ISOTONIK STUDIOS

ASTEROIDS

‘Asteroids’ is a **Generative Arcade Sequencer.** Inspired by the classic arcade game, asteroids move around an 8x8 grid triggering notes when they collide with each other. Advanced sequencing modes makes Asteroids a powerful sequencer for both experimental/generative melodic sequences or precise/polyrhythmic drum patterns

The Arcade Series is a collection of generative sequencers that can be used on their own or integrated with Ableton supported controllers. Designed and created by Ableton Certified Trainer Mark Towers each device takes it’s inspiration from the hours spent in front of flickering screens down the local Arcade…

GLOBAL CONTROLS

❶ **Control Surface Menu**

Select a supported control surface from the menu, if control surfaces do not appear press the button to the right to re-load. Make sure you select the control surface as specified by the device version

❷ **Global Rate**

Depending on the control mode, this will update the rate of all asteroids (1 - 8), all rates are synchronised to Live's BPM

❸ **Global Style**

Depending on the control mode, this will update the style of all asteroids (1 - 8)

❹ **Global Direction**

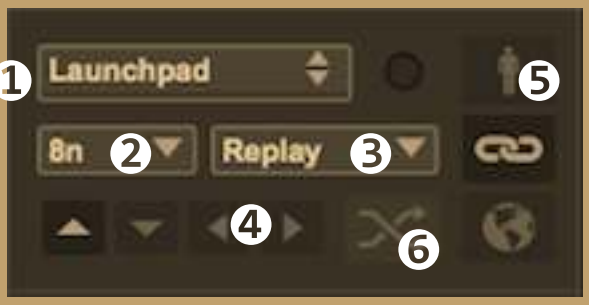
Use these arrows to set the direction of all asteroids both active and non-active

❺ **Control Modes**

Single - deactivates the global controls, all asteroids will be controlled independently
Link - changes made via the global controls will update the matching controls per asteroid section (1 -8)
Global - deactivates individual control of asteroid sections, global controls directly affect the asteroids, without updating the UI controls

❻ **Shuffle**

When the control mode is set to 'Global' the Shuffle button becomes active and allows for randomising of the global controls with a single press



MIDI

MIDI settings differ depending on the instrument mode currently set, either keys or drums. See ‘modes’ section

❶ **Scale**

Select a scale for the note output of the device. Selecting ‘user’ will enable the user mode

❷ **Range**

Determines the range of semitones being generated, if set to 5 for example in the scale of C Major, the first 5 semitones will be used starting from C and in the C Major scale. Maximum range values will change depending on which scale is selected

❸ **Keyboard**

When in user mode (scale) it is possible to create your own scale by highlighting notes on the keyboard, choosing which notes are to be included in the first octave is calculated for the entire range automatically.

❹ **Velocity**

Sets the velocity of all notes generated when in keys mode

❺ **Random**

Randomises the velocity of all notes generated when in keys mode

❻ **Length**

Sets the length of all notes generated when in keys mode

❼ **Chance**

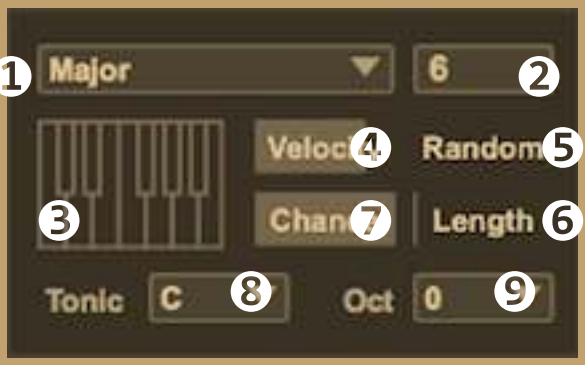
Determines the possibility of notes being generated when asteroids meet

❽ **Oct**

Transposes the notes being generated in octaves (-64/+64)

❾ **Tonic**

Sets the root key for the scale



Ghost Machine

The Ghost Machine generates additional notes based on where the asteroids meet on the grid. It has independent control for delay, octave, velocity, random, and chance. All ghost notes will be generated in the same scale as selected in the scale menu

❶ **Power**

Turn the Ghost Machine off and on

❷ **Delay**

Selects when the ghost notes will be generated after asteroids meet, for example with a setting of 4n ghost notes will be generated one beat after two asteroids meet

❸ **Transpose**

Independently transposes the ghost notes above or below the main notes being generated. The range is -24,-12/+12,+24

❹ **Chance**

Determines the chance of ghost notes being generated, a setting of zero effectively turns the ghost notes off, 50% will add some variation, 100% ghost notes will always generate when asteroids meet

❺ **Vel**

Sets the velocity of all ghost notes generated when in keys mode

❻ **Rnd**

Randomises the velocity of all ghost notes generated when in keys mode

❼ **Len**

Sets the length of all ghost notes generated when in keys mode

❽ **Ghost Grid**

This determines the actual pitch of the ghost notes, the ghost grid ensures the ghost notes being generated have some sort of relationship to the position of where two or more asteroids meet:

Mode 1 - ghost notes are mirrored, and generated in the diagonally opposite quarter of the 8 x 8 grid
Mode 2 - ghost notes are inverted, and generated in the diagonally opposite quarter of the 8 x 8 grid
Mode 3 - ghost notes are inverted, and generated in the same quarter of the 8 x 8 grid
Mode 4 - ghost notes are randomly generated over the 8 x 8 grid

Modes

❶ Asteroid Grid Menu

When two or more asteroids meet over a particular slot on the 8 x 8 grid, a note is generated, the note will fit into selected scale, but the layout of the scale can change.
For example, in 'Horizontal +' the lowest note in the scale will be positioned on the bottom left slot of the grid, notes will move up in semitones (within the scale) to the right until the highest notes is reached (top right slot of the grid)
Please see page 6 for illustrations

❷ Random

When active, the asteroid grid menu will be slowly randomised, moving between settings, this a cool way to change the sequence but still keep the pattern and scale

❸ Modes

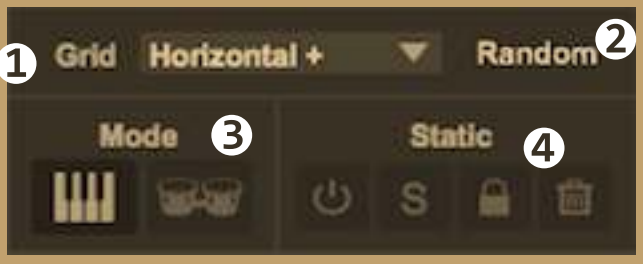
Choose between 'Keys' and 'Drums' modes:

Keys - Use this mode if using a chromatic instrument, it activates the MIDI section, in this mode, notes are generated when two or more asteroids meet, the note being generated is based on the scale selected, various MIDI settings (see above), and the position of where the asteroids meet (see asteroid grid menu above)

Drums - Use this mode with a drum rack (or drum instrument), it deactivates the main MIDI section and the Ghost Notes section, a new user interface appears replacing Ghost Notes. In this mode each asteroid is assigned a specific MIDI note value, by default this starts at C1, the intention here is to use this mode with a drum rack. When two or more asteroids meet, the will generate the note they have been assigned, regardless of where on the grid they meet. Use the sliders to control the settings of the notes being generated
(*See Static Mode on Page 6*)

❹ Static Mode

Static mode lets you assign static, or stationary asteroids on the grid. These asteroids will be orange, and do not move, but the interaction with moving asteroids is the same. By creating static patterns or shapes you can use just a few moving asteroids to create interesting melodies and rhythms. (*See Static Mode on Page 7*)



Horizontal +

57	58	59	60	61	62	63	64
49	50	51	52	53	54	55	56
41	42	43	44	45	46	47	48
33	34	35	36	37	38	39	40
25	26	27	28	29	30	31	32
17	18	19	20	21	22	23	24
9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8

Horizontal -

8	7	6	5	4	3	2	1
16	15	14	13	12	11	10	9
24	23	22	21	20	19	18	17
32	31	30	29	28	27	26	25
40	39	38	37	36	35	34	33
48	47	46	45	44	43	42	41
56	55	54	53	52	51	50	49
64	63	62	61	60	59	58	57

Spiral +

50	49	48	47	46	45	44	43
51	26	25	24	23	22	21	42
52	27	10	9	8	7	20	41
53	28	11	2	1	6	19	40
54	29	12	3	4	5	18	39
55	30	13	14	15	16	17	38
56	31	32	33	34	35	36	37
57	58	59	60	61	62	63	64

Spiral -

15	16	17	18	19	20	21	22
14	39	40	41	42	43	44	23
13	38	55	56	57	58	45	24
12	37	54	63	64	59	46	25
11	36	53	62	61	60	47	26
10	35	52	51	50	49	48	27
9	34	33	32	31	30	29	28
8	7	6	5	4	3	2	1

Vertical +

8	16	24	32	40	48	56	64
7	15	23	31	39	47	55	63
6	14	22	30	38	46	54	62
5	13	21	29	37	45	53	61
4	12	20	28	36	44	52	60
3	11	19	27	35	43	51	59
2	10	18	26	34	42	50	58
1	9	17	25	33	41	49	57

Vertical -

57	49	41	33	25	17	9	1
58	50	42	34	26	18	10	2
59	51	43	35	27	19	11	3
60	52	44	36	28	20	12	4
61	53	45	37	29	21	13	5
62	54	46	38	30	22	14	6
63	55	47	39	31	23	15	7
64	56	48	40	32	24	16	8

Drum Mode

Use Drum Mode with a drum rack (or drum instrument), it deactivates the main MIDI section and the Ghost Notes section, a new user interface appears replacing Ghost Notes. In this mode each asteroid is assigned a specific MIDI note value, by default this starts at C1, the intention here is to use this mode with a drum rack. When two or more asteroids meet, the will generate the note they have been assigned, regardless of where on the grid they meet. Use the sliders to control the settings of the notes being generated

❶ **Note Number**

Individually sets the MIDI note generated when the asteroid collides with another, the default starts at C1 and moves up in semitones (to work with Drum Racks)

❷ **Velocity**

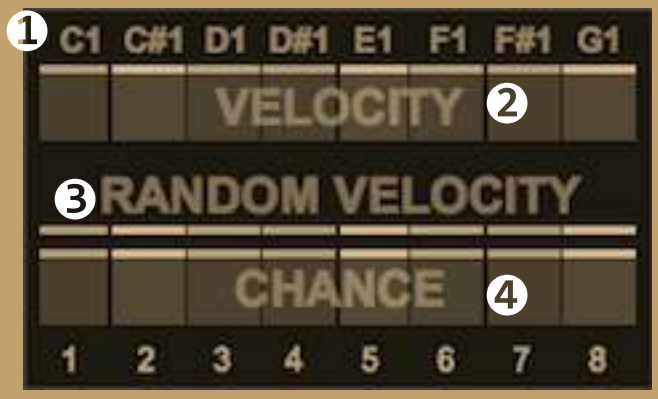
Individually sets the velocity of notes generated when in drums mode

❸ **Random Velocity**

Individually randomises the velocity of notes generated when in drums mode

❹ **Chance**

Individually determines the possibility of a note being generated when meeting another asteroid



Static Mode

Static mode lets you assign static, or stationary asteroids on the grid. These asteroids will be orange, and do not move, but the interaction with moving asteroids is the same. By creating static patterns or shapes you can use just a few moving asteroids to create interesting melodies and rhythms

❶ **Power**

Turns static mode off and on

❷ **Solo**

Solo's static mode so that notes are only generated when moving asteroids meet static ones, notes will not be generated when two or more moving asteroids meet. This can be useful if using Asteroids for drum sequencing and more precision is required rather than generative outcomes

❸ **Edit (lock/unlock)**

Turn this on to add static asteroids to the grid, turn it off when you want to go back to generating moving asteroids

❹ **Trash**

Will erase all static asteroids from the grid

Asteroid Section (1 - 8)

This section controls the individual setting for each asteroid (see Global Controls for global control of these sections) this is the heart of the device, each asteroid has its own sequencer, applying unique settings to each asteroid will offer a wide range of results

❶ **Rate**

Sets the rate at which an asteroid will move across the grid, synchronised to Live's BPM

❷ **Style**

Choose from a range of styles in which asteroids will move around the grid:

Replay - moves in a continuous pattern repeating the same 8 steps
YoYo - moves in an up/down style, this can create polyrhythms when combined with other styles as it loses a step when turning round
Classic - like a traditional step sequencer, asteroids will move through each row or column of 8 steps, then onto the next, and so on
Snake - similar to Classic, but weaves like a snake back and forth across rows or columns, ssssss…
Nudge - Randomises the row or column at the end of the 8 steps
U-Turn - Randomises the direction at the end of the 8 steps
Gyro - Randomly selects between horizontal and vertical at the end of the 8 steps
Chaos - Randomises using the Nudge and U Turn modes
Spiral - Moves in a spiral from the outside in, or inside out depending on direction chosen

Please see page 10 for illustrations

❸ **Direction Arrows**

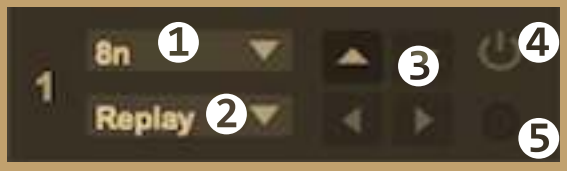
Select an initial direction that the asteroid will start in, can also be used to change the direction whilst the asteroid is moving

❹ **Power Button**

Will activate when asteroid is trigger (by pressing a pad on a control surface or clicking in the square screen to the right)

❺ **Activator LED**

Lights up to indicate when the asteroid has collided with another



Replay

YoYo

Classic

Snake

Nudge

U-Turn

Gyro

Chaos

Spiral

GUI Section

❶ **GUI Screen**

Visual display for moving asteroids. Asteroids are blue, green asteroids indicate when two or more asteroids have met generating a note (depends on chance setting, see MIDI). Pink asteroids indicate ghost notes. Orange indicate static asteroids

It is possible to use Asteroids without a control surface, just click in the square screen to start asteroids, turn on static mode and the ‘edit’ option to add static asteroids via mouse.

❷ **Asteroid Deactivator Buttons (Push)**

Turning the ‘Flash’ icon on will allow the device activation buttons on Push to control the on/off state of the asteroids (1 - 8)

❸ **Global Asteroid On/Off**

Will turn on when one or more asteroids are active, use it to switch off all asteroids at once

❹ **Shuffle**

Press to randomise all asteroids settings (Rate, Style, Direction)

Push Controls

Make sure to load the ‘Asteroids(Push).amxd’. This version has been specially modified to work with Ableton Push for complete hands on control. Once you have selected ‘Push’ from the control surface menu, you should see a green light next to the menu, if you see a red light, it means the incorrect control surface has been selected for this version of Asteroids

❶ **8x8 Pads**

Use the pads to trigger asteroids; there are 8 in total. When the device is in Static Mode, and the ‘Edit (lock/unlock) is enabled, the pads will place stationary asteroids (orange pads) on the grid. When all asteroids are active, hitting pads will re-generate moving asteroids from the new position, starting at 1 through to 8 and so on

❷ **Arrow Buttons**

Use the arrow buttons to select the direction of the next asteroid triggered

❸ **Shift**

Holding **Shift** and pressing an arrow will cause all asteroids to change their current direction and move in the selected direction

❹ **Select**

Toggles the ‘Edit (lock/unlock)’ for the Static Mode

❺ **Asteroid De-activation Buttons**

Turn on the Deactivation setting on the device (*See GUI Section on Page 9*) the buttons will turn Pink, use these to turn off active asteroids

❻ **Device Controls**

Additional controls can be accessed via the 8 encoders and display screen on Push. Select the Asteroids device on Push, then press the ‘In’ button to see the 7 banks of controls:

Bank 1 – Essential controls including MIDI and Modes parameters
Bank 2 – Rate – Controls the rate of the 8 asteroids
Bank 3 – Style – Controls the style of the 8 asteroids
Bank 4 – Controls the MIDI note number for the asteroids in Drum Mode
Bank 5 – Controls the Velocity for the asteroids in Drum Mode
Bank 6 – Controls the Random Velocity for the asteroids in Drum Mode
Bank 7 – Controls the Chance for the asteroids in Drum Mode

Push Controls

Switching between tracks and between session mode and note mode work as normal when using Push to control Asteroids

Launchpad Controls

Make sure to load the ‘Asteroids(Launchpad).amxd’. This version has been specially modified to work with Novation Launchpad for complete hands on control. Once you have selected ‘Launchpad from the control surface menu, you should see a green light next to the menu, if you see a red light, it means the incorrect control surface has been selected for this version of Asteroids. To use the Launchpad select ‘User 2’ mode

❶ **8x8 Pads**

Use the pads to trigger asteroids; there are 8 in total. When the device is in Static Mode, and the ‘Edit (lock/unlock) is enabled, the pads will place stationary asteroids (amber pads) on the grid. When all asteroids are active, hitting pads will re-generate moving asteroids from the new position, starting at 1 through to 8 and so on

❷ **Arrow Buttons**

Use the arrow buttons to select the direction of the next asteroid triggered

❸ **User 2 Button (held down)**

Toggles the ‘Edit (lock/unlock)’ for the Static Mode, so that static asteroids can be placed on the grid
Pressing the direction arrows will set the ‘Global Direction’ (affecting all asteroids, if in Linked mode!)
Side buttons will set the ‘Style’ for the next Asteroid to be launched

❹ **Asteroid De-activation Buttons**

Use these to switch off active asteroids