

AudioRealism

Drum Machine



AudioRealism ADM

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Introduction

Thank you for using AudioRealism Drum Machine (ADM)!

ADM combines three classic 808, 909 and 606 drum machines from the early 80's into one machine. Comprised of 25 drum generators, each one carefully modeled after the classics' analog circuits and 4 PCM players, for a total of 34 sounds (some generators have two sounds). Certain sounds have been extended with extra parameters, like the tuning and attack of the 606 bass drum. The effect of the accents on the bridged-T oscillators which make up the bass drum and tom-tom sounds has been closely simulated, and the hi hats and cymbals sound and react very closely to the originals.

Additionally, it is possible to trigger your own samples via the built-in step sequencer, expanding the use of ADM indefinitely. Furthermore, the PCF (Pattern Controlled Fx) allows you to program filter sweeps or even automate any of the drum machine's parameters for each step, including switching generator models on the fly.

Let the drum machine fest begin!



Installation

PC/Windows

1. Locate and run the executable **Install_ADM_PC.exe**
2. The installer will suggest a path to install the plug-in into.
3. If the path is correct, select <Install> else browse to the path where you keep your VST plug-ins and then select <Install>.
4. ADM will show up under AudioRealism/ADM in your host's VST plug-ins menu.

Mac OS X

1. Locate the executable **Install_ADM_AU.zip** or **Install_ADM_VST.zip** depending on which version you wish to install (Not all versions may be available at initial release date).
2. Extract the file by double clicking on it and then run the installer package
3. ADM will show up under AudioRealism/ADM in your host's plug-ins menu.

Authorizing your plug-in

Before you can start using the plug-in you need to enter the authorization information that you have received from AudioRealism. When this information has been entered you will not be asked for it again unless you reinstall the plug-in. If you have trouble entering the information contact support@audiorealism.se. Please note that authorization codes are personal and may not be shared. You may install the plug-in on as many machines as you wish as long as you use it yourself.



Conventions and Definitions

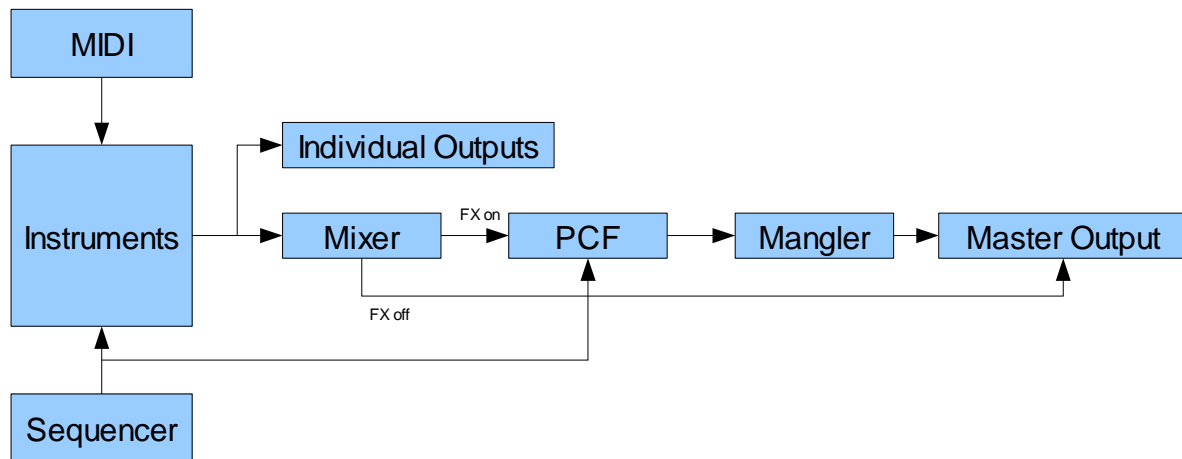
This manual uses a number of terms to identify specific functionality.

1. A pattern comprises of a number of parts and steps, together with shuffle and flam settings.
2. *Part* is one 'channel' of a pattern, for example Accent, Bass Drum and PCF each have their own parts.
3. *Step* is one of 32 steps that a pattern may have.
4. *PCF Automation* refers to any built-in automation that a patch (or pattern) may have.
5. *Host Automation* refers to any parameter automation done by the host
6. Patch is a pattern together with PCF automation, parameters and sample pack, and typically resides on the hard drive.
7. Triggering often refers to when an instrument is played (for example triggering a snare drum).
8. *MIDI Note/Event* is a message that is sent from the host to the plug-in, often playing a pattern or triggering a instrument
9. Instrument refers to the specific type of instrument, for example Bass Drum or Snare Drum, but is not generator (or model) specific.
10. Generator (or model) refers to the specific generator used, for example whether it is a 606 or a 808.

Sometimes some of these terms are interchangeable or have subtle differences. For example a Part may often be thought of as the same thing as an instrument, however the Accent part itself has no sound and therefor is not an instrument, which is why this distinction is made.

Architecture

ADM's routing is displayed in the schematic below:



The Instruments receive triggers via MIDI or the internal sequencer. The instruments outputs are mixed or routed to individual outputs. The mixed instruments are optionally (for those instruments where FX is on) processed by the PCF Filter and Mangler and finally routed to the master output.

Main GUI Layout and operation



The main GUI is divided into a number of sections: The topmost section is the Outputs/Options section. The upper middle section is the Instrument/Parameters section and the lower section is the *Pattern/Control* section.

A number of control types are used to make up the GUI: knobs, buttons and switches. ADM uses linear style controls which you can change by simply clicking on the control, then dragging your mouse in the desired direction. Fine adjustments may be available for certain controls by holding down <Shift> while using that control.

Pattern/Control section

The pattern and control section is used to program patterns and set up ADM's MIDI and sync behaviors.



The controls are described from left to right.

Volume

Sets the master volume. This control is global for the whole instance of ADM. The master volume will not affect the volume of any individually routed instruments (see Using Multiple Outputs)

Steps

Sets the number of steps for the pattern. The minimum number of steps is 1 (one) and the maximum is 32.

Shuffle

- Amount - Sets the amount of shuffle for the pattern
- On/Off - When lit the pattern is shuffled

Pattern Write/Clear

When pattern write is enabled it is possible to program patterns via the step buttons and automate parameters in PCF automation mode.

To clear the pattern Ctrl+Click (Apple+Click on Mac) the clear button when it is lit

Tempo

Sets ADM's global tempo when in INT (Internal sync) mode. If in host sync mode the tempo can only be read by hovering the mouse over the tempo readout.

Sync

Selects ADM's tempo sync mode - INT (Internal) or HOST. In HOST sync mode ADM's tempo will be locked to the host's tempo.

Mode

Selects ADM's play mode: PTN (Pattern) or NOTE (typical MIDI note mode). See



Pattern Mode and Note Mode for a description of each modes respectively.

Pattern Menu

Selecting the button will bring up the Pattern Menu with a number of pattern transformation options:

- Cut pattern - Places the current pattern in the copy buffer and clears
- Copy pattern - Copies the current pattern
- Paste pattern - Pastes the copy buffer

- Cut part - Places the current selected part in the copy buffer
- Copy part - Copies the current selected part
- Paste part - Pastes the part copy buffer

- Expand pattern - Expands the pattern by inserting a blank step between each step and adjusts pattern length
- Shrink pattern - Shrinks the patterns by removing every odd step and adjusts pattern length
- Swap pattern - Swaps steps 1-16 with steps 17-32
- Duplicate steps - Fills the whole pattern by replicating steps up to the current pattern length (leaves pattern length unchanged).

- Shift pattern left - Shifts the whole pattern one step to the left
- Shift pattern right - Shifts the whole pattern one step to the right
- Shift part left - Shifts the current selected part one step to the left
- Shift part right - Shifts the current selected part one step to the right

Note: The shift operations work cyclically and only affect the steps within the current pattern length.

- Randomize pattern - Randomizes the whole pattern
- Randomize part - Randomizes the current selected part

Note: Randomizing only affects the steps within the current pattern length.

- Initialize automation - Initializes all PCF-automated parameters to the value of the parameters on the current selected PCF step
- Clear automation - Clears all PCF automation for the pattern

- Import pattern - Import rhythm data for the current pattern
- Export pattern - Export rhythm data for the current pattern (does not include parameters, automation or references to samples)

- Undo - Only selectable if an action can be undone, for example clearing the pattern. Only one action can be undone.

Pattern Selector

Selects the current pattern slot to be edited or played. If the floating display is enabled then the pattern name will be revealed when changing pattern or hovering the mouse over the pattern selector.

Edit Steps

Selects the range of steps to be edited: 1-16 or 17-32.

Flam

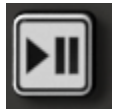
- Amount - Sets the amount of flam for the pattern
- Edit - When lit selects the Flam edit mode, in which programming any steps for instruments will result in a flammed (multiple retriggering, as in a snare-roll) triggering of the instrument.

Prescale selector



The prescale selector allows you to change the timing of the pattern. The selections are 1/16, 1/32, 1/8 triplet and 1/16 triplet.

Run/Stop



The Run/Stop button starts and stops the internal sequencer. When the sequencer is running the button will flash.

Step buttons/LEDs



The step buttons (self illuminated) and LED array (above the buttons) is used to program (when Pattern write is enabled) and display rhythm data in the pattern. These buttons operate differently depending on which mode ADM is in: Instrument or PCF Programming mode. Which steps are currently being edited depends on the position of the *Edit Steps* switch, which can be 1-16 or 17-32.

- Instrument programming mode: The buttons set triggers for each step of the pattern. The LEDs are on for those steps which have a flam programmed on



them. Depending on the instrument selected the buttons may have two (off, on) or three states (off, half, on). If the instrument selected is a 606 or 808 then there are only two states, if the instrument is 909 or SPL then three states are used.

- PCF programming mode: The buttons select which steps the PCF will be triggered on. The LEDs display the current selected step for which the parameter automation being edited. In this mode only one LED can be lit at a time since it is only possible to edit one step of automation at a time. See *Pattern Controlled Fx (PCF)* for more information on this mode.

Clicking on a step when Pattern write enabled will toggle the step on and off, or if there are three states then it will cycle through the states. Shift+Click will always enable a step, and right clicking will always clear a step.

Instrument/Parameters section



Instrument Selector

909

The instrument selector is used to select the generator for the part. Clicking the selector will pop up a menu where selections can be made. The number of items in the menu depends on which part is used. Additionally a number of samples may appear in the menu if this option is enabled.

FX Selector

The FX selector is used to select whether the part is to be routed through the PCF processor.

Part Selector



The part selectors are used to select which part is edited with the Step buttons in the Pattern section.

Accent Part

The accent part has no sound of its own, however when an accent is programmed on a step all parts on that step will sound louder or change their characteristics depending on the selected generator. There is only one parameter: Level which determines the amount of accent.

Bass Drums

The bass drum section has 4 parameters: Level, Tone, Decay and Tuning.

- The 808 models the classic elongated bass drum. When this model is selected the Tone parameter selects the amount of thump or punch at the attack of the kick. The Decay parameter controls the decay time from a short muffled kick to a long undamped kick. The Tuning parameter is an extra parameter not found on a standard 808, this parameter controls the pitch of the bass drum which can go below sub bass in its minimum position. For a standard tuning set the tuning knob to 12 o'clock. When accented the amount of punch and the bend of the frequency is affected.
- The 909 models the punchy bass drum. This model has a more punchy sound and a different amplitude envelope. The Tone, Decay and Tuning knobs function in the same way as the 808. Accent mainly affects volume, but may produce distortion when large amounts of accent is used.
- The 606 model is more tinny and has been extended with the three control parameters, which affect the sound as mentioned above. When the decay knob is set to maximum the 606 model can produce sustained tones which can be used for walking bass lines.

When in SPL mode the Tone knob controls the amount of sample offset (0-100% of the sample length). The Decay and Tuning knobs work as expected.

Snare Drums

The snare drum section has 4 parameters: Level, Tone, Snappy and Tuning.

- The 808 model produces the typical crisp snare drum. The Tone knob (extended parameter) controls the decay time of the noise component of the sound. The snappy knob controls the amount of noise and the tuning knob controls the mixture between the two oscillators that make up the body of the snare.
- The 909 model has a different noise envelope shape and the tuning knob changes the tuning of the oscillators. The tone knob will affect the duration of the noise component, from a tighter hit to a looser sound.
- The 606 model has a shorter and more snappy sound, but reacts to accent more vividly, especially when more amount of snappy is used.

When in SPL mode the Tone knob changes the sample offset, Snappy controls the amount of filter and Tuning controls the basic tuning of the sample.

Toms/Congas

The tom-toms (LT,MT,HT) have three parameters each: Level, Tuning and Decay, and a switch.

- In 808 mode the LT/LC, MT/MC and HT/HC switches select between tom and conga for the part. Congas are tuned higher and have no noise component like the toms have. Accent affects both pitch envelope and volume of the congas and toms.
- In 909 mode the switches have no effect. Accent mainly affects volume with some non linear effects (distortion).
- In 606 mode only the LT and the HT are available, and the switches have no effect. Accent affects volume and may cause distortion.

In SPL mode the T/C switch determines how the tuning parameter works. When the switch is in the bottom most position the tuning knob affects tuning. When the switch is in upmost position the tuning knob will affect a bitrate crush effect for the sample.

Rimshot/Claves

The Rimshot/Claves part has one parameter: Level, and a switch.

- In 808 mode the switch determines whether the part is a rimshot or a claves.
- In 909 mode only rimshot is available and the switch has no effect.
- In 606 mode this generator has no effect and will remain silent.

In SPL mode the switch has no effect.

Handclap/Maracas

The Handclap/Maracas part has one parameter: Level, and a switch.

- In 808 mode the switch determines whether the part is a handclap or a maracas.
- In 909 mode only handclap is available and the switch has no effect. The 909 handclap is virtually the same as the 808 one except the filters are tuned differently.



- In 606 mode this generator has no effect (since the 606 has no handclap) and will remain silent.

In SPL mode the switch has no effect.

Cowbell/Crash

The Cowbell/Crash part has one parameter: Tuning.

- In 808 mode the generator will play a cowbell-like sound. This sound is made up from two square waves which are fed through a filter. The tuning knob changes the center frequency of the filter.
- In 909 mode this generator will play a PCM sample of a cymbal crash. The tuning knob affects the tuning of the playback of the sample.
- In 606 mode this generator has no effect.

In SPL mode the tuning knob will affect the basic tuning of the sample.

Cymbals

The cymbal has three parameters: Level, Tuning and Decay.

The famous sauciness of the 808 and 606 cymbals come from the way their generators are designed. Six pulse-wave oscillators are mixed together and fed through various filters and non linearities and finally shaped by envelopes. ADM models these sounds in the same way for maximum accuracy.

- In 808 and 606 mode the tuning affects the tone of the cymbal by changing the mixture of high and low filtered components which make up the sound. The decay knob simply sets the decay rate of the cymbal.
- In 909 and SPL mode the tuning and decay knobs affect the sound as expected.

Hihats

The hihat parts have two parameters each: Level and Decay.

The hihats have similar architectures as the 808 and 606 cymbal, except they use only one or two components to make up the sound. The envelopes differ between



the 606 and 808 hihats, while the 909 hihat is PCM based as on the original hardware. The two parts (Open and Closed Hihat) are mutually exclusive, in that triggering a closed hihat will cut off the sound of an open hihat. In 909 and SPL mode it is not possible to program a closed and open hihat on the same step, and only the last programmed step will sound (i.e if closed hihat is selected and programmed on a step it will clear any open hihat trigger on that same step automatically). For 808 and 606 generators the open and closed hihat may be triggered at the same time however the open hihat will immediately be shut off, producing a more accented type of effect to the closed hihat.

Pattern Controlled Fx (PCF)



The PCF has multiple functions, including a 12dB/octave (2-pole) filter with an envelope which can be triggered from a pattern programmed in the PCF part, as well as a mangler that can be used to distort the sound and create special effects. Additionally the PCF part can be used to automate any of the Instrument section parameters (including its own PCF parameters) to make interesting sweeps and patterns. Since pitch can be automated via the PCF it is possible to make advanced patterns or even program bass lines if the instrument has a long enough decay and tone.

Sound-wise the PCF only affects those instrument parts where FX is On.

The PCF section has 8 controls: Amount, Cutoff, Attack, Q, Decay, Mangle, On/Off and BP/LP.

- Amount - Sets the amount of filter envelope modulation when the PCF is triggered
- Cutoff - The basic cutoff frequency of the filter
- Q - The resonance or bandwidth of the filter. Higher settings produce a more 'wet' sound
- Attack - Sets the attack time for the filter envelope
- Decay - Sets the decay time for the filter envelope
- Mangle - The amount of mangler applied to the signal. While it seems that mangle is part of the filter it is actually a control of its own and always applied regardless if the PCF is on or not.
- On/Off - Enables or disables the filter

- BP/LP - Selects the mode of the filter: band-pass or low-pass

Note: It is possible to automate the PCF section's parameters, just as it is possible to automate any of the other instrument parameters.

Note: To make changes to the PCF part, make sure that the part selected (via the part selector) is **not** the PCF, otherwise any changes will automate the PCF parameters instead of making live changes to the sound.

Sequencing automation via the PCF



When the PCF part is selected ADM is in its parameter automation sequencing mode. In this mode any changes to the instrument parameters will be remembered for the particular step that is selected via the Step buttons. Only those steps which are set to On will affect the parameters on playback. A red box around the automated parameters will appear when the PCF part is selected.

This function is easiest to understand by looking at one of the included example patches or by the following example:

1. Clear the pattern
2. Select BD part and program a 4 beat pattern (that is set steps 1,5,9 and 13)
3. Set mangle to minimum and make sure PCF is set to Off
4. Select the PCF part
5. Select step 1 and set the BD tone parameter to minimum
6. Select step 5 and set the BD tone parameter to 25%
7. Select step 9 and set the BD tone parameter to 50%
8. Select step 13 and set the BD tone parameter to 75%
9. Select the BD part again
10. Press the Run/Stop button to play the pattern

You should hear the bass drum play with a different tone on each hit, and you should see the BD tone knob move with the pattern.

Now with the basic understanding of sequencing parameters you can use this to automate any desired parameter, including instrument selection for each step.

Note: Pattern write must be enabled to be able to change automation.

Note: It is not possible to automate changes sample selection. When in PCF



programming mode and selecting a sample no changes to the sample loaded will occur, however it is possible to switch between any of the synthesized generators and a SPL generator using this method.

Note: It is only possible for the PCF to sequence parameters when in Pattern mode.

Clearing automation of a single parameter

Ctrl+Click an automated parameter (with a red box) to clear automation. The red box will disappear and the parameter will be set to its default value.

Outputs/Options



The topmost section of ADM's GUI contains a number of sockets and a switch. The first 12 sockets (from left) are part and output sockets. The two sockets on the right are the master output sockets. These sockets respond to right-click (Apple-click on Mac) which brings up a context menu with additional options.

Solo/Mute



Clicking any of the sockets that correspond to an instrument part will mute or unmute that part. The socket will turn red when the part is muted. It is possible to solo a part by Ctrl+Clicking a socket, which will mute every other part. Ctrl+Clicking the socket again will unmute all parts.

Clicking the left most socket (that corresponds to the accent part) will unmute all parts.

Routing Presets

Right-Clicking (Apple-Click on Mac) the accent part (leftmost) socket will bring up the routing presets:

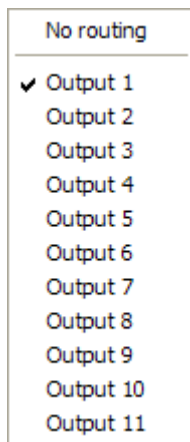


- No Routing - Clears all routings
- Multi Out - Each instrument gets it own output from 1 for the Bass Drum to 11 for the Closed Hihat

Other common routing presets appear in the menu which can be read such as:
Output: Instrument

If one output is used for multiple instruments, the instruments are grouped within parenthesis.

Instrument/Part routing



Right clicking (Ctrl+Click on Mac) any of the instruments' output sockets will bring up a menu where an output may be selected.

Master Output



Right clicking (Apple+Click on Mac) any of the two Master output sockets will bring up the output menu with some additional options. The settings are exactly the same

for the two sockets and the settings affect both right and left channels in the same way.

- Output Model - Changes the master output model between Clean, Old (which is a more colored output), Older (even more colored, with some emphasis on middle frequencies), Low boost (boosts the low frequencies).
- Output limiter - Selects the output limiter which can be None, Soft (gives the master outputs a rounder sound) or Hard (does not affect sound unless the master outputs are clipping).
- PCF Routing - The routing of the filter and mangler can be changed from the default Filter->Mangler (filter output is fed to mangler) to Mangler->Filter (mangler output is fed to filter). In the second case the mangler also switches behavior to be more of a typical overdrive effect.

Option/Patch Menu



- Patch library - All the patches are sorted into the patch library and can be selected or loaded and saved here.
- Load Patch - Load one or more patches. It is possible to select multiple patches, in which case these will be loaded into the current selected pattern slot and consecutive pattern slots (up to slot #127)
- Save Patch - Saves the current pattern together with its parameters, automation and sample references to a selectable filename
- Activate/Deactivate MIDI learn - Activates/deactivates MIDI learn mode (see section MIDI Learn)
- Select skin - Allows selection of any installed skins. The GUI editor must be closed and reopened for the new selection to take effect
- Floating display: On/Off - Enables or disables the floating display which is shown when changing a parameter, or when resting the mouse cursor over a control.
- Pattern Parameters: On/Off - Determines if a patches' parameters should be set when changing or loading a patch. For example, if ADM is set up to only run with 808 generators and is automated from the host, turning Pattern parameters Off will allow smooth transitions of parameters even when



changing patterns. This option is also useful for copying patterns between slots without affecting the parameters.

- MIDI Velocity mode: Single/Multi - Sets ADM's MIDI Velocity mode
- Enable/Disable sample selection - When this option is enabled ADM will show samples in the instrument selection menus. A dialog is displayed with the path to the folder where the user may install samples.

Note: After enabling sample selection ADM's GUI editor must be reopened. This is because ADM only rescans samples at GUI open time to reduce plug-in overhead.

- 808 - Sets all generators to 808 for the current pattern
- 909 - Sets all generators to 909 for the current pattern
- 606 - Sets all generators to 606 for the current pattern (Note: certain instruments are not available in 606 mode, those instruments will remain silent, for example Mid Tom, Rim Shot/Claves, Hand Clap/Maracas and Cowbell).
- Import 909 Sysex - Brings up the file dialog which allows selection of a sysex image (See Importing 909 Sysex)
- Import Rebirth pattern - Brings up the file dialog which allows selection of Rebirth 338 Song file (.rbs) (See Importing Rebirth 338 V2 Patterns).
- About ADM - Display the version, credits and user license information
- Visit website - Takes you to the AudioRealism website, where you may check for updates.

Using Multiple Outputs

ADM has a total of 13 outputs (Master Left, Master Right and 11 mono outputs). When ADM is inserted as a multi-channel instrument it is possible to take the output of each instrument and process them individually. When an instrument is routed it will disappear (as on the original 808 or 909) from the Master Output, and therefore not be affected by the master volume, PCF filter or mangler, or any selections made to the master output.

See the sections on Routing Presets and Instrument Routing to learn how to set the routings.

MIDI Learn

ADM has a learn function which enables the use of any external controller. This function is available in the Options menu.



1. Activate MIDI learn in the Option menu or via the quick button.
2. Select a control on ADM's panel and adjust it a bit.
3. Turn the MIDI controller you want to assign to that control. You should see the control on screen moving accordingly.
4. Continue with all controls that you wish to assign.
5. Deactivate MIDI learn in the Option Menu or via the quick button.

When ADM is closed (for instance when removing the plug-in from your mix, or closing the host sequencer) the controller map is automatically saved. Next time you load ADM it will recall the settings you have made.

Patches

A patch comprises of a maximum of four parts: The rhythm data, parameters, automation and references to samples.

The rhythm data is the basic rhythm of the pattern - when each of the instruments (including accent and PCF) trigger on each step.

Parameters are all the storable settings in the instruments section, including shuffle, flam and volume for the patch.

Automation is the automation sequence used by the PCF for each step.

Sample references are the paths and filenames of the sample a patch might use.

Using samples

It is possible to use your own samples with ADM, which are played back using a high quality interpolation algorithm, keeping the sound crisp even after retuning. To be able to select samples, activate the *Enable Samples* option in the option menu. A dialog will be displayed with the path to a folder where you may put your samples. The folder may contain subfolders so you may categorize your samples. Any samples in the 'root' of the Samples folder will appear directly in the instrument selection menu, so if you plan on using a lot of samples placing them in a subdirectory is a good idea, for example /Samples/Samples/.

When a sample is loaded into an instrument slot the sample is global for all patterns, so a maximum of 11 samples can be loaded since there are 11 instrument parts. When a sample is loaded the word SPL will appear in the instrument selector. It is possible to modify the playback of a sampled part in various ways depending on which slot it is loaded in to, for example sample offset, filter, tuning, decay and bitrate crush.

When a patch is loaded that contains references to samples ADM will replace any of the current loaded samples with the ones referenced by the patch.



The patch only remember references (that is the filename and path) to the sample and does not remember the actual sample data. If you wish to move a patch from one installation of ADM to another you may need to edit the .pcm files for the patch to reflect the directory structure of the second installation. It is possible to set the sample directory by adding a line to Config.ini which resides in the installation directory for ADM:

PC

SamplesDir = "f:\samples\" (PC)

Mac

SamplesDir = "/Library/Application Support/Samples/"

Note that the path must be enclosed in quotes (") and the final backslash (\) or forward slash (/) must be added.

Note: ADM only supports 16-bit PCM (standard uncompressed) .aif and .wav files. If a sample fails to load, try opening it in a wave editor and re-saving as a standard wave file. ADM assumes that the root sample rate for the sample is 44.1kHz.

Note: ADM's sample scanner is only intended to work with a small amount of samples, using more than 200-300 samples could introduce performance problems when opening the GUI editor on slower machines.

Programming beats

ADM operates in two modes: Pattern or Note.

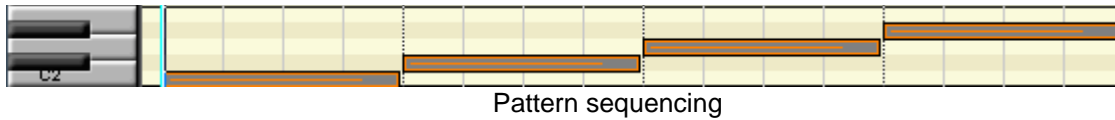
- In Pattern mode MIDI notes select a pattern to be played back and responds to start and stop messages to run the sequencer.
- In Note mode ADM behaves more like a traditional MIDI device, in that playing notes will directly trigger sounds.

Using Pattern Mode

Each MIDI note (0-127) corresponds to an ADM pattern. *Note on* messages start playback of the pattern, and *note off* message stops playback. MIDI velocity information is not used in this mode.

Pattern sequencing is done by using the draw/pen tool (or similar) in the host sequencer. Simply draw in the keyboard grid/matrix view how long each pattern should play.

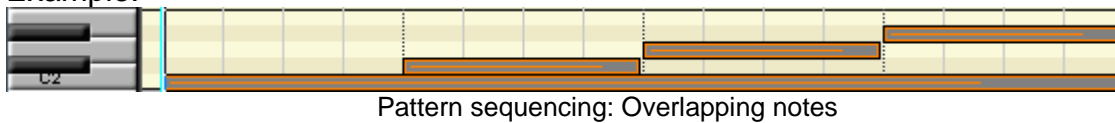
Example:



Assume all patterns are 16 steps long. Since the notes are not overlapping, the sequencer will retrigger and each pattern will play back steps 1-4.

It is possible to cut off a pattern in the middle by using overlapping notes.

Example:



In this situation the C2 note is never released. Since C#, D and D# overlap this note the sequencer will not retrigger and this will play back pattern C steps 1-4, C# steps 5-8, D steps 9-12 and D# steps 13-16. This opens up possibilities to create new interesting patterns from those in ADM's memory.

There are two things to keep in mind when using overlapping patterns:

A re-trigger of the sequencer occurs when a note on event is received, and no pattern is currently playing. If more than two patterns are overlapped then ADM will return to the *highest pattern* when a note off message is received. A good rule is to never use more than two overlapping patterns to avoid confusion.

When switching from a pattern with a greater number of steps to a shorter one (for example: going from 16 step pattern to a 4 step) the internal sequencer will start on the remaining step. Example: if ADM is on step 13 and switches to a 4 step pattern, the first step played in the new pattern will be 2, since the remainder of $13/4$ is 1 (the second step counting from zero).

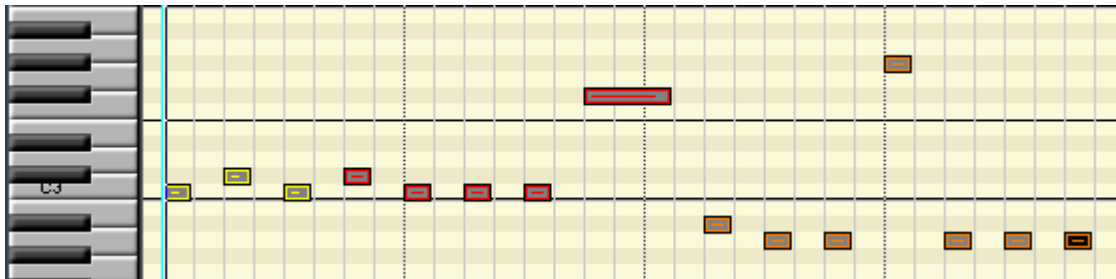
There are two more ways to affect the way patterns are played back: Shuffle and Flam

- Shuffle (or Swing): Gives a pattern more 'groove'. When shuffle is On every second step will be delayed by an amount proportional to the shuffle amount and tempo settings which creates a nice effect often found in 909 patterns. ADM extends the range of shuffle, and on the maximum setting every second step will actually be skipped completely.
- Flam: This is typically used to produce snare-rolls, and has a special effect on the loudness on any of the 909 generators. The flam amount is tempo independent since the retriggering is done by an internal counter that is not linked to tempo.

Using Note Mode

When ADM is in Note mode it acts as a normal MIDI device and the internal sequencer is disabled. ADM reacts to velocity in two different ways depending on the velocity mode: Single or Multi

- **Single** - When in Single mode ADM will only respond to velocity such that it will play an accented hit when velocity is above MIDI value 100. If multiple hits are triggered simultaneously and any of them are accented, then all hits will be played accented. This is so as to mimic the behavior of the 808 and 606 which can only play accented or unaccented hits for a given step (and not per instrument).
- **Multi** - ADM will respond more as a traditional drum machine in that the velocity will affect the volume of each instrument independently, with velocity 0 being the most quiet (inaudible) hit, and 100 being the maximum unaccented hit. Velocities above 100 will produce an accented hit for the instrument. When velocity is 127 the maximum volume is achieved, together with accent.



Example of programming in Note mode

The basic layout for triggering drum parts is laid out as on the TR-909 for compatibility. Refer to the table below:

| <i>MIDI Key Number</i> | <i>MIDI Note</i> | <i>Part</i> |
|------------------------|------------------|----------------|
| 35 | B-2 | BD Accented |
| 36 | C-3 | BD |
| 38 | D-3 | SD Accented |
| 40 | E-3 | SD |
| 41 | F-3 | LT/LC Accented |
| 43 | G-3 | LT/LC |
| 45 | A-3 | MT/MC Accented |



| <i>MIDI Key Number</i> | <i>MIDI Note</i> | <i>Part</i> |
|------------------------|------------------|----------------|
| 47 | B-3 | MT/MC |
| 48 | C-3 | HT/HC Accented |
| 50 | D-3 | HT/HC |
| 37 | C#3 | RS/CL |
| 39 | D#3 | CP/MA |
| 49 | C#4 | CB |
| 51 | D#4 | CY |
| 46 | A#3 | OH |
| 42 | F#3 | CH Accented |
| 44 | G#3 | CH |
| 52 | E-4 | PCF |

The keys for triggering accented parts are only available when a 909 or SPL generator is selected. In other cases the accented key has no effect.

Importing 909 Sysex

ADM can import patterns via sysex dump from the TR-909. The patterns will be imported into slots 0-31.

Please refer to your TR-909 Operation Manual for instructions on how to initiate a sysex dump.

AudioRealism has created a dedicated tool specifically for dumping patterns from the TR-909. This tool will be available as a free download at <http://www.audiorealism.se>.

Importing Rebirth-338 Patterns

ADM can import Rebirth RB-338 (V2) song files into patterns according to the following scheme:

808 Patterns are imported into ADM patterns 0-31
909 Patterns are imported into ADM patterns 32-63

The parameter settings from Rebirth be imported into ADM but may not sound exactly the same due to differences in instrument tunings etc.



Specifications

Plug-in

- PC: Standard VST2.3 instrument plug-in
- Mac OS X: Audio Unit
- Sample rates supported: 44.1kHz, 48kHz and 96kHz

Sound capabilities

- 13 Parts (Including Accent and PCF)
- 11 Voice polyphony
- 25+ Generators, 34 sounds

Internal sequencer:

- 128 Patterns
- 32 Steps per pattern
- 4 Prescale (timing) modes per pattern
- Flam and Shuffle