable fade-in time for the slices that can minimize any clicks. Generally, you want to use the lowest value consistent with minimal clicking.

Slice Release: The Slice Release control adds an adjustable release time to each slice. Adjust by ear for the best sounding results.

Sync: This control synchronizes the Beat Machine to BATTERY 3's internal tempo or that of a host sequencer. The fraction to the right shows the beat to which the slices of the loop are synced: the numerator can be edited by value edits, while the denominator values can be edited per drop down.

Volume Envelope



The following controls work in conjunction with the Volume envelope.

On/Off: Enables/disables the envelope. When enabled, you can see the envelope shape against the waveform.

Presets: Click on this tab to access useful Volume Envelope presets.

AHD/AHDSR: These pushbuttons toggle between two envelope types: AHDSR (Attack-Hold-Decay-Sustain-Release) and AHD (Attack-Hold-Decay) envelope. Typically, the AHDSR envelope is for sustained samples, while the AHD envelope is more for “one-shot” sample playback. AHD mode disables the Sustain and Release controls.

Attack (A): The time it takes for the envelope to reach its maximum level.

Hold (H): Determines how long the envelope will hold at its maximum level. Set this to 10-30 ms to add “punch” to a signal.

Decay (D): The time it takes for the envelope to fall from the held level to the sustain level.

Sustain (S): The level that will be maintained as long as the incoming MIDI note is held.

Release (R): The time for the sustain level to return to zero after receiving a MIDI note-off (i.e., the MIDI trigger ends).

Pitch Envelope



The following controls work in conjunction with the Pitch envelope.

On/Off: Enables/disables the envelope.

Presets: Click on this tab to access useful Pitch Envelope presets.

Amount: Sets the degree to which the modulation envelope affects pitch.

D1: Edits the time for the envelope to go from its maximum level (as set by the amount control) to the level set by...

B: This is a “breakpoint” control that adjusts level. The value can be positive or negative, so the pitch can be either higher or lower than normal pitch.

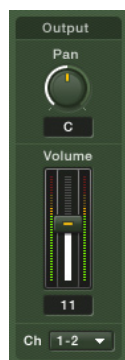
D2: This determines how long it takes for the level set by the Breakpoint control to decay back to zero again.

Important: Please note that the Waveform view area in the middle of the Cell View window displays Volume Envelope data (displayed as a shaded area within the window) and Pitch Envelope data (displayed in the form of red lines) as well as standard audio-visual data.

Start and End Point Adjust

The waveform view shows a start (S) and end (E) marker. You can move these as desired to alter the Cell start point, length or both. One application is to use the Start adjust to remove part or all of a drum’s attack. This can give a very different, more muted type of drum sound. Another common usage is to set the point 20ms or so into the sample. If you then apply negative velocity modulation to the sample (do this in the Modulation View tab), harder hits will play more of the attack, adding impact to the sound. This can make percussion sounds far more realistic.

Output



The Output module can be regarded as the Cell’s “channel strip.”

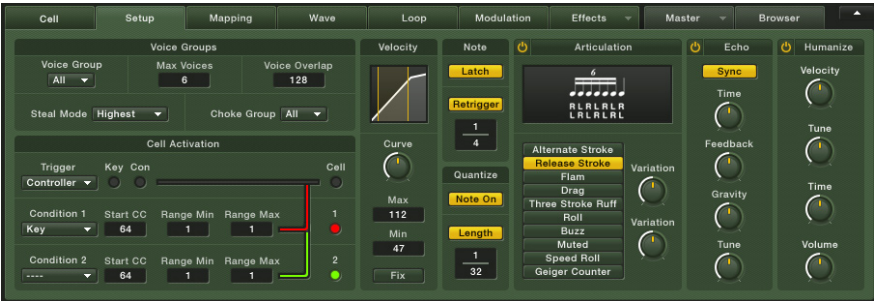
This module is extremely straightforward: It simply sets the Cell’s pan, level, and output assignment.

Pan: Places the Cell in the stereo field, from full left (100 left) to center (c) to full right (100 right).

Volume: Adjusts the Cell’s level in the overall mix, from +12dB to -8.

Channel: Chooses the output to which you want to assign the Cell. This field selects an audio interface’s physical output in stand-alone mode, or a “logical output” when used as a plug-in.

Setup Tab



The Setup page provides powerful tools specifically designed for creative drum programming! The Setup Page adds completely new features to BATTERY 3. It provides a range of tools specifically designed for drum playing and programming. You can use it to fine-tune your favorite drum sounds and/or kit, or create totally new drum sounds out of your existing library. This is a serious tool for the creation of beats – but it’s also fun to play with and will often lead you to intriguing results that you never expected from BATTERY 3.

Before we go on keep the following two characteristics of this page in mind:

- The setup page is NOT just a basic MIDI processor. It can create things that aren’t possible with other MIDI tools.
- All effects/parameters are Cell based, which means that each Cell can have totally different settings!

Let’s take a closer look at each Setup tool:

Voice Groups



Use Voice Groups to make realistic hi-hats and complex percussion sounds.

The Voice Group function allows linking the response of particular Cells to note on-off commands so that the most recently-played Cell has priority over other Cells in the group. Probably the easiest way to explain this is with some typical applications.

- With “real” drums, you cannot have an open and closed hi-hat sound at the same time. With BATTERY 3, assigning these two sounds to a group, then setting the group polyphony to 1, means that triggering the closed hi-hat will turn off the open hi-hat (and vice-versa). This is because a polyphony setting of 1 allows only one voice to play at a time, which will be the most recently-played note.
- If you have several tom sounds with long, “ringing” tails, the sound may get muddy if several tom tails sustain at the same time. Assign the toms to a group, and set polyphony to 2. Thus, only two tails can ring at the same time – the most recently- triggered tom, and the tom triggered just prior to it.
- Some musicians use BATTERY 3 to play back rhythmic loops or phrases loaded into each Cell. Assigning these to a group means that triggering a new loop will turn off any previously playing loop, which is often desirable.
- Also when using loops, you could assign a “silent” sample (no sound) to a group so that triggering this Cell turns off any loops that are playing, and silences the output.

Here are the various voice group parameters:

Voice Group: Click on the down arrow to assign a Cell to no voice group, or any of 128 voice groups. Remember that selecting this parameter will show voice group assignments in each Cell’s info strip, making it very easy to check on voice group assignments for an entire kit.

Max Voices: This sets the polyphony for each Voice Group, from 1 to 127 voices.

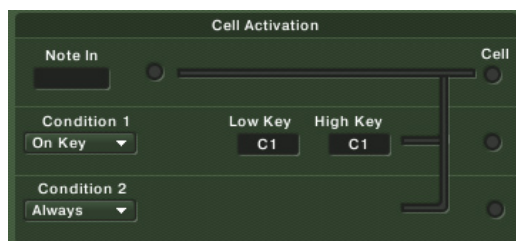
Voice Overlap Time: This allows a period of time where the voices overlap (i.e., the previously-played voice sustains for a while even after a new voice has been triggered). This prevents an overly abrupt transition between voices. Overlap time is variable from 5 milliseconds to 2.5 seconds.

Steal Mode: Select a mode that decide which notes to ‘steal’ if you run out of polyphony. You can choose from: **Kill Any** (any notes are removed), **Kill Oldest** (the earliest notes played are removed), **Kill Newest** (the last notes played are removed), **Kill Highest** (the highest notes are removed) or **Kill Lowest** (the lowest notes are removed).

Choke Group: This is an advanced programming feature that allows for more realistic mute groups to be set up. Choke groups allow you to turn off different voice groups by setting them to the same Choke Group. The advantage here is polyphonic mute grouping versus monophonic.

Let us expand on the previous voice group example. Take those same hi-hat sounds and set them to exclusive voice groups. Such that the open hi-hat is voice group 1 and the closed hi-hat is Voice Group 2. Now the open hi-hat sound can be set to more voices, 5 for example. This allows some “trails” to be heard. The second Voice Group can be set to 1 max voice. Both of these groups should now be assigned a Choke Group of 1. With this setup you obtain the desired effect of trailing drum sounds, while having a controlled polyphony (Voice Group 1) and you can still choke that group with the closed hi-hat.

Cell Activation



The Cell Activation module offers a number of useful ways to activate Cells.

This module consists of two parts. With the first row you specify how a cell is triggered. With the second and third row, you can specify certain conditions which need to be fulfilled if the cell is to be triggered.

A cell can be triggered either with a **Note On** (default setting) or a **Note Off** (a.k.a. release trigger). If you choose **Note Off**, the cell will be triggered when you release the key. The velocity will be the same as the played velocity, and the duration of the triggered note will be as long as you've held the note. This is important when combining the **Note Off** trigger with articulations like Roll or Geiger Counter.

Once a cell receives a trigger event (either from a Note On or Note Off), it still has to pass a virtual semaphore: only if **Condition 1** and **Condition 2** are fulfilled will the event be passed on and the cell triggered.

The following conditions can be defined:

Always: This is the default setting and simply means that this condition is always true.

On Key: With this function you can activate a cell with a specific key range of the MIDI-Keyboard. Select “On Key” from the menu. Two key-number fields will appear right next to the menu where you can set the specific key range which will activate the cell for incoming MIDI notes.

Check out the Multi Stick Kit for a nice application of this technique: the keys C3, D3, E3, F3, G3 and A3 activate the rows A to F. Each row refers to a specific pair of sticks.

On Controller: This function activates cells by a MIDI controller instead of a MIDI-key (as above). It allows you to activate different cells depending on the position of the Mod wheel or any other controller. Select **On Controller** from the menu and choose the controller number of the controller you want to use for activating a cell (**Start CC**). Then set the lowest (**Range Min**) and highest value (**Range Max**) in between which the cell will be activated when the modwheel is set to this position.

Check out the Dub Remix Kit. Play the open Hi-Hat (Bb1) while moving the mod wheel: when you move the mod wheel upwards (i.e. towards a controller value of 127), the Hi-Hat is closed.

Cycle Round Robin: This function can be used to cycle through different cells while hitting the same key again and again. It’s good to start with an example.

Select multiple cells and press the Learn button in the Cell tab. Then press a key twice on your MIDI keyboard. You have just assigned all these cells to one key. Now select the Setup tab and set cell activation to round robin from the drop-down menu. Each cell also gets a desired position in the cycle. Select the individual cells in order to edit the position in the round robin cycle. You can type the in number or drag the mouse upward to change it.

This is a nice technique that can result in humanized playing since you can load similar sounding samples with subtle differences in each cell and cycle through them.

Check out the Tight kit. Play E3 and watch the matrix. The twelve clap cells get cycled through.

Velocity



Customize the velocity response of a cell with the Velocity module.

This module alters incoming velocities. Here are the controls:

Curve: Use this knob to adjust the velocity curve for a Cell.

Max: Specify your maximum velocity setting.

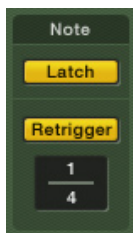
Min: Specify your minimum velocity setting.

Fix: Click on this to specify a fixed velocity in the 'Max' field.

Of course, you can also quickly select all Cells (click in the lower left corner) to apply a velocity curve to the whole kit.

Note: Sometimes drum libraries have a “special” sample at velocity = 127 for certain drum instruments. If you don’t want this sample to be triggered at all, set Max to 126. This will alter the velocity sensitivity just a little, but will make sure the sample won’t be triggered.

Note



Use this module to start and stop a sample with one key, plus more...

This module features two parameters – Latch and Retrigger:

Latch: Activate this button to “latch” incoming notes – i.e. play a note to trigger the sample, play the note again to stop it. This is quite useful for loops. Or you can take a crash cymbal and activate Latch. With the first note, you can trigger the cymbal and with the second note, you can “choke” it (you have to set up the AHDSR in order to do this).

Retrigger: When activated, the notes retrigger as long as the key is held down. The speed is determined by the numerator/denominator; if the denominator is set to 1, this equals one bar.

Note: Don't be afraid of other rhythmic values than sixteenth notes! Even if you've never heard of it, a $1/17$ note simply is a little bit faster than one $1/16$ note. A $1/20$ note is a quintuplet sixteenth, while a $1/3$ note will play three notes in the time of four quarter notes. This way of dealing with rhythms gives you maximum flexibility while still being able to adjust the tempo in an intuitive way.

Latch and Retrigger are good friends, they work very well together!

Quantize



This section quantizes notes you play to an internal or external tempo clock.

This section has two buttons which share the same tempo. Here are the Quantize controls:

Note On: Quantizes all incoming notes to the specified length. The length specifies a rhythmic grid, to which note events are quantized. The origin for this grid is always the beginning of a measure. That's why it is not possible here to have a larger numerator than the denominator, since this would exceed one measure.

If you play a note and release it **before** the rhythmic grid, the note will be triggered at the rhythmic grid, with a duration as long as you've held the note (this is comes in handy for triggering loops).

If you play a note and release it **after** the rhythmic grid, the note on will be quantized as well and the note stops when you release the key.

Length: Changes the length of all incoming notes to the specified duration (per Cell). However, only the length of the note is quantized, not the length of the triggered sample. This function is especially useful when used in combination with articulations like Three Stroke Ruff (see Articulation section). If you trigger a cell with a drum pad, the duration of your MIDI note will be rather short. So how can you trigger a Three Stroke Ruff with the pad? Easy – just set Length to around 1/4 and the complete articulation will be played, even with small note durations.

Articulation



Use Articulation to add special and authentic nuances to your drum parts.

Battery 3 has a variety of cool effects that can be automatically applied to your drum sounds. It is important to note that each articulation can sound different on different instruments. Also, since many of them alter velocity, be sure to check the velocity to volume modulation (on the Modulation page) of the selected cell.

The articulations are obtained by activating the module and clicking on any one of the following buttons:

Alternate Stroke: Produces sounds that slightly vary character. Use this for quickly creating Left/Right cells.

Release Stroke: Plays the original note and produces a second stroke when you release your MIDI key. You can adjust the tone and velocity of the release stroke. This is not the same as Note Off Trigger, since you trigger the note both with a note on and a note off.

Flam: Plays two notes in rapid succession, the first of which is a grace note.

Drag: An exaggerated 'flam-like' effect.

Three Stroke Ruff: A nice 'military-style' drum effect.

Roll: A continuous drum roll.

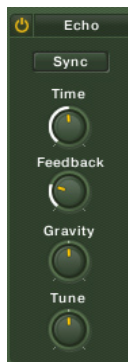
Buzz: A 'buzz-like' effect.

Muted: By quickly fading in and out, this produces a "muted" version of your drum sound. Experiment with the Attack and Decay knobs to obtain the desired results.

Speed Roll: A very fast drum roll. The duration of the triggered sample is also shortened, so even though many notes are triggered, the voice count is reasonable.

Geiger Counter: Produces a random ‘Geiger-like’ effect.

Echo



Add ‘Echo’ effects to individual Cells.

The Setup Page also features an Echo unit that can be used to create a variety of useful and tempo-syncable echo effects. Here are the controls:

Sync/Time: Set the echo time to either a tempo-based value (which is synchronized to BATTERY 3's tempo control or your host's tempo), or an absolute time-based value, which is independent of the host tempo.

With Sync activated, a fraction appears where you can specify a tempo-based value as a fraction. If the denominator is 1, this equals the duration of one bar. So if you enter 4/1, and the meter in your host is 3/4, the delay time will be 12 quarter notes. This is because a measure in 3/4 has three quarter notes, so the numerator “4” is multiplied by three. The stand-alone version of BATTERY 3 always defaults to a meter of 4/4.

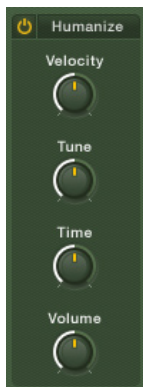
With Sync deactivated, a knob appears where you can adjust the delay time as an absolute value. The minimum is 10 milliseconds while the maximum is one second.

Feedback: Set the number of echos from 1 to 100. If you feel that adjusting this control has no effect, make sure to check the velocity to volume modulation. With a high modulation amount (near 100), the last echoes might not be audible.

Gravity: Use this control to control the gravity of the echoes. When turned clockwise, there's less gravity and the echoes get slower. When turned counter-clockwise, the echoes get faster.

Tune: Use this control to adjust the tuning of the echoes.

Humanize

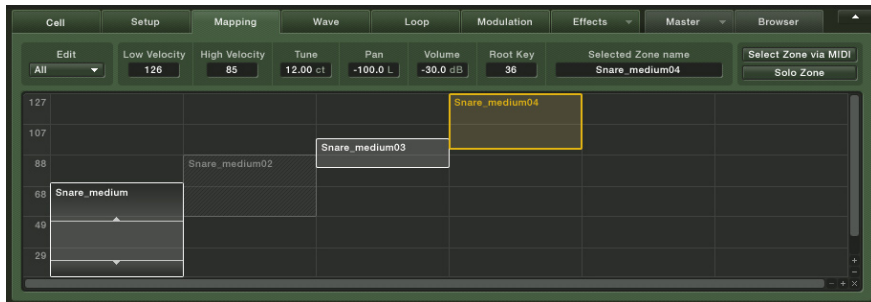


The Humanize function can be used to add a slight randomization ('humanization') to the velocity values, tuning, timing and loudness of the triggered sample. This is achieved by tweaking the **Velocity**, **Tune**, **Time** and **Volume** knobs, respectively.

When the knobs are turned to the left half, the changes are very subtle. Turned all the way to the left, the specified function is bypassed. Turning them to the right half however takes you to extreme settings.

Don't be afraid to use this function. In fact, you might want to use it often. Unless you're into machine guns, you might get so used to this feature that you will never want to do any drum programming without it.

Mapping View Tab



BATTERY 3 has sophisticated multi-sample mapping capabilities.

When you drag and drop a sample onto a Cell, a velocity zone is automatically created for that sample. Mapping is the process of determining which samples are layered or velocity-switched, and whether samples crossfade smoothly or switch abruptly as they transition to other samples. You can also adjust several important sample parameters from this view.

BATTERY 3 allows for extremely sophisticated mapping of multiple samples within a Cell – in fact, far more sophisticated than many soft samplers.

Mapping sets several characteristics for any sample(s) within a Cell:

- The minimum velocity at which it will trigger (e.g., the sample triggers only with velocities over 20).
- The maximum velocity at which it will trigger (e.g., the sample will not trigger with velocities over 110).
- If the range over which a sample triggers overlaps with any other samples, it's possible to crossfade between them to provide a smoothed, rather than stepped, transition from one sound to another.
- Independent control over Tune, Pan, Volume for each sample within a Cell. Root key, on the other hand, is for the entire cell, not the samples within it.

Map Layout

Upon selecting the Map tab, you'll see the samples included in the Cell. They show up as blocks, with the sample names toward the top of each block. You can control auditioning the samples from within the Option menu. Clicking on the zone plays back the original sample. Clicking on the velocity map's y-axis auditions the cell with its parameters. If there are more samples than can fit comfortably within the Map window, you'll see a horizontal scroll bar to scroll

past the window's visible boundaries, as well as (-) and (+) buttons to zoom in or out. A vertical scroll bar, again with (-) and (+) zoom buttons, may be visible so that you can see more detail in the vertical axis (velocity).

Zones vs. Samples

In the Map View, samples acquire additional parameters involving how they trigger and are crossfaded. Thus, the combination of the sample and the parameters defining its response is called a Zone.

Selecting Zones

As with the Drum/Sample Matrix, editing operations within the Map View apply to all selected Zones. To select multiple Zones, Shift-click on them. Selected Zones are a darker shade than non-selected Zones.

Zone Cursors

When moving your mouse over a Zone, various cursors may appear:

- Four-way (cross) cursor. Use this to click on a Zone and move it left or right or up and down.
- Two-way (up/down) arrow. This sets the lower or upper velocity limit graphically as well as the velocity fade, depending on the position of the arrow. There are other ways to set these limits, as described later. The uses for these different cursors will become clear as we cover the various mapping functions.

Edit Button

To access Zone edit operations, select the Zone(s) to be edited and click on the Edit button to choose from the following:

Cut Zone(s): Removes the Zone(s) from the Map and stores the parameter values for the Zone(s) parameter values.

Copy Zone(s): Stores the parameter values for the Zone(s).

Paste Zone(s): After a Cut or Copy operation, pastes contents into the Map.

Delete Zone(s): Removes the Zone(s) from the Map.

Replace Sample: Opens a dialog to locate the new sample.

Set Crossfade (Velocity): Draws lines that show the Crossfade velocity boundaries, and enables using the arrow cursor to set these boundaries. We will discuss crossfading in more detail shortly.

Remove Crossfade (Velocity): Removes any Crossfade velocity boundaries.

Stack Zones: Arranges Zones/Samples so that they cover the Cell's entire velocity range.

Reset Stack Zones: Undoes the Stack Zones command.

Setting Zone Upper/Lower Velocity Limits

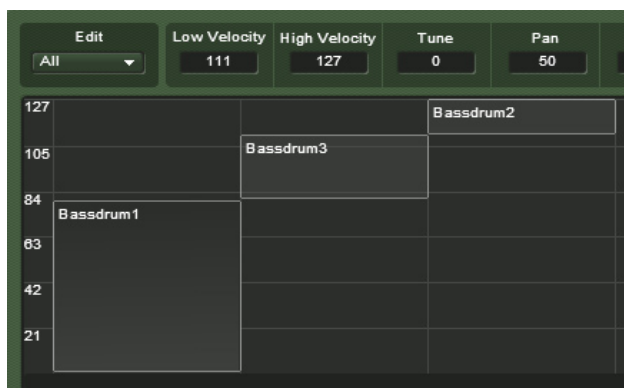
The velocity range settings determine the minimum and maximum Zone triggering ranges. For example, to have a Zone respond to all velocities, set the lowest velocity value to 1 and the highest to 127.

However, you may want to use several samples to create more realistic drum dynamics. Suppose you have three kick drum hits – one played softly, another at medium volume and the third hit hard. You might want to set up the velocities as follows:

Soft hit = 1-80

Medium hit = 81-110

Hard hit = 111-127



Three kick drum samples have been velocity-switched so that higher velocities trigger the harder-hit samples.

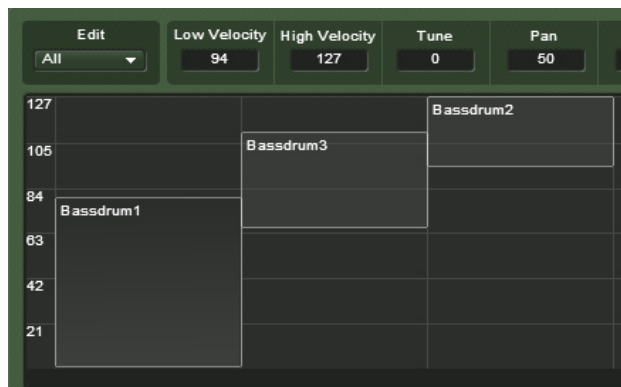
As a result, different velocities play back different samples. There are three ways to edit the velocity boundary values:

- Position the cursor over a Zone's upper or lower boundary, either to the left or right of center, until you see the up/down arrow cursor. Drag the boundary to the desired velocity value. A small readout displays the current velocity.
- Double-click on the lower or upper velocity value in the Velocity field, and enter the desired velocity value.
- Click and drag on the parameter.

Velocity Crossfading

Sometimes, simply switching between samples provides too abrupt a transition. In this case, you can crossfade between samples for a smoother transition. You do this by adding crossfade information within the sample's Zone.

To create a crossfade, first set up the velocity switching boundaries so that the sample Zones overlap. We will add crossfades where these overlaps occur.

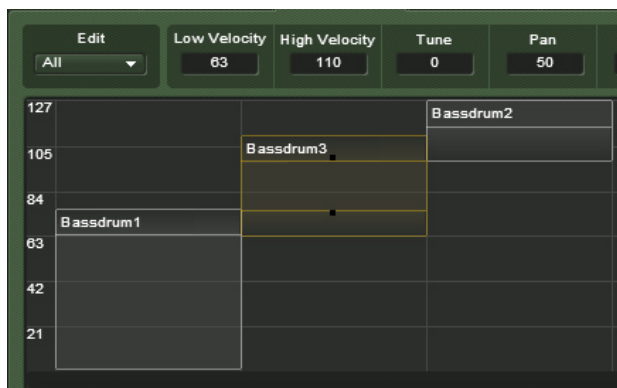


The three velocity-switched kick drum samples shown previously have had their velocity boundaries adjusted so that there is some overlap between the Zones.

We want the soft sample (on the left) to fade out as the middle sample fades in. This occurs in the Zones' overlapping range. Similarly, we want the middle sample to fade out in the overlap range while the loud sample (on the right) fades in.

To set up a velocity crossfade:

- Select the Zone where you want to add the crossfade.
- Click on the Edit down arrow and select Set Velocity Crossfades.
- There are upper and lower crossfade boundaries, as adjusted by the arrow cursor. The sample fades in from the Zone's lower velocity trigger boundary up to the lower velocity crossfade boundary, and fades out from the upper velocity crossfade boundary to the upper velocity trigger boundary. The Zone uses shading to show where crossfading occurs (i.e., the shade gets lighter as the signal fades).



Crossfades have been added in the places where the three kick drum Zones overlap. Note the middle Zone, with two black lines toward the middle of the Zone. The upper line indicates where the Zone's fade-out begins; the lower line indicates where the fade-in ends. The right-most sample has only a fade-in (it's the loudest sample, so you don't want it to fade out at the top of its range), as indicated by the black line toward the middle of the Zone. Similarly, the left-most sample only has a fade-out because it's the softest sample, so it fades in naturally. Note the line that indicates where the fade-out occurs, and how the Zone's shading gets lighter as it goes higher to indicate the fade.

Important: Please note that crossfading does not work well for all samples. Fading samples can sometimes cause phase cancellation and thus a loss of volume.

Moving Zones within a fixed velocity range

When pressing the ALT-Key a zone can be moved while maintaining its velocity range.

Other Map Edit Options

The following parameters affect any selected Zones.

Low Velocity: Sets the low velocity limit of a selected Zone.

High Velocity: Sets the high velocity limit of a selected Zone.

Tune: Changes tuning from -12 semitones up to +12 semitones.

Pan: Places the Zone from full left in the stereo field (-100) to center (0) to full right (+100)

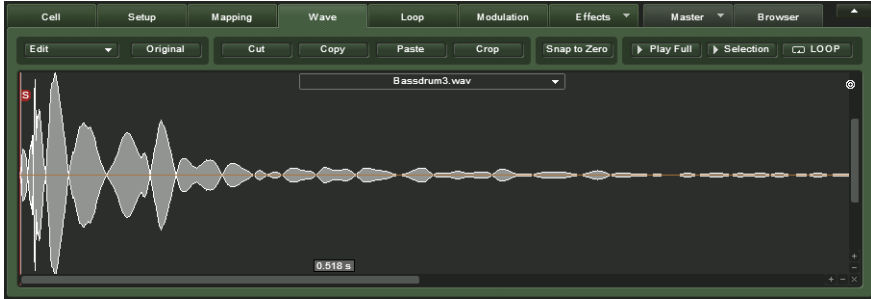
Volume: Adds a volume offset from -36 to +36.

Root Key: This field sets the original pitch (note center), which usually equals the pitch at which the sample was recorded. The root key also defines the basis for pitch shifting; for each semitone (note) that you deviate from the selected root key note, BATTERY 3 will pitch-shift the selected Zones by one semitone. For example, if a Zone's Root Key is set to C1 and you play a D1 note, the sample will be pitched 2 semitones higher. If on the other hand the Root Key is set to D1 and you play a D1 note, it will sound at its normal pitch. This field's range is the entire MIDI note range (C-2 through G8).

Select Zone via MIDI: When you play on a connected MIDI keyboard, the appropriate zone is selected depending on the velocity you play.

Solo Zone: When this button is enabled, an incoming note will only play the selected Zone. The rest of the kit will muted.

Wave Editor



Battery 3 comes with its own Wave Editor, which can be used to modify audio samples within the drum module itself.

Battery 3 has a useful Wave Editor that can be used to edit audio samples. It comes with a range of wave editing tools:

Edit

The Wave Editor has its own Edit menu which can be used to perform a variety of tasks:

Fade in: Use this to fade your sample in over a selected region.

Fade out: Use this to fade the end of your sample out over a selected region.

Silence: Removes audio information from a selected area to make it silent.

DC Removal: When this setting is activated, any DC drift present in your audio sample as a result of analog-to-digital conversion will be removed.

Reverse: Reverses the sample so it plays backwards, from the end to the beginning, when triggered.

Normalize: This adjusts the volumes of your audio files to a standard, optimum level.

Original

Click this button to undo any edits you have made to revert back to the original audio file.

Cut

Click this button to cut a selected region from the audio file.

Copy

Click this button to copy a selected region from the audio file.

Paste

Click this button to paste a piece of audio into a specified part of the audio file.

Crop

Use this tool to remove any unwanted audio before and after an audio segment.

Snap to zero

This snaps the selection to the next location where the waveform crosses the Zero line.

Play Full

Click this button to hear the whole audio file, from start to finish.

Selection

Click this button to hear playback of a selected area within the audio file.

Loop

Enabling this button will result in continuously looped playback when the Play Full and Selection buttons are clicked.

You can use the + and – buttons in the bottom right corner of the wave display to increase or decrease the amplitude or time resolution image.

Loop View Tab



You can loop up to four sections of a sample simultaneously to produce an evolving sustain effect.

The Loop View tab adds an important effect to your percussion samples: the ability to loop (repeat as many times as you like) a section of the sample. You can choose up to four sections to loop, and the number of times you want each section to loop (from 0 to 127 times). This allows BATTERY 3 to extend percussion sampling beyond mere “one-shot” sample playback into sustained sounds that can evolve over time, and be modified by envelopes to add dynamics.

Select Loop

Choose one of the four loops for editing. If a loop is on, its button will glow yellow.

Snap to Zero

When enabled, loop start and end points will “snap” to the nearest audio “zero-crossing” – the place where the audio amplitude is at zero (if the loop start and end points have different amplitudes, there will likely be a click every time the loop repeats). However, some sound designers loop at non-zero-amplitude points to create ‘buzzier’ (and therefore more jarring) loops. Experiment with snap to see which works best for you. Enabling this feature is for ALL loops.

On/Off

Enable or disable the loop with this button. Note that when the loop is enabled, the waveform display toward the right shows the loop start and end points, as well as its effect on the sample.

Play Loop (>)

Click this button when the Loop Editor is enabled and you will hear the sample looped.

Loop Mode

This button determines whether the loop is played until the volume envelope has finished the release phase (Until End) or to the exact moment the key is released (Until Release).

Count

This control determines the number of times the loop will repeat before continuing to play through the rest of the sample, and can range from zero to infinity repeats. If you set it to zero the loop repeats indefinitely as long as the key is held/sustained. The display field to the right of the control shows the number of repeats.

Start

This slider sets where the loop begins. The display field to the control's right shows the current value, expressed in samples. The control's range equals the number of samples in selected sound.

Length

This parameter determines the loop length, and therefore also sets the loop's end point. As you edit length, the waveform display will show the results of your edits (if looping is enabled). The display field to the right of the control shows the current length in samples.

Tune

Each loop can be tuned independently, from an octave down to an octave up.

X-Fade

The X-Fade function mixes some of the end of a loop in with its beginning to create a more seamless loop. The display field shows the length of the section being mixed, in samples. While not a “foolproof” way to improve a loop, it's worth trying, particularly on sustained sounds.

Important: Please note that X-fade is not possible when the sample start is 0 because a fade-in requires some sample material.

Modulation View Tab



Modulate various BATTERY 3 patch parameters with a variety of sources, such as LFOs, envelopes, aftertouch and external MIDI controllers.

The Modulation View tab allows various controllers to change the values of particular parameters within the BATTERY 3 patch. This can not only add dynamics and color to a patch, but in conjunction with a software sequencer, it can automate functions that add dramatic, real-time changes. As these modulation sources can also be MIDI controllers, it's possible to feed signals from external hardware MIDI fader boxes and manipulate the sound as a real-time performance. If you record these signals in a sequencer, you can have the best of both worlds: real-time improvisation and signal warping, recorded as automation data for later playback.

LF01 and LF02

The LFOs provide a periodic modulation effect. Their controls are:

Frequency: Varies the LFO modulation rate.

Waveform: Choose from sine, triangle, square or random.

Trigger: When enabled, the LFO always starts from the same point when the Cell using the LFO is triggered.

Sync: This syncs the frequency to the tempo of BATTERY 3 or your sequencer. In this case, the Frequency control indicates note values rather than an absolute rate.

Fade in: Sets the time over which the LFO signal fades in after triggering.

PW: The pulse width control changes the waveform's duty cycle. For example, it can continuously vary the square waveform's width. This is only available for the square wave.

Modulation Envelope

The Envelope adds a modulation signal that varies over time in a non-periodic way. The controls are:

AHD: This pushbutton selects a simple AHD (Attack-Hold-Decay) envelope. This envelope is good for “one-shot” sample playback.

AHDSR: This pushbutton selects a AHDSR (Attack-Hold-Decay-Sustain-Release) envelope. Typically, the AHDSR envelope is for samples with a significant sustain time (especially when played from a MIDI keyboard). AHD mode disables the Sustain and Release controls.

Attack (A): The time it takes for the envelope to reach its maximum level.

Curve: Sets the shape of the envelope curves from concave, to linear (0), to convex.

Hold (H): How long the envelope will hold at its maximum level. Set this to 10-30ms to add ‘punch’ to a signal.

Decay (D): The time it takes for the envelope to fall from the held level to the sustain level.

Sustain (S): The level that will be maintained as long as the incoming MIDI note is held.

Release (R): The time for the sustain level to return to zero after receiving a MIDI note-off (i.e., the MIDI trigger ends).

Modulation Router

This section provides up to 8 modulation paths, each selected by a corresponding button. An illuminated button indicates that the path has all the following elements programmed:

- A modulation source (selected from a drop-down menu).
- Slider with display to determine the amount of modulation (this can be positive or negative).
- A modulation destination that the signal will control (selected from a drop-down menu).

If there is no modulation source or modulation destination, the button will not be lit because the path does nothing.

Important: Please note that certain modulation sources cannot be routed to certain targets. These targets will not be available as an option from the drop-down menu.

Modulation Sources

Available modulation sources are:

None (no modulation)

Velocity

Modulation wheel

Pitchbend

Polyphonic Aftertouch

Mono (Channel) Aftertouch

Key Position

MIDI Controllers

Release Velocity

Release Trigger Counter

LFO1

LFO2

Modulation Envelope

Volume Envelope

Pitch Envelope

Modulation Amount Slider

This determines the “depth” of the effect on the Modulation Destination. The range is from -100% to +100%, with 0% (no effect) at the fader’s center. The display field to the right of the fader displays the current setting value. If any combination of modulations exceed an effect level of 100%, the value will be “clipped,” or limited, to the maximum value.

Modulation Destination

The Modulation Destination is the BATTERY 3 parameter that will be controlled by the Modulation Source. Available Destinations are:

None (no modulation)

Volume

Pan

Tune

Saturation

Bits

Hertz

Filter Cutoff
Filter Resonance
EQ Frequency 1
EQ Bandwidth 1
EQ Gain 1
EQ Frequency 2
EQ Bandwidth 2
EQ Gain 2
EQ Frequency 3
EQ Bandwidth 3
EQ Gain 3
LFO 1Frequency
LFO 1 Intensity Multiply
LFO 1 Intensity Add
LFO 2Frequency
LFO 2 Intensity Multiply
LFO 2 Intensity Add
Modulation Envelope Attack
Modulation Envelope Hold
Modulation Envelope Decay
Modulation Envelope Sustain
Modulation Envelope Release
Modulation Envelope Intensity Add
Modulation Envelope Intensity Multiply
Loop Start
Loop Length
Sample Start
Pitch envelope
Volume envelope

If for some reason the modulation intensity is not sufficient, it is possible to route several modulation strips to one destination.

Effects View Tab



Change a Cell's tonality or sonic characteristics with BATTERY 3's wide range of effects.

BATTERY 3 has a selection of top quality effects that can be applied to change the sonic characteristics of a Cell's output. There is another set of effects in the Master section that apply to the entire kit. Cell effects can be modulated while Master effects cannot.

Lo-fi: Decreases the quality of your audio signal by lowering the resolution or sample rate – great for producing 'dirty' sounds such as those produced by old drum machines.

Saturator: Provides expansion/compression/saturation effects for the selected Cell.

EQ/Filter: Changes the frequency characteristics of a Cell.

Compressor: Processes dynamics by reducing the difference in amplitude between soft and loud signals. Gives drum sounds more presence and 'punch'.

Inverter: Inverts the phase or pan position (reverse the left and right channels) of a signal.

Sends: Two send knobs can be used to send the Cell's output signal to BATTERY 3's master Delay and Reverb effects. The further you turn the knobs to the right, the 'wetter' the sound will be.

Each effect in the Effects section has an On/Off switch to activate and deactivate it, and an excellent set of presets ready for a wide range of applications.

Lo-fi



Mess up your pristine signal in a variety of rude ways.

The Lo-fi module decreases the quality of your audio signal by lowering the resolution or sample rate. Here are the controls:

Bits: This parameter dials in the bit resolution, from 16 bits down to 1 bit. Along the way, you can emulate the 13-bit sound of the Ensoniq EPS, 12-bit sound of the E-mu SP-12 and Akai S900, the 8-bit sound of the Ensoniq Mirage, and even go for extreme lo-fi with 6 bits and under of resolution.

Hertz: Hertz changes the sample rate, from 15.8kHz down to 1kHz. Not only can it give “clangy,” tonally metallic sounds, but when swept with modulation, produces ring modulator-type effects.

Noise: Adds ‘hiss’ to the audio signal.

Color: Determines the noise’s tonality and works like a Lowpass filter. Higher values reduce the high frequency noise.

Gain: Adjusts the module’s overall level.

Saturator



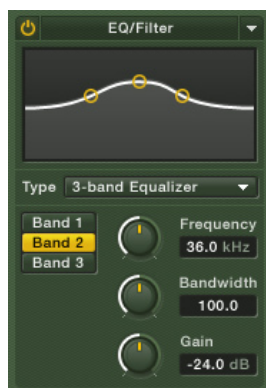
Use the saturator to greatly alter your drum sound.

Battery 3's Saturation unit provides expansion/compression/saturation effects for selected Cells. Unlike a standard audio compressor/expander, Saturation works on individual sample bits, not the overall sound. Therefore it can greatly alter the sound of even the shortest samples.

Saturate: A negative setting expands the sound, making quiet sounds quieter and loud sounds louder, while a positive setting provides a compression-like effect, where loud sounds become quieter and quiet sounds become louder. Saturation increases as values become more positive or negative from the default '0' setting.

Output: Sets the module's level.

EQ/Filter



Change a Cell's tonality with a variety of filter types.

The Filter section can change the frequency characteristics of a Cell in various ways, from bassy and muddy, to bright and trebly, and anywhere in between. A filter is basically a special kind of amplifier that changes gain only at specific frequencies, either boosting or cutting those frequencies. Filters require a fair amount of CPU power, so leave them turned off when they're not needed.

Different filter types affect the sound differently. Here are your options on BATTERY 3:

Low-Pass filters: Passes frequencies below a certain cutoff point, and attenuates signals above the cutoff point. The more poles, the steeper the cutoff, and the more rapidly response falls past the cutoff point. (For the technically curious, each pole increases the slope by about 6dB octave. For example, a 4-pole low-pass filter has a 24dB/octave slope, which means that above the cutoff frequency, the response drops by 24dB for each additional octave.)

High-Pass filters: This is the inverse of the Low-Pass response. It passes frequencies above a certain cutoff point, while attenuating signals below the cutoff point.

Band-Pass filters: This attenuates signals above and below the cutoff frequency (or more correctly, the resonant frequency). Again, more poles create a steeper cutoff.

Band EQ filters: Each band has three parameters, Boost/Cut (increases or decreases response), Frequency (the center point where the boosting or cutting occurs), and Bandwidth (the range of frequencies over which boosting or cutting occurs, from narrow to broad). A 1-Band EQ has one such stage, a 2-band EQ has two such stages, etc.

Phase Filter: Provides the type of filtering associated with “phase shifter” effects.

Vowel A and B Filters: These two filters model the response created by the human mouth when pronouncing vowels (yes, your mouth is a type of mechanical filter). Sweeping a vowel filter's cutoff and resonance controls can produce very “humanized” filtering sounds.

Band 1/Band 2/Band 3: These are buttons with which you can select and adjust each of three filter bands.

Please note that the available complement of controls depends on what filter type you've selected.

The EQ/Filter also has control knobs that vary depending on the type of filter:

Cutoff: Sets the frequency above which signals are attenuated. (Approximate range: 43.6Hz to 21.8Khz.)

Resonance: Emphasizes the frequencies just below the cutoff. Values range from 0% (no emphasis) to 100% (maximum emphasis).

Frequency: Chooses the frequency at which boosting or cutting will occur.

Bandwidth: Sets the width (bandwidth) of the frequency band to be boosted or cut.

Gain: Controls the amount of boost (positive values) or cut (negative values).

Compressor



Add punch and control dynamics with compression.

Compression is a signal processing technique that controls dynamics, and is commonly used in recording. It reduces peaks and raises low-level signals to produce a higher average signal level, thus creating a “hotter” sound. Use caution, though; too much compression may sound impressive at first (“Wow, that sounds really loud! Cool!”) but it can also be fatiguing. Most people feel that it’s important for music to have some degree of dynamics, and if you want a loud sound, it’s better to turn up the volume than add excessive compression.

On/Off Switch: As with filters, dynamics processors require some CPU power. Only turn on a compressor when needed.

Threshold: This sets the level above which compression begins. For example, with a threshold of -10dB , signals below that level will be relatively unaffected, but signals above that level will be attenuated. The degree of attenuation is set by the...

Ratio: This setting indicates the ratio of input signal to output signal once a signal exceeds the threshold. For example, a ratio of 3:1 means that if a signal is above the threshold, a 3dB increase in input level yields only a 1dB increase in output level.

Gain: Because the peak level has been reduced, use the gain to make up the difference. However, be careful to avoid clipping. A good rule of thumb is to set the Gain so that peaks with the compressor On reach the same level as peaks with the compressor Off.

Attack: This determines how long it takes for the compression effect to kick in once the input signal exceeds the threshold. The higher the value, the more percussive the effect, with the tradeoff being higher peak levels. Lower values give a more “squashed” sound, but keep peaks to a minimum.

Release: Sets how long it takes for the compressor gain to return to normal after the input signal has gone below the threshold.

Compressor Tips

- **Minimizing noise.** Do not overcompress, as this makes for a thin, unnatural sound. Use the bypass switch to compare the compressed and non-compressed sounds; you may find that just a little bit of compression gives the desired effect.
- **“Mystery” compression increases.** If it seems like there’s been a sudden increase in compression but you didn’t increase the compression amount, then the input signal going to the compressor may have increased.

Inverter



Invert your signal's phase and/or pan position.

This module allows you to invert the phase and/or the pan position (i.e. reversing the left and right channels) of your audio. It allows you to react to phase cancellation. Here are the controls:

Invert: Inverts the phase of your audio.

Swap: Reverses the left and right channels in stereo.

Output: Sets the module's level.

Sends



The Effects section also has two Send controls for sending the Cell's output signal to BATTERY 3's Delay and Reverb units respectively:

Delay: Determines the amount of signal to be sent to the Delay module.

Reverb: Determines the amount of signal to be sent to the Reverb module.

Master View Tab



You can apply a range of top quality effects to a whole BATTERY 3 kit.

As well as the comprehensive Effects section that can be used to apply a range of effects to each individual Cell, BATTERY 3 has an additional selection of top quality processors that can be applied to an entire drum kit:

EQ/Filter: Changes the frequency characteristics in various ways.

Compressor: Processes dynamics by reducing the difference in amplitude between soft and loud signals. Can give a mix more presence and punch.

Limiter: Commonly used for processing a stereo mix, a limiter is a compressor with an extremely high compression ratio.

Delay: A delay unit with tempo sync capabilities.

Reverb: Choose between digital reverb (low CPU usage) and convolution reverb (higher quality but more demanding on your processor).

Each effect in the Master section has an On/Off switch to activate and deactivate it, and an excellent set of presets ready for a wide range of applications.

EQ/Filter



Adjust the frequency characteristics of your entire drum mix.

The Filter section can change the frequency characteristics of your mix in various ways, from bassy and muddy, to bright and trebly, and anywhere in between. A filter is basically a special kind of amplifier that changes gain only at specific frequencies, either boosting or cutting those frequencies. Filters require a fair amount of CPU power, so leave them off unless needed.

Here are your Master options on BATTERY 3:

Low-Pass filters: Passes frequencies below a certain cutoff point, and attenuates signals above the cutoff point. The more poles, the steeper the cutoff, and the more rapidly response falls past the cutoff point. (For the technically curious, each pole increases the slope by about 6dB octave. For example, a 4-pole low-pass filter has a 24dB/octave slope, which means that above the cutoff frequency, the response drops by 24dB for each additional octave.)

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Compressor



Add ‘punch’ to your mix with compression.

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On/Off Switch: As with filters, dynamics processors require some CPU power. Only turn on a compressor when needed.

Threshold: This sets the level above which compression begins. For example, with a threshold of -10dB , signals below that level will be relatively unaffected, but signals above that level will be attenuated. The degree of attenuation is set by the...

Ratio: This setting indicates the ratio of input signal to output signal once a signal exceeds the threshold. For example, a ratio of 3:1 means that if a signal is above the threshold, a 3dB increase in input level yields only a 1dB increase in output level.

Gain: Because the peak level has been reduced, use the gain to make up the difference. However, be careful to avoid clipping. A good rule of thumb is to set the Gain so that peaks with the compressor On reach the same level as peaks with the compressor Off.

Attack: This determines how long it takes for the compression effect to kick in once the input signal exceeds the threshold. The higher the value, the more percussive the effect, with the tradeoff being higher peak levels. Lower values give a more “squashed” sound, but keep peaks to a minimum.

Release: Sets how long it takes for the compressor gain to return to normal after the input signal has gone below the threshold.

Limiter



The Limiter is a compressor with a very high compression ratio.

A Limiter is a mastering tool that restricts dynamics to an absolute level. An extreme form of compression, it is useful for making quiet components in a mix louder, while restricting loud components to a optimum level. It can change a relatively meek drum mix into a confident, polished sound!

The BATTERY 3 Limiter has 3 controls:

Gain: The input level of the Limiter.

Release: The time required by the Limiter to release the effect.

Mix: Choose a blend between 'dry' and limited signal.

Delay



The Delay section to add extra depth and color to your drum sounds.

BATTERY 3's Delay unit is simple and flexible. It has 6 controls:

Time: The interval in milliseconds between hearing the clean signal and the first delay of the delayed signal.

Damping: Reduces (damps) high frequencies in the delayed signal. Higher values reduce the highs further. With feedback applied (described below), each successive echo has progressively lower high-frequency response.

Pan: Setting a value higher than 0 results in a panning effect where each consecutive echo alternates between the left and right channel. The higher the value, the greater the stereo spread; at 100, signals alternate between the far left and far right channels.

Feedback: This sends a portion of the output back into the input of the delay line, which creates repeating echoes. A value of 0 produces only one echo; higher values give multiple echoes.

Mix: Varies the amount of the processed and straight signals.

Sync: Activate this button to synchronize the delay to your host sequencer.

Reverb



The Reverb unit adds 'acoustic space' to your drum sound.

Digital reverb simulates the complex reflections that occur when sounds play in an acoustic space, thus adding spaciousness to the sound.

Battery 3's Reverb section gives you two types of high quality reverb: **Reverb** ('normal' digital reverb) and **Impulse** (convolution reverb). These are selectable by clicking on the two buttons at the top of the section.

The controls vary depending on the type of reverb selected. Here are all of them:

Pre-Delay (PD): Introduces a short amount of delay (0-180ms) before the reverb takes effect. This simulates the reverb response in large rooms, where a short time elapses between the time a signal occurs and when it first bounces off of a room surface.

Size: Sets the room size, which affects how long the reverberation lasts. Higher values are equivalent to larger rooms.

Stereo: Higher values increase the stereo effect. Use lower values to simulate sitting closer to the stage, and higher values for sitting further back in the hall.

Color: Determines the type of material used to construct the room. Lower values are softer surfaces (e.g., wood), higher values are harder surfaces (e.g., concrete).

Damping: Sets the amount of absorption in the room from drapes, people, acoustic treatment, etc. Higher values simulate more absorption.

Mix: Varies the amount of the processed and straight signals.

Reverse: When this button is activated (yellow), the reverb is played in reverse.

HP: High Pass Filter (a filter that lets high frequencies through but restricts lower ones).

LP: Low Pass Filter (a filter that lets low frequencies through but restricts higher ones).

Please note that any sample from a cell could be dropped to the convolution display and used as a convolution sample.

Browser View Tab



Battery 3's new Browser makes it easy to handle samples and loops.

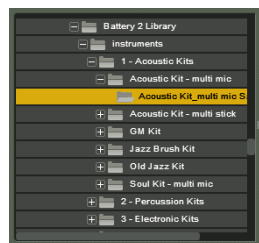
The Browser is where you can browse many things, including:

- Files anywhere on your computer
- A database of favorite samples and instruments

The Browser provides a handy source for drag-and-drop operations. Rather than having to drag from the desktop, or folders nested within folders, you can simply drag from the Browser into Battery 3.

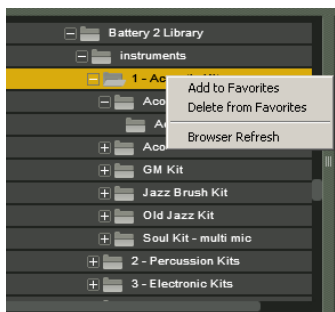
The Files Browser displays your computer's drives and files in a familiar "tree" structure. It consists of three main panes and an Audition area.

Folder Pane



This shows a directory of your computer, including all hard drives, CD-ROM drives, etc. – any objects that can “contain” other objects. Both Folders and Files serve as containers.

A (+) sign next to a listed object indicates that it can be opened to reveal additional objects. A (-) sign next to a folder indicates that it is already showing its “child” objects. Click on the (-) to close the folder; any child objects will no longer be shown.

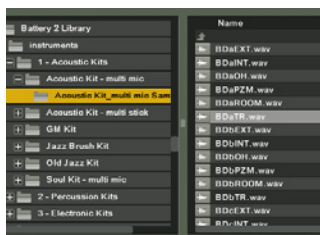


Context Menu: If you right-click (Mac: Ctrl-click) on the folder pane you'll get a menu. There you can add folders to Favorites or refresh the Browser to update its directory listing. Incidentally, Favorites show up in the browser in a folder called „Favorites“.

Files Pane

Name	Size	Date
BDaEXT	62.16 kB	16.09.2004
BDaINT	68.24 kB	16.09.2004
BDaOH	253.71 kB	16.09.2004
BDaPZM	253.71 kB	16.09.2004
BDaROOM	297.48 kB	16.09.2004
BDaTR	52.41 kB	16.09.2004
BDbEXT	64.68 kB	16.09.2004
BDbINT	68.14 kB	16.09.2004
BDbOH	258.58 kB	16.09.2004
BDbPZM	258.58 kB	16.09.2004
BDbROOM	434.34 kB	16.09.2004
BDbTR	62.90 kB	16.09.2004
BDcEXT	65.28 kB	16.09.2004
BDcINT	71.19 kB	16.09.2004

This shows objects (usually files, but also objects within file containers such as AKAI CDs or Monolithic Files) that are within a folder. When you click on a container itself in the Left pane (rather than a “+” or “-” sign), any containers or objects within the container that Battery 3 recognizes will show up in the lower pane.



A Splitter Bar between the Left and Middle panes can be moved sideways to change the proportion each pane takes up within the Browser. To do this, click on the Splitter Bar and drag left or right.

To load a sample into a Battery 3 Matrix Cell, locate the sample using the Folder and File Panes, then drag it onto the Cell. In this way, you can easily expand existing Battery 3 kits or build new ones from scratch.

Instrument Info Pane



This pane shows information about individual files:

- File name
- Number of channels
- Sample rate
- Bit resolution
- Length
- File size

There are buttons immediately below the Instrument Info area. They are as follows:

Auto Preview: When this button is selected, audio files can be auditioned automatically by selecting them in the Browser.

Sync: When a sliced loop is played back with this button selected, the playback will be synced to the tempo set in BATTERY 3 or your host sequencer.

In Kit Preview: When a cell is selected with this button activated, you can preview a new sample instead of the sample currently present in the selected cell.

Loop: When this button is activated, your sample is played back as a repeating loop – useful for REX files!

With Parameters: This is a sub-mode of **In Kit Preview** as it does not only play the sample, but also uses the entire sound engine of the 'host' cell.

Preview Area

The Preview Area at the far right end of the Browser window features some simple controls:

Volume: For adjusting the volume of sounds previewed in the Browser.

Play: Click this to play a selected sound.

Stop: Click this to stop a previewed sound from being played.

Tips and Techniques

As with any sample-based system, BATTERY 3 gives the best results if you start with high-quality samples, then learn how to exploit its many sound-shaping features. Here are some tips to get you started.

Drum Pitch Tuning

- The Root Key setting, in combination with the Key Range, determines the sample's "baseline" pitch. However, many modern drum sounds (especially in dance and experimental music) use extreme pitch-shifting. For example, downward pitch shifts are common in industrial music, while upward shifts have found favor in drum and bass as well as house music.
- You can use the Tune control in the Cell view tab to alter tuning of an entire Cell, or the Tune control in the Mapping view tab if you want to tune individual samples within a Cell. Also remember that you can use key velocity or MIDI note number as modulation to alter the pitch, and that adding a pitch envelope can create "movement" in the drum sound.
- An important part of drum kit tuning is matching the tuning to your song's key. Although most percussion samples are unpitched, you will find that certain pitch adjustments allow your drum kits to "sit" better in your mix. This is particularly true with hi-hats and cymbals. Once you have completed a track, spend some time working with your kit's Tune settings to optimize the kit for a particular piece of music.
- Use tuning to create multiple drum sounds from one. Want to play a two-hand shaker part, but have only one shaker sample? Copy it to another Cell, then detune the copy to provide a slight sonic variation. Detuning can also create a family of cymbals or toms out of one cymbal or tom.
- Use radical transpositions to create new sounds. Most sample CDs don't seem to have a gong sound, but don't let that stop you. Take your longest cymbal sound, add it to a Cell, and in the Map view, detune it by -12 semitones. Now, copy that Zone within the same Cell, and detune it by about -3 semitones. When you trigger the two together, the slightly detuned cymbal gives a convincing attack, while the highly detuned one provides the necessary sustain.

- Although one of the above tips mentions using velocity, note number, or an envelope to modulate pitch, one of the best applications of pitch modulation is very subtle (almost unnoticeable) velocity control. A small pitch increase with high velocities emulates a drum's skin being stretched, hence pitched higher, when it's first hit.

Tweaking the Drum Mix

Creating a great drum and percussion mix is as much art as science. Drum mixes are the measure of greatness in engineers, and a poorly mixed percussion mix can ruin an otherwise great song. While it would be impossible to list all of the “great ideas” that have been written about creating drum mixes, here are a few points worth noting. Luckily, when using the BATTERY 3 software, we don't have to worry about microphone location!

Try these tips on for size – but realize that in electronic music, there are no rules.

- **Use individual drum outputs.** When using BATTERY 3 as a VST instrument, you can have multiple outputs with unique EQ and effects settings. A typical output setup would include a stereo output mix, individual snare and hi-hat outputs, and a loop output. This lets you add a unique reverb to the snare, EQ the hi-hats cleanly, and process sample loops without affecting the “main” mix.
- **Watch your hi-hat volume.** Many beginning drum programmers create kits with overly loud hi-hats. Make sure that the hi-hats slide into the mix, and don't dominate it.
- **Use more than sub-bass tones for the kick.** Using a sub-bass kick will sound great on your studio monitors and in a big club system. However, anyone listening to your mix with headphones or a boom box will probably not hear the kick at all. Make sure your kick includes some high end, perhaps by layering it with a second sample, or adding a bit of distortion to increase high-frequency content.
- **Use caution when combining sounds into a kit.** You generally want to keep each drum within a specific pitch/EQ range. If you find that your basic samples take up too much “sonic space,” you can route the samples to individual outputs, and “thin” them with external EQs and effects.
- **Check your mix in mono.** While a wide stereo drum mix may sound great, it may also keep you from creating a great mix. Try monitoring in mono as you set up the mix; it's often easier to get a good blend (even of a stereo mix) when you do some of your mixing in mono.

- **Don't forget processing during mixdown.** For example, suppose you have a good drum part but it seems to lack dynamics. While mixing down, you can overdub a controller track using a mod wheel or fader to control the sample start point. As mentioned previously in the manual, setting the Start point a few milliseconds into the sample creates a more muted drum sound. Adding negative modulation includes the entire attack, giving a more dynamic sound. Or, use velocity to control saturation so that high-velocity hits increase saturation.

Filter Modulation

For dynamic control beyond tying velocity to level and/or sample start point, assign velocity to the Low-Pass filter cutoff so that hitting the drum harder produces a slightly brighter sound. This gives extra emphasis to the hardest hits, making the drums feel more “alive.”

If the drum sound isn't too bright to begin with, using a low-pass response might produce too “dull” a sound with soft hits. The solution here is to use velocity to boost the filter's treble, or resonance (assuming the cutoff is somewhere in the treble range). This will again give the effect of creating a brighter sound with harder hits.

Multiple-Cycle Looping = Long Sustain

This sampling-oriented trick can turn a quick hit into one with a super-long decay, particularly with toms and kicks. This takes advantage of BATTERY 3's Loop view, but we'll be using only one loop.

The object is to loop a single cycle in the drum's decay tail, and set Count to a higher number of repeats. Then, turn on the Volume envelope and edit the decay parameter for the desired length. Try different individual cycles for looping; they may appear almost identical, but some will usually loop better than others.

Infinite-Cycle Looping = Infinite Sustain

To turn a one-shot into a sustained sound - so long as you hold the key - activate loop 1, set the loop count to infinite, adjust the loop start and end points to a desired location; turn on the volume envelope, activate mode and make sure the sustain is turned up. Holding notes should result in sustained sounds.

Click Layering

Sometimes modulating an existing sample just isn't enough to create serious dynamics. This is where a “click sample” or sound can come in handy. To make a click sample, you can simply draw some spikes in a digital audio editor (e.g. Wavelab, Peak, Audition, Sound Forge, etc.) for about 35 ms, then save that as a file. Map the click sample into the same Cell as the sample you want to augment and reduce its volume so it blends in with the main sound, but set the velocity triggering and crossfade so that the click sample responds only to higher-velocity signals. In other words, the click's entire dynamic range should cover mostly the upper dynamic range of the sound with which it is layered. Now with really hard hits, the click will come in and add some extra spice.

MIDI Timing Tweaks

BATTERY 3 is only half of the drum part equation: The part that makes sounds. The other half is the sequence driving BATTERY 3. While it's important to tweak BATTERY 3 to deliver the best possible sounds, it's equally important to tweak the MIDI data that's triggering those sounds if you want to produce the best possible drum part.

There's a saying that “timing is everything,” yet mathematically perfect timing is most certainly not everything, otherwise drum machines would have replaced drummers a long time ago. Good drummers enhance music by playing with the time—subtly speeding up or slowing down to change a tune's “feel,” and leading or lagging specific beats to push a tune or make it lay back a bit more in the groove.

Often, these time changes ahead of or behind the beat are very small; even a few milliseconds (ms) can make a difference. This is surprising, since sound itself moves at about 1/3 meter per second, so a 6ms change theoretically affects a track about as much as moving an amplifier 2 meters further behind the drummer. Yet when you conduct timing shift experiments, it becomes obvious that even very small timing differences can change a tune's groove when you hear these changes in comparison to a relatively steady beat.

Quantizing everything is the quickest way to suck the life out of a piece of music. Fortunately, we can use other aspects of sequencers to put the feel back in to sequenced music.

Why Randomization is Not the Answer

Many sequencers provide timing randomization options to help give a more human-sounding track. Randomization is great if you want to simulate the effect of a drummer who's had too many beers; however, for a great groove, shift timings the way a drummer would. Human drummers add variations in a mostly non-random way—often subconsciously, so these changes tap directly into the source of the drummer's "feel."

Drummers often hit some drums slightly ahead of, or behind, the beat to give certain effects. For example, jazz drummers tend to hit a ride cymbal's bell a bit ahead of the beat to "push" a song. Rock drummers frequently hit the snare behind the beat (listen to any Led Zeppelin album) to give a "big" sound. Of course, the sound isn't really bigger; but our brain interprets slight delays as indicating a big space, since we know that in a big space, sound travels a while through the air before it reaches us.

A sequencer or drum machine's track shift (or track offset) function, which can move a track back and forth in increments of single clock pulses, is your first line of defense against mechanical grooves. Keep the kick drum on the beat as a reference, and use track shifting to change the timing of the snare, toms, and percussion by a few milliseconds. Here are some other track timing tricks.

- For techno, dance, and acid jazz tunes try moving any double-time percussion parts (shaker, tambourine, etc.) a little bit ahead of the beat to give a "faster" feel.
- Sometimes it works well to shift individual notes rather than an entire track. With tom fills, delay each subsequent note of the fill a bit more (e.g., the first note of the fill is on the beat, the second note approximately 2ms after the beat, the third note 4-5ms after the beat, the fourth note 6-8ms after the beat, and so on until the last note ends up about 20ms behind the beat). This can make a tom fill sound gigantic.
- If two percussion sounds often hit on the same beat in a rhythm pattern, try sliding one part ahead or behind the beat by a small amount (a few ms) to keep the parts from interfering with each other.
- If some drums fight with melodic parts (e.g., the kick drum and bass mosh together), slightly advance the part you want to emphasize in the mix. It will grab the ear's attention just before the beat, therefore bringing more attention to itself.
- Hitting a crash cymbal a bit ahead of the beat makes it really stand out. Moving it behind the beat meshes it more with the track.

Why Quantization is Not the Answer either

Remember, machines don't kill music, people do—and quantization is one of the main weapons. Although quantization has its place, it's a very artificial process because no drummer plays with crystal-controlled precision. Fortunately, sequencers usually let you quantize by a certain percentage (usually called “quantize strength” or “intensity”). In other words, 100% quantization moves a note exactly to the nearest beat, but 50% quantization moves it halfway closer to the beat. Try quantizing the kick to 100% and all other drum tracks to somewhere between 50% and 80%. The result is a track that sounds rhythmically correct, but retains most of a performance's “feel.”

Tempo Track Timing Tweaks

People generally set the tempo in a sequencer to the desired beat, then just lit it sit there. That's not the way real music works; in a fascinating study, Ray Williams and Ernest Cholakakis (of DNA Groove Templates) compared the tempo tracks of two classical pianists playing *Moonlight Sonata*, and plotted out the tempo changes. The results were anything but a constant tempo—the changes looked like a relief map of the Alps.

Even though pop music doesn't change tempo as much as classical pieces, real drummers insert subtle tempo changes, inserted over several measures or just in selected parts of individual measures, to build anticipation and change moods. Fortunately, most sequencers let you change the tempo track throughout a song; once you start working with this technique, you'll find it an essential part of the production process. Here are some examples of track shifting.

- To boost a song's energy level, increase tempo slightly (by 1 or 2 beats per minute). This is the timing equivalent of modulating pitch upward by a semitone; both increase excitement. Decreasing tempo has the reverse effect. Tempo shifts are useful when transitioning between song sections (verse to chorus, chorus to instrumental, etc.) as well as within a particular section (such as upping the tempo for the last two measures of a solo).
- Change tempo a little bit before the first beat of the measure you want to change. For example, if you're going from verse to chorus, increase the tempo halfway through the measure prior to the chorus. This creates a smoother lead-in than having the tempo change coincide with a measure change.
- For really dramatic effects, ritard the tempo over the course of a measure (e.g., one BPM or less lower on each beat) then return to the original tempo. Having a drum roll during the ritard creates a particularly effective transition.

Acknowledgement: Most of this section was written by author/musician (and BATTERY user) Craig Anderton, and is used with his permission.

Battery 3 Library

Introduction

Battery 3 is not a drum sampler bundled with a library. On the other hand, the Battery 3 library is not a sample bank bundled with a sample player. The library is an integral part of the complete product design of Battery. It is extensive, comprehensive, thoughtfully programmed and well arranged. Here are some insights to get you started, but extensive kit information can be found in the “Battery 3 Library Manual.pdf” document.

For those of you who are interested in numbers, here are some impressive facts:

- over 100 drum kits, specifically programmed for Battery 3
- close to 12 GB of samples
- over 2000 individual cells

But numbers are one thing, music is something else. The Battery 3 Library does not want to show off with quantity alone. It aims to provide you, the musician, with a serious tool for music production. Regardless if you are a drum’n’bass bedroom producer, a film scoring guy, an orchestral composer or a techno freak, you will find the right sounds. And you will find them fast. You can even tweak and customize your kit in such a quick and intuitive way that will make your ears waggle.

Just load a kit and play through it. Unhappy with that snare sound? Right click on that cell and choose another snare cell. Still unhappy? Use the arrow keys in the cells to step through all snare cells. With over 2000 cells included, you should find what you’re looking for. And just before you think you’re feeling lucky, activate an Articulation from the cell setup page. And then, make music!

It doesn’t matter what kind of music you make, the diversity of the library is immense. Load the Multi Mic Rock Kit and you have over 1.5 GB of sample data at your disposal. Or load the Simple Waveform Kit, with its 5 cute samples, each being only 4 Kilobytes “large”. Check out the Beatbox Eliot Kit with some cells containing 127 velocity layers. Or browse through the revised Battery 1 kits, many with just one velocity layer but loads of attitude! Fire up explosions with the Armageddon Kit, march along with the Marching Band kit, create your own drum mixes with the four Multi Mic Kits, be serious with the Orchestral Percussion Kit and have a laugh at our Berlin Headquarters Kit.

The samples and drum kits of the Battery 3 Library are produced especially for Battery 3. There is no demo content, no kits advertising for a sample producer, and no clown kits. There are kits like the Acoustic kits which feature pure unprocessed samples, waiting for further processing in your host. But there are also the Production kits with processed acoustic samples which are ready to go.

The library is in no way an add-on to the application, it wasn't designed to simply get you started with Battery 3. It was designed to accompany you in all of your musical projects. Therefore, the purpose of every kit in this library is to make music without compromises, and that's how we want you to treat this library.

Overview

From ethnic to electronic, from high quality to vinyl-style, from GM to experimental, from orchestral drums to drum machines...everything is included at your fingertips:

There are preview versions of all large kits, and every kit is accompanied by a midi file which demonstrates the usage of the kit. Some kits like the Orchestral Percussion Kit or the Timpani Kit come along with several subset kits, giving you instant access to specific articulations and/or instruments without having to load the entire kit.

There are also three additional folders labeled Battery 3 kits, Battery 2 kits and Battery 1 kits. Here you will find all original kit versions of the former Battery versions as well as all new kits of Battery 3. These folders also contain all sample folders.

Last but not least there is the cell library. If you want to start with an empty kit and build your own kit, this is the way to go. There are over 2000 individual cells, organized in subfolders making it easy for you to quickly find what you're looking for.

That's enough information for right now! It's time for you to fire up some beats and get acquainted with the library. For a detailed description of each kit, please read the „Battery 3 Library Manual.pdf“ document.

1 - Acoustic	2 - Production	3 - Percussion	4 - Electronic	5 - Synthetic	6 - Special
Basic*	60's Garage*	Afro Cuban Kit**	Apparat**	Alais*	Armageddon Kit
Full Jazz Kit	70's Funk*	Bongo Kit**	80's Electro*	Alkaloid*	Beatbox Eliot**
GM Kit**	70's Reggae*	Conga Kit**	Argon*	Arcocen**	Berlin Headquarters
Heavy Rock Kit ^o	Dragon Kit	East Asian Kit	Ate Oh Wait Kit	Best of Absynth**	CD KIT 1**
Jazz Brush**	Dub*	Marching Band Kit	Big Beat*	Best of FM7**	CD KIT 2**
Multi Mic** ^o	Dub Remix Kit	Middle Eastern Kit	Clik Dub Kit	Best of Krypt**	Factory Kit
Multi Stick**	Elektro Akoustic	North Indian Kit	D'n'B*	Best of Limeite**	Microwave Kit
Old Jazz Kit**	GVA Kit	Orchestra!Percussion**	Dakeat Kit	Dusty Circuit**	Noise Kit
Pop Kit	Hardcore Gothik	Timbale Kit**	Dance 1*	Earth*	Prepared Percussion
Rock Kit ^o	Harsh*	Timpani Kit**	Dance 2*	French*	Simple Waveform**
Soul Kit** ^o	Hip Hop*	West African Kit	Distinct*	Glitch Kit	Strom*
Tight Kit	Jazz*	World Music Kit	Drum'n Bass*	Mega Synthetic	
Vintage*	Live Scrapyard Kit		Hessy Eye Drum Trax	MK2**	
	NuPop Kit		Hip Hop**	Off Topic*	
	Reggae*		Lend Drum Kit	Organi Kit	
	Rock*		Nein Oh Nein Kit	REAKTOR*	
	Soul*		New York House*	Robati Kit	
	Steveland's Vinyl*		Overtime DnX Kit	Seny*	
	Studio Gong Kit		R&B**	Sinheti	
			See Our 7T8 Kit	Vrtrel Kit	
			toksin_kit1**	Wicked*	
			toksin_kit2**	Wooden Clog	

^o denotes Multi Mic Kits

** denotes Battery 3 version of Battery 2 Kits

* denotes Battery 3 version of Battery 1 Kits

Battery 3 Video Tutorials

On your Battery 3 DVD you also find 8 Video Tutorials that will help you discover the Battery 3 functionalities. The tutorials have an approximate size of 800 MB.

Many sound examples describing Battery in different application areas demonstrate the flexibility and the power of the Battery 3's functions and the 12 GB Sound Library.

The Video Tutorials deal with the following issues:

- 1 - Battery 3 Quickstart (6:36 min.)
- 2 - What's New (3:52 min.)
- 3 - Library (7:16 min.)
- 4 - Cell Matrix (5:53 min.)
- 5 - Drum Articulations (5:20 min.)
- 6 - Master Effects (7:37 min.)
- 7 - Loops (3:54 min.)
- 8 – Sound Design (6:29 min.)

Total Play Time: (46:57 min.)



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