



ARGON8

Modal Argon8

8 voice polyphonic wavetable synthesiser

User Manual

OS Version - 1.0



Important Safety Information



WARNING – AS WITH ALL ELECTRICAL PRODUCTS, care and general precautions must be observed in order to operate this equipment safely. If you are unsure how to operate this apparatus in a safe manner, please seek appropriate advice on its safe use.

ENSURE CORRECT PSU POLARITY - FAILURE TO DO SO MAY CAUSE PERMANENT DAMAGE - RECOMMENDED USE WITH PROVIDED POWER SUPPLY

This apparatus **MUST NOT BE OPERATED NEAR WATER** or where there is risk of the apparatus coming into contact with sources of water such as sinks, taps, showers or outdoor water units, or wet environments such as in the rain. Take care to ensure that no liquids are spilt onto or come into contact with the apparatus. In the event this should happen remove power from the unit immediately and seek expert assistance.

This apparatus produces sound that could cause permanent damage to hearing. Always operate the apparatus at safe listening volumes and ensure you take regular breaks from being exposed to sound levels

THERE ARE NO USER SERVICEABLE PARTS INSIDE THIS APPARATUS. It should only be serviced by qualified service personnel, specifically when:

- The apparatus has been dropped or damaged in any way or anything has fallen on the apparatus
- The apparatus has been exposed to liquid whether this has entered the apparatus or not
- The power supply cables to the apparatus have been damaged in anyway whatsoever
- The apparatus functions in an abnormal manner or appears to operate differently in any way whatsoever.

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00

Introduction

Modal Argon8 is an 8-voice polyphonic wavetable synthesiser.

It features four digital oscillators per voice split into two controllable wavetables with one innovative offline wave modifier available per wavetable with 32 different options to redraw each wavetables and one modulatable oscillator modifier available per patch with 8 modifier types to choose from.

There are 4 flexible multi-mode filters and 3 dedicated flexible envelope generators for AMP, MOD and FILTER that can be accessed independently or all three simultaneously on board.

Argon8 also boasts a hugely powerful “Mod Matrix” with eight assignable slots and four additional fixed routes, 11 mod sources and 52 destinations.

The 4-axis joystick can be assigned to a huge range of modulation destinations and can be ‘locked’ in place when desired.

There are two Audio rate LFO's with tempo sync (one poly, one global). Polyphonic LFO can sync to frequency divisions.

Argon8 has 12 on board FX; a waveshaping distortion that is followed by three incredibly powerful, independent and user configurable stereo FX engines that can create sophisticated Delays, lush Reverbs, Flanging, Phasing, and Rich Choruses to name a few.

The hardware has been manufactured with high-quality components: a powder coated black steel case, anodised aluminium top panel, endless encoders and a super bright white on black OLED screen.

Among the many connections, Modal Argon8 features a USB port to connect your synth to the MODALapp user interface on a computer tablet or phone. This can be used for preset design and management as well as updating the firmware on your Argon8 (please see ‘Updates’ section).

Specification

- True 8 voice polyphonic
- 120 carefully crafted wavetables split into 24 banks of 5 morphable waveform sets, covering virtual analogue classics through to cutting edge EDM and many from the original Modal 002 as well as a whole range of mathematically generated tables. Additional PWM bank and 3 noise/modulation banks accessible on Oscillator 2
- 32 static wavetable modifiers including, de-rez, wave folders, wave shapers, phase shapers and rectify that can be applied to the 120 wavetables to give a mind boggling array of permutations and new waveshapes.
- 32 high resolution wavetable oscillators, 4 per voice
- 8 types of oscillator modifier including: Phase Mod (FM), Ring Mod, Amp Mod, Hard Sync and Windowed Sync
- Voice Drift and Width controls that help to create massive stereo soundscapes
- Multiple keyboard modes, Mono, Poly, Unison 2, unison 4, unison 8, Stack 2 and Stack 4
- Inbuilt sophisticated programmable arpeggiator of 32 steps with rest capability with up to 2048 steps before repeating
- Glide/Portamento with both legato and staccato modes
- 4 Filter types. All filters types are 2 pole state-variable filters, the 'Standard' filters are based on the resonant filter found in other Modal products (SKULPTsynth, CRAFTsynth2.0). The 'Classic' types have a more rounded character and a softer resonance response.
- 8 assignable modulation slots
- 4 additional fixed modulation routings for common assignments
- 11 modulation sources
- 52 modulation destinations
- 4-axis joystick that can be assigned to a huge range of modulation destinations and virtually 'locked' when desired
- 3 dedicated envelope generators for AMP, MOD and FILTER that can be accessed independently or all three simultaneously including negative (reverse) versions
- 2 Audio rate LFO's with tempo sync (one poly, one global). Polyphonic LFO can sync to frequency divisions
- Waveshaping distortion
- 3 incredibly powerful independent and user configurable stereo FX engines for Chorus, Phaser, Flanger (Pos), Flanger (Neg), Tremolo, LoFi, Rotary, Stereo Delay, Ping-Pong Delay, X-Over Delay and Reverb that can be arranged in any order
- 32-step programmable arpeggiator
- Real time sequencer with 512 notes with input quantise and four recordable / editable parameter animations (Delay FX, LFO's, sequencer and arpeggiator can be either clocked internally or externally)

Specification

- 500 patch memories, all fully editable and ships with 300 factory programs
- 200 user patch spaces. Patch upload and download through the free MODALapp
- 100 sequencer presets that can be linked to any patch for quickly loading arrangements
- 100 FX presets
- 8 Quick Recall slots accessible from the panel for quickly loading your favourite patches
- Analogue clock sync in and out (configured to the KORGE / Teenage Engineering specification)
- MIDI DIN in and out
- Full size quarter inch jacks for stereo audio outs, headphones and external control such as sustain and expression
- 3.5 mm stereo input with ability to route incoming audio through the FX
- FATAR TP9/S Full size 37 key keybed with both velocity and aftertouch
- 1.54 inch large OLED display – that provides instant visual feedback to the user at all times of playing/editing
- Class compliant MIDI provided over USB connection to host computer or tablet
- Optional MODALapp software editor available for macOS, Windows, iOS and Android
- MODALapp can also be run within your Digital Audio Workstation (DAW), with VST3 and AU versions available
- Power: DC-9.0V - 1.5A center-positive
- Road ready Steel and Aluminium chassis

Dimensions

- Width: 555mm – 22 inches
- Depth: 300mm – 11-3/4 inches
- Height: 100mm – 4 inches

01

Getting Started

Basic Functions

Powering on

Connect the power lead to your Argon8 then connect the outputs of the Argon8 to your mixer, or if you prefer, connect your headphones. Optionally connect a USB cable from your computer or tablet device to the Argon8 for MODALapp communication.

Before powering up ensure the volume control to any speakers is at minimum, power on can create a 'pop' and this may cause damage to your speakers and the sound guy's ear drums.

Then power on.

You will see a loading animation on the screen. When the synth has loaded it will change to show the main patch page.

Press down a key and slowly turn up the volume to a comfortable level.

Screen Control

The Modal Argon8 interface is designed to be extremely intuitive and easy to use, so that all the most important parameters are easily accessible and tweakable directly from the top panel, however, all functions are also accessible and tweakable on-screen using the two indented encoders.

These two switched-encoders are located either side of the screen are used for screen navigation and control and can be clicked to either switch mode or trigger / modify the selected function:

- **Page/Param** - When this encoder is in 'Page' mode (top row of on-screen text) it cycles through the parameter pages / groups (e.g. Osc1, Osc2, Filter); when it's in 'Param' mode (bottom row of on-screen text) it cycles through the parameters on that page / group. Use the switch by clicking the encoder to toggle between the two modes, where the mode is displayed on the screen with a line at top for 'Page' mode and at the bottom for 'Param' mode.
- **Preset/Edit (/Bank)** - This encoder/switch is used to adjust the currently selected value or 'trigger' the currently displayed parameter. When the panel is in 'Shift' mode the 'Load Patch' encoder is used to select the patch bank number, jumping up or down in increments of 100.

Basic Functions

Secondary functions

Argon8 is a comprehensive and fully featured synthesiser despite its small size. Therefore there are a number of user interface combinations that are required to access some of the deeper functions of the synth. The top panel UI has 4 buttons that can access secondary functions.

These are the **SHIFT**, **PATCH**, **VELO** & **ARP** buttons.

To access the functions labelled in light blue text you may either press 'Shift' to latch shift mode or use it momentarily by holding 'Shift' and turning an encoder or pressing a button.

Once let go the panel will return automatically to it's regular non-Shift state.

To access the functions on the panel labelled in light grey text (3 buttons bottom left, 3 buttons and 2 encoders bottom right), hold the button in that section that has a light grey ring ('Velo' button or 'Arp' button) and press the relevant button. NOTE: These combinations are momentary, not latch-able.

The 'Patch/Seq' button is primarily used to switch the screen to either the 'Load Patch' or 'Load Seq' param for loading patches or sequences, entering the panel into either 'Patch' mode or 'Seq' mode. When in 'Patch' mode the 'Save' and 'Init' buttons are used for patch preset management, however when in 'Seq' mode the 'Save' and 'Init' buttons are used for sequence preset management. When the white LED above this button is lit, it signifies that the panel is in 'Seq' mode.

When held the 'Patch/Seq' button can also be used to select 'WavMod's for each wavetable by turning either of the 'Wave1' or 'Wave2' encoders, to select the Filter Type by turning the 'Cutoff' encoder, to select the 'Arp Gate' length by turning the 'Arp' encoder or, to dial in the amount of dynamics processing being applied by the 'Patch Gain' function by turning the 'Volume' encoder.

The 'Init / Rand' button/functions respond to a button hold.

Navigating and Loading Preset

To navigate through and load patches first press the 'Patch/Seq' button to return to the Patch page and use the 'Preset/Edit' encoder to scroll through presets. Click this encoder in on the desired preset to load it. An asterisk will appear on next to the current preset name to indicate unsaved edits.

Init Preset

Press and hold the 'Init' button, a confirmation message will appear on-screen however the preset will not be overwritten until saved.

Basic Functions

Randomise Preset

Either when in 'Shift' mode or while momentarily holding 'Shift' press and hold the 'Rand' button, a confirmation message will appear on-screen however the preset will not be overwritten until saved. Randomise is only available for patches.

Save Preset

First press the 'Save' button to enter the 'full' save procedure (setting preset slot and/or name - see below), or hold the 'Save' button to perform a 'quick' save (saving preset directly into current slot with current name).

Once you are in the 'full' save procedure, presets are saved in the following way:

Slot Selection

Use the 'Preset/Edit' encoder to select the preset bank/number to save into, and press the 'Edit' switch to select it.

Naming

Use the 'Page/Param' encoder to select the character position, and use the 'Edit' encoder to select the character. Press the 'Preset/Edit' switch to finish editing the name. There are a number of panel shortcuts here:

- Press 'Oct-' to jump to lowercase characters
- Press 'Oct+' to jump to uppercase characters
- Press 'Transpose' to jump to numbers
- Press 'Chord' to jump to symbols
- Press the 'Page/Param' switch to add a space (increment all above characters)
- Press 'Init' to delete the current character (decrement all above characters)
- Hold 'Init' to delete the entire name

Confirming

Press the 'Preset/Edit' switch to confirm the settings and save the preset.

At any point during the save procedure hold the 'Page/Param' switch to move back a step.

To exit/quit the procedure without saving the preset, press the 'Patch/Seq' button.

UI Combinations

Quick Recalls

Argon8 has 8 Quick Recall slots for quickly loading presets. Quick Recalls are controlled using the following button combos:

- Hold 'Patch' + hold one of the eight buttons on bottom left of the panel to assign the currently loaded patch to a QR slot
- Hold 'Patch' + press one of the eight buttons on bottom left of the panel to load the patch in the QR slot

LFO

- Turn the 'Rate' encoders into the negative range to access synced rates

Oscillators

- Hold the 'Patch' button and turn the 'Wave1' or 'Wave2' encoder to control the WavMod parameters

Filter

- Hold the 'Patch' button and turn the 'Cutoff' encoder to control the Filter Type parameter

Envelopes

- Hold any of the EG buttons for one second and then turn the ADSR encoders to adjust all envelopes simultaneously
- Press the MEG button when MEG is already selected to latch MEG assign

Sequencer

- Hold the 'Mute' button to clear the sequencer notes
- Hold the Anim1 / Anim2 / Anim3 / Anim4 buttons to clear an animation lane
- When the screen is displaying the 'Linked Sequence' parameter, hold the 'Edit' switch to set the value to be the currently loaded sequence.

Arp

- Hold the 'Arp' button and press keys on the internal or an external keyboard to add pattern notes or press the 'Rest' button to add a rest to the pattern
- Hold the 'Patch' button and turn the 'Division' encoder to control Arp Gate

UI Combinations

Keyboard/Voice

- Press 'Unison' repeatedly to cycle through the different unison modes; press 'Stack' repeatedly to cycle through the different stack modes
- Press 'Chord' whilst holding a chord on the internal or an external keyboard to set the chord mode chord.
- Hold 'Transpose' and press a key on the internal keyboard to transpose all notes, where the central C key is the root note. Press 'Transpose' with no keyboard interaction to reset the transpose value back to 0.

Modulation

- To assign a Mod Slot either hold (momentary) or latch the desired Mod source button - then set a depth by turning desired modulation destination parameter encoder
- When latched in a Mod Source assign mode pressing the flashing Mod Source button again will exit assign mode
- Mod source button + 'Depth' encoder - set global depth for that mod source
- Press ModSlot repeatedly to cycle through and view all mod slot settings on the screen
- When the screen is displaying a mod slot 'Depth' parameter (most easily accessed via assigning modulation using the panel or via the ModSlot button), hold the 'Edit' switch to clear the mod slot assignment.
- To assign a mod source to an osc's global frequency destination, use either of the fine tune controls. 'Tune1' will assign to Osc1 tune, 'Tune2' will assign to Osc2 tune.

FX

- Press FX1 / FX2 / FX3 button repeatedly to change the FX type of the slot
- Hold FX1 / FX2 / FX3 button to reset the FX type of the slot to 'None'
- Turn the 'B' encoder into the negative range for the slot with a Delay FX assigned to access synced delay times
- Press FX1 + FX2 + FX3 to jump to the 'FX Preset Load' parameter

Global Settings

- When the screen is displaying the 'Reset' option, hold the 'Edit' switch to trigger the 'Reset' function.

02 Connections

Audio In

Audio Input on 3.5mm stereo/TRS jack.

Expression Pedal over standard 1/4" stereo/TRS jack from an external expression source.

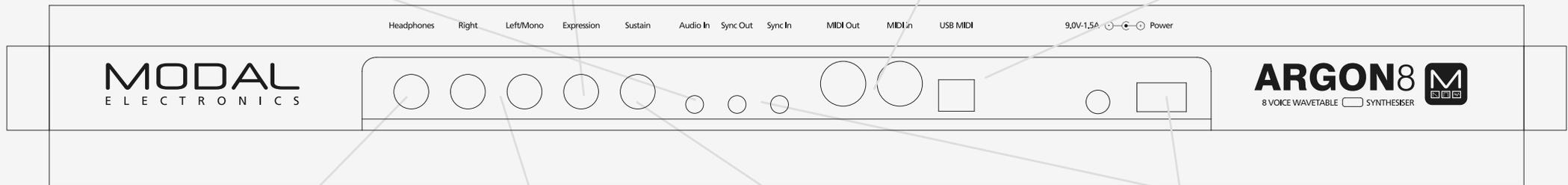
Argon8 works best with expression pedals that use the TRS polarity and have a resistance of 10k or above. However ARGON8 has a software configuration option for providing basic compatibility with RTS polarity pedals as well as for improving the compatibility with different resistances. If your expression pedal has a polarity switch we recommend setting it to the 'TRS' polarity (the default setting on most pedals). For setting maximum compatibility with your expression pedal's polarity and resistance value, please see the 'Settings - Pedal Type' section. If you are unable to configure Argon8 to work adequately with your expression pedal, you may need to use a TRS Polarity Adapter. Please note that expression pedals with the TS polarity will not work with Argon8.

MIDI (In, Out)

MIDI In / Out on MIDI 5-pin DIN cable. These outputs can be used to communicate with any other MIDI devices. The MIDI Out can be set to Thru using MODALapp or MODALplugin (See the MIDI section)

USB MIDI

Argon8 is a class compliant USB MIDI device and connects to a USB host via USB B Connection for MODALapp communication, MIDI input and MIDI output. Simply connect Argon8 to a USB socket, such as on your computer or tablet with a standard USB cable and find 'Argon8' listed as a MIDI port on your computer or tablet.



Headphones

Headphone output on 3.5mm Stereo jack. The volume can be adjusted using the VOLUME knob, the MODALapp, or through MDI CC. (See the MIDI section)

The headphone output will match the audio output so it can be either stereo or mono depending on the current audio out configuration.

Line Out

Line level stereo outputs on 1/4" mono/TS and stereo/TRS jacks. The left jack only will break the stereo circuit and collapse the signal to mono. These outputs can be connected to any line level input for monitoring and recording. The line output is higher quality than the headphone output, so always use it when recording or performing. The Line out level can be adjusted using the 'Volume' knob.

Sustain Pedal over standard 1/4" mono/TS or stereo/TRS jack from an external sustain pedal.

Note: Argon8 supports both types of sustain pedal polarities. "Positive / Normally Open" pedals can be connected / disconnected whilst Argon8 is powered on, however "Negative / Normally Closed" pedals must be connected before powering on the device and disconnected after powering off the device in order to work correctly. If your sustain pedal has a polarity switch we recommend setting it to the "Positive" polarity. If you are unsure of your pedal's polarity type, it is recommended to only connect / disconnected the pedal whilst the device is powered off.

Clock Sync (In, Out)

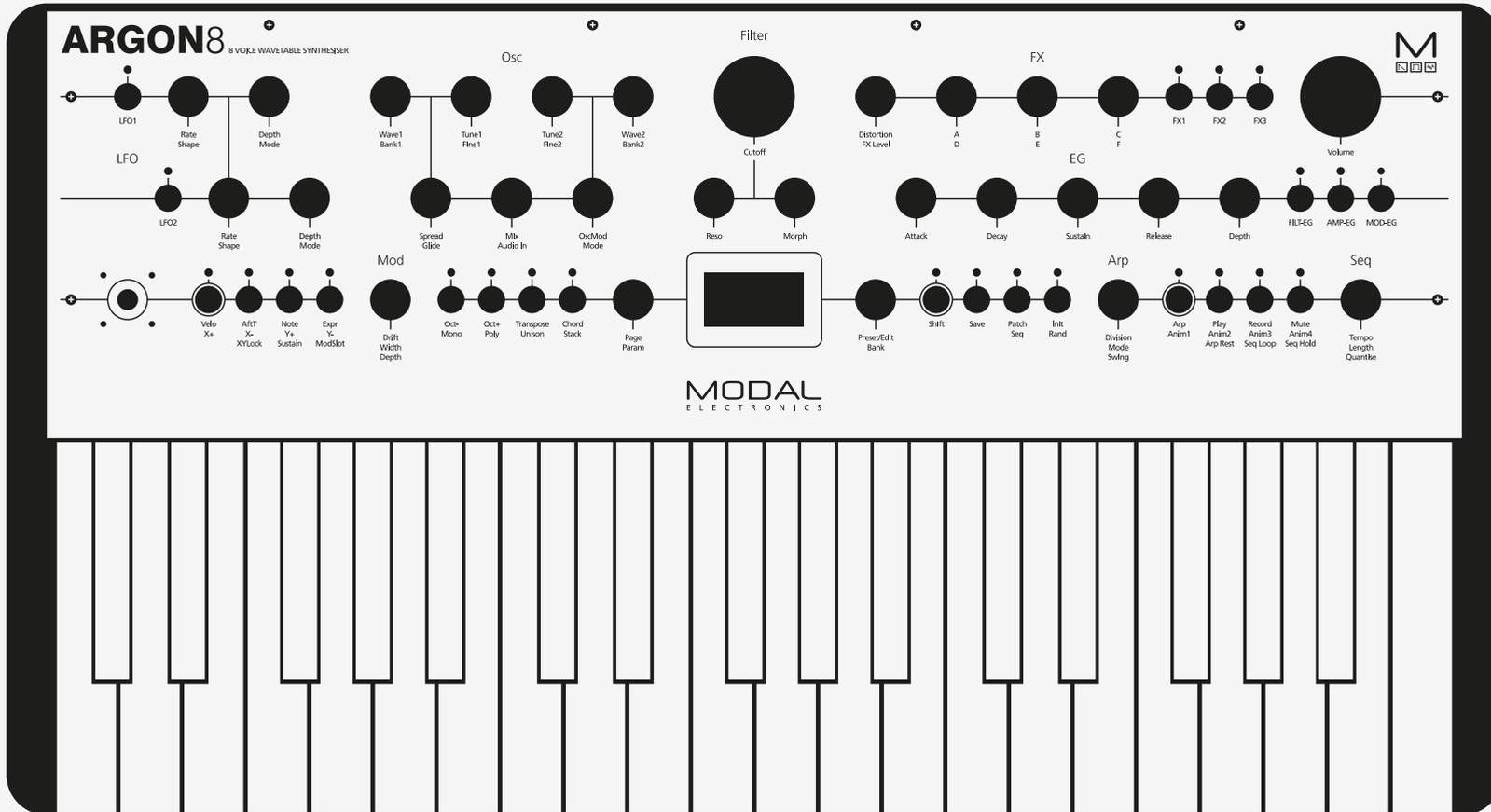
Clock Sync In / Out on 1/4" mono/TS jack. Simply plug into your clockable gear as desired. (See the Sync section)

Power

Power switch for Argon8. Power via DC-9.0V - 1.5A center-positive PSU (supplied)

03

Synthesis engine



Argon8 features 28 banks of unique morphable waveform sets located on either Wave 1 (first 24) or Wave 2 (first 24 plus an additional 4). It has a total of 32 oscillators inside.

- **Wave1:** This encoder allows you to sweep continuously through the selected wavetable. Holding Patch and turning this encoder will select the WavMod type for this wavetable set.
- **Wave2:** This encoder allows you to sweep continuously through the selected wavetable. Holding Patch and turning this encoder will select the WavMod type for this wavetable set where available (PWM and noise banks are not modulatable in this way)
- **Tune1:** Turning this encoder allows us to control the coarse tuning of Wave1 (Tune) at desirable intervals +/- 4 octaves.
- **Tune2:** Turning this encoder allows us to control the coarse tuning of Wave2 (Tune) at desirable intervals +/- 4 octaves.
- **Fine1:** Holding the Shift button and (or when latched in shift mode) turning this encoder allows us to control the fine tuning of Wave1 (Fine) +/- 100 cents
- **Fine2:** Holding the Shift button and (or when latched in shift mode) turning this encoder allows us to control the fine tuning of Wave 2 (Fine) +/- 100 cents
- **Bank1:** Holding the Shift button and (or when latched in shift mode) turning this encoder allows you to select which bank of waveforms you want on Wave 1.
- **Bank2:** Holding the Shift button and (or when latched in shift mode) turning this encoder allows you to select which bank of waveforms you want on Wave 2 (there are 4 extra banks for PWM and noise on Wave 2).
- **WavMod1:** Holding the Patch/Seq button and turning the Wave1 encoder selects which of the 32 wavetable modifiers you want to apply to the wavetable on oscillator 1.
- **WavMod2:** Holding the Patch/Seq button and turning the Wave2 encoder selects which of the 32 wavetable modifiers you want to apply to the wavetable on oscillator 2 (cannot be applied to the PWM or noise banks).
- **Spread:** This introduces additional oscillators to achieve unison or stacked octaves and intervals. In the first half of the dial, Wave 1 and Wave 2 are split into individual oscillators and spread out over the frequency spectrum to create a fat unison sound. This effect is increased up to the center position. Past half way, the oscillators arrange themselves into intervals. A huge variation of chords can be created with this control in conjunction with Wave1&2 detune.

Note: The average level of the sound will be lower when using the SPREAD control. This is because the combining oscillators are phasing in and out and not constantly re-enforcing each other as they would if the spread is set to zero.

- **Glide:** Holding the Shift button and (or when latched in shift mode) turning this encoder controls the speed with which the oscillators change their pitch, 'sliding' from one note to the next one pressed. Positive values will achieve normal always active glide and negative amounts will achieve fingered glide and will only glide if another note is already held. Envelopes will be retriggered with every note when the glide control is centred. Moving the control in either direction will enable legato mode, where envelopes are triggered only for the first note in a note stack.
- **Mix:** This encoder allows you to balance the volume between each wave. All the way to the left you will hear only Wave 1, All the way to the right you will hear Wave 2. In the centre you will hear a balanced blend of both waves.
- **Audio In:** Holding the Shift button and (or when latched in shift mode) turning this encoder allows you to select the volume of the Audio Input. This will default to 0 on boot.
- **OscMod:** Turning this encoder controls the oscillator modifier amount where either Wave 1 is the carrier and Wave 2 is the modulator or the modifier is applied directly to Wave 1.
- **Mode:** Holding the Shift button and (or when latched in shift mode) turning this encoder selects which of the 8 oscillator modifiers you want to use.

Argon8 features 8 oscillator modifiers to change how the oscillators cross modulate each other. In all of the modifiers Wave 1 is the carrier and Wave 2 is the modulator.

- **Phase Modulation**

Effect: The phase of Wave 1's oscillators are modulated by Wave 2's, distorting the shape of the waveform and producing complex frequencies. Phase Modulation is an expanded version of "FM" found on our CRAFTsynth range

Control: Controls the Phase Modulation depth (how much Wave 2 affects the phase of Wave 1).

Tip: For more harmonic results it is recommended to set Wave 2's detune value to either Octaves or Fifths. For complex waveforms the sound can get extreme fairly quickly, in these cases a lesser PM depth is recommended.

- **Ring Modulation**

Effect: Wave 1's oscillators are multiplied with Wave 2's causing new frequencies (known as sidebands) to be produced that are the sum and difference of those in the original signals.

Control: Crossfades between the Dry and Ring Modulated signal on Wave 1.

Tip: For more harmonic results it is recommended to set Wave 2's detune value to either Octaves or Fifths. For sounds more akin to Amplitude Modulation set the crossfade value at halfway.

- **Amp Modulation:**

Effect: Applies amplitude modulation to Wave 1 and Wave 2's oscillators producing new frequencies known as sidebands whilst retaining the original frequencies of the wavetables

Control: Crossfades between the dry and amplitude modulated signals

Tip: Use ratios such as fifths and octaves for the most harmonic results

- **Hard Sync:**

Effect: Oscillator sync is performed on Wave 1, with a sharp jump occurring at the phase reset. Wave 1 is synced to an internal master counter tracking the current playing note, with the slave frequency being controlled via the "Osc Mod" control. This allows sync effects to be created without having to use Wave 2's tuning

Control: Controls the sync slave playback rate (how much faster Wave 1's audible oscillators are playing back in relation to the master counter).

Tip: This style of Sync is the version found on many synthesisers and works best on harmonically rich waves, for classic kinds of synced sounds try using this effect on the Square and Sawtooth waves (Wave Bank = 1, Wave 1 CC = 94 or 127).

- **Wind Sync:**

Effect: Oscillator sync is performed on Wave 1, with an amplitude window applied over the waveform to smooth the jump at the phase reset. Wave 1 is synced to an internal master counter tracking the current playing note, with the slave frequency being controlled via the "Osc Mod" control. This allows sync effects to be created without having to use Wave 2's tuning.

(Note: As the window is always applied to the waveform, this modifier will have an impact on the sound regardless of whether the control is set to zero, this can act like filtering with waveforms that have a lot of variation towards their edges).

Control: Controls the sync playback rate (how much faster wave 1's audible oscillators are playing in relation to the master counter).

Tip: Window Sync is particularly useful for smooth sync effects on simple waveforms.

- **Shaper:**

Effect: Crossfades between several subtle waveshaping distortion curves which are applied to wave 1, producing varying harmonics and altering the shape of the base wavetable

Control: Controls which shaping curve is being applied.

- **Inverter:**

Effect: Inverts the phase of the the wavetable (i.e inverts a positive value to a negative and vice versa), which can create sharp discontinuities in the waveform

Control: Controls where in the wavetable to apply the phase inversion

Tip: The effect tends to be strongest when the wavetable value to invert is furthest away from the zero crossing of the wavetables

- **Sync RM:**

Effect: Applies classic two oscillator Hard Sync, where Wave 1's oscillators are slaved to Wave 2's oscillators frequency, with blend-able ring modulation of the master and slave also possible.

Control: Crossfades between the dry and amplitude modulated signals

Tip: As the Oscillators are Synced, inharmonic tuning ratios between Wave 1 and Wave 2 can be set but the output will remain harmonically linked

Wavetable Modifiers

Argon8 has 32 static wavetable modifiers that can be applied to both Wavetables independently. These are applied offline and effectively redraw the waveforms by applying a process to them. Available modifications are:

- **Derez 1:** Applies a sample rate reduction effect to the wavetable
- **Derez 2:** Applies slightly more sample rate reduction
- **Derez 3:** Applies the most sample rate reduction out of the 3 different types
- **Crush 1:** Reduces the bit depth of the wavetables
- **Crush 2:** Further reduces the bit-depth of the wavetables
- **Resample 1:** Applies a naïve down-sampling algorithm, reducing the amount of detail in the waveforms
- **Resample 2:** Applies slightly more down-sampling
- **Resample 3:** Applies the highest amount of down-sampling
- **Simplify 1:** Reduces the amount of high frequency partials in the wavetables
- **Simplify 2:** Reduces more high frequency partials than Simplify 1
- **Dual Rectified 1:** Alternates between a fully rectified version of the signal played back at a faster rate and a zero value for the first half of the waveform and then mirrors the response for the second half
- **Dual Rectified 2:** Alternates between a fully rectified version of the signal played back at a faster rate and a zero value for the first half of the waveform and inverts the phase of the first half for the second half of the wave.
- **Triangle Fold:** Boosts the amplitude of the waveform and wraps back around whenever the signal would clip with a triangular curve
- **Sine Fold Hybrid:** Boosts the amplitude of the waveform and wraps around whenever the signal would clip with a sinusoidal curve, with some additional wave-shaping applied
- **Shaper 1:** Applies an amplitude wave-shaping algorithm to the wavetables
- **Shaper 2:** Applies a different variation of wave-shaping effect-Shaper 3: Applies another different wave-shaping effect
- **Shaper 3:** Applies another different wave-shaping effect

Wavetable Modifiers

- **Cubic Phaseshaper:** cubes the read curve of the wavetable creating a different variation of its shape
- **Scrunch Phaseshaper:** reads through different portions of the wavetable at varying rates
- **Half Sine Phaseshaper:** reads through the wavetable using a half of a sine wave
- **Rise Over Run Phaseshaper:** reads through half of the wavetable at a slower rate then originally stored and then reads through the other half faster
- **Rubber:** Plays through the wavetable shape several times at varying rates and stores them into a single wavetable
- **Window Amp Sync:** modulates the amplitude of the wavetable with a half sine window that is played 4.5 * faster than the fundamental
- **Resonance Sync:** Uses a half wave rectified version of the wavetable (that only keeps the positive values of the signal) to modulate the amplitude of a sine wave playing back at 8.5 * the fundamental
- **Half Rectified:** Applies half wave rectification to the wavetable, keeping only the positive values of the signal
- **Half Rectified Inverted:** Applies half wave rectification to the wavetable, keeping only the negative values of the signal
- **Shaped RM:** Applies a wave shaped variation of ring modulation to the wavetable, using a sine wave playing back at 2.5 * the fundamental as the modulator signal
- **Symmetrical Signs:** all values in the first half of the waveform are set to positive, whilst all values in the second half are set to be negative.
- **Mirror:** Plays through the waveform twice but mirrors the result for the second half of the wave
- **Half Reverse:** Alters the playing direction of various parts of the wavetable at different positions
- **Digital Wrap:** Boosts the amplitude of the wavetable and whenever it passes the maximum range the value jumps to a different polarity.
- **Sign Subtract:** Subtracts the current wavetable value from its sign value, where sign is +1 if the wavetable value is positive and -1 if the wavetable value is negative

Filter

Argon8 has 4 state variable 2-pole resonant filters to choose from: Standard, Standard Notch, Classic and Classic Notch (all capable of morphing from low pass, through band pass / notch, to high pass).

- **Cutoff:** This parameter controls the low-pass filter cutoff frequency. This affects the cutoff frequency of the filter, from 0Hz up to 22kHz.
- **Reso:** This parameter controls the amount of resonance of the filter.
- **Morph:** This encoder allows control of the shape of the filter: note that the filter is low-pass by default.
 - At it's minimum value you have a low pass filter;
 - We move through a sort of low-shelving;
 - At It's midpoint we have a band-pass filter or notch filter;
 - At it's maximum value a high-pass filter.

TIP: With this feature at lower settings you can dampen the low frequencies while maintaining a rich high-end texture.
- **Type:** This parameter selects the current mode of the filter. The filter types available are:
 - Standard
 - Standard Notch
 - Classic
 - Classic Notch

Envelopes

Argon8 provides 3 separate 4-stage Envelope Generators (i.e. envelopes), one for the filter (FILT-EG), one for the amplifier (AMP-EG) and one for modulations (MOD-EG). With negative amounts only the attack, decay and sustain levels are inverted, the release phase will still tend to 0.

The envelope generator represented on the encoders can be selected using the 3 dedicated buttons to the right of the envelope depth encoder.

- **Attack:** This parameter controls the time passing from the moment you press a key (i.e. 'MIDI Note On' message) until the sound reaches its maximum value.
- **Decay:** This parameter controls the time passing for the envelope to drop from its maximum value to a sustain level (see below).
- **Sustain:** This parameter controls the level of the sustain phase (i.e. the volume of the sound while keeping the key pressed for AMP-EG). If there are no modulations active, this volume keeps constant until you release the key. (The envelope then enters the 'release' phase)
- **Release:** This parameter controls the time passing from the moment you leave a key (i.e. 'MIDI Note Off' message) until the sound reaches silence.
- **Depth:** This controls the envelope depth amount of the selected envelope generator (i.e. FILT-EG, AMP-EG or MOD-EG.) This gives bi-polar control of the amount of modulation the envelope has over it's destination/s.
- **FILT-EG, AMP-EG, MOD-EG:** These buttons selects which envelope generator the above controls are representing.

Pressing the MOD-EG button again latches the assign mode - you will notice the LED blinking to indicate you are in assign mode. Press again to exit assign mode.

TIP: Holding down any of the EG select button and changing the ADSR parameters will alter all three envelopes simultaneously and is a useful shortcut to quickly change all envelopes at once.

Argon8 features two individual low frequency oscillators. LFO1 is global and LFO2 is polyphonic.

Both LFO1 and LFO2 can be set to Retrigger, Single and Free mode and have these parameters:

- **LFO1:** This button enters and exits assign mode for LFO1
- **LFO2:** This button enters and exits assign mode for LFO2

This is how we route the LFO's to parameters in the matrix. Once in this mode, simply turning the knob for the parameter that you would like the LFO to modulate, you will see the LED above the button begin to flash to indicate you are currently in an assign mode.

- **Rate:** This parameter controls the speed of the LFO.

LFO1 in a positive amount is free rate meaning the LFO will never retrigger. In negative amounts it is synced to the project tempo at various subdivisions.

LFO2 in a positive direction is free rate for the first half then snaps to divisions of the main frequency of the note being played. This allows the LFO frequency to run into the audible range and maintain harmonious modulations. A massive array of effects can be achieved in this way, including AM and FM. In negative amounts the first half of the dial is synced to the tempo and the second half is synced to divisions of the main frequency of the note being played

- **Shape:** Holding the Shift button and (or when latched in shift mode) turning this encoder controls the given LFO Shape. This allows you to continuously sweep through the four available LFO waveforms (i.e. sine, sawtooth, square and sample & hold).
- **Depth:** This parameter controls the depth of the given LFOs modulation.
- **Mode:** Holding the Shift button and (or when latched in shift mode) turning this encoder selects the Retrigger Mode. The modes are:

Retrigger - in this mode, each new keypress restarts the LFO and it continues to run - particularly useful for Unison/Stack sounds.

Free - in this mode LFO 2 is never reset, so it could be at any phase when a note is pressed.

Single - In this mode, the LFO will start when a new key is pressed, complete cycle and stop, but will not retrigger when a new note is triggered and one is already held.

Argon8 features an intuitive programmable arpeggiator. The speed of the arpeggiator is controlled by the current clock which can either be received from the sync in port, external MIDI or from the internal clock in Argon8.

- **Arp:** The Arp can be enabled / disabled by pressing this button. Holding this and entering notes using the keys or over USB or MIDI connection will input notes to the Arp. Rests can be input by pressing the Arp Rest button while entering notes.
- **Division:** Turning this encoder allows you to select the clock division of the Arp
- **Mode:** Holding the Shift button and (or when latched in shift mode) turning this encoder allows you to select the octave range and direction of the Arp.
- **Swing:** Holding the Arp button and turning this encoder allows you to dial in swing to the Arp. This setting is bi-polar allowing us to nudge every other note backward or forward in time.
- **Arp Gate:** Holding the Patch button and turning the Arp encoder allows you to set Arp Gate length.

Note. Programmed patterns in the arpeggiator are temporary and are not saved per patch. They will remain until reprogrammed or until the unit is power cycled.

Sequencer

Argon8 has an extremely powerful real-time sequencer on board boasting 512 notes with input quantise and four recordable / editable parameter animations (Delay FX, LFO's, sequencer and arpeggiator can be either clocked internally or externally)

- **Play:** This button starts and stops the sequencer.
- **Record:** This button allows you to record enable and disable. If the sequence is not playing when you press record it will begin.
Tip: You can enable or disable the metronome in the MODALapp or on-screen on the 'Settings - Seq' page.
- **Mute:** This button mutes all notes in the sequence. Hold the 'Mute' button to clear all the sequencer notes in the currently selected sequence.
- **Tempo:** Turning this encoder selects the tempo of the internal clock.
- **Length:** Holding the Shift button and (or when latched in shift mode) turning this encoder allows you to select the length of the selected sequence.
- **Quantise:** Holding the Arp button and turning this encoder allows you to select an input quantise value for the sequencer.
- **Seq Loop:** Allows you to loop certain parts of the sequencer. When the button is first pressed is the loop start point and when it is released becomes the loop end point. When a loop is active pressing the button again will disable the loop.
- **Seq Hold:** Holds the current sequencer step and repeats it, like a beat repeater. When the button is released the sequencer carries on from the location it should have been before the step was repeated so it will still be in time.
- **Linked Sequences:** This is a screen only parameter that allows you to link a sequence to a specific patch. This loads this sequence every time its linked patch is loaded. You can access this easily by pressing the Patch button and using the Page/Param encoder to scroll all the way to the right. Simply input the desired sequence number for that patch or select 'Off' for no linked sequence. Like any other patch parameter, the patch must be saved in order to retain the linked sequence number.

Tip: When selecting a Linked Sequence, hold the Preset/Edit switch to select the current sequence.

Holding the Shift button and (or when latched in shift mode) holding the Anim1 / Anim2 / Anim3 / Anim4 buttons clear their respective animation lanes.

The Sequence position LED will always cycle 1 - 16 over the current sequence length. Eg. if sequencer is set to 4 bars, it will take 4 bars for the sequencer LED to scroll from 1 to 16 (i.e. not steps) If sequencer is running, any sequencer length changes will only take affect at the beginning of a bar.



Argon8 features 3 incredibly powerful independent and user configurable stereo FX engines and a separate per-voice waveshaping distortion pre-FX engine. The FX types are:

Chorus, Phaser, Flanger (Pos), Flanger (Neg), Tremolo, LoFi, Rotary, Stereo Delay, Ping-Pong Delay, X-Over Delay and Reverb and can be rearranged in any order in series. 1>2>3. Any effect can go in any slot but you may only use 1 type of each effect per preset.

- **Distortion:** When holding the Shift button this encoder allows us to control the Distortion amount. The distortion is a waveshaping overdrive and as such is incapable of bit-crushing effects.
- **FX Level:** Holding the Shift button and (or when latched in shift mode) this encoder allows us to control the FX level amount within this patch. This parameter affects the Dry/Wet mix of the of the FX engine's audio output with the pre-FX signal. When set to minimum, only the dry signal will be heard. When set to maximum, only the FX engine's signal will be heard.
- **A:** This encoder allows us to control the first parameter of the selected effect.
- **B:** This encoder allows us to control the second parameter of the selected effect.
Tip: Turn the 'FX1,2 and 3 B' encoder into the negative range to access synced delay times with delay type FX.
- **C:** This encoder allows us to control the third parameter of the selected effect.
- **D:** Holding the Shift button and (or when latched in shift mode) this encoder allows us to control the fourth parameter of the selected effect.
- **E:** Holding the Shift button and (or when latched in shift mode) this encoder allows us to control the fifth parameter of the selected effect.
- **F:** Holding the Shift button and (or when latched in shift mode) this encoder allows us to control the sixth parameter of the selected effect.
- **FX1:** This button allows to select 1st FX slot for control with encoders A-F with a single click. With multiple clicks it will cycle through the effect type used in that slot.
- **FX2:** This button allows to select 2nd FX slot for control with encoders A-F with a single click. With multiple clicks it will cycle through the effect type used in that slot.
- **FX3:** This button allows to select 3rd FX slot for control with encoders A-F with a single click. With multiple clicks it will cycle through the effect type used in that slot.

Note: You can hold FX1, 2 or 3 when cycling through FX types to clear that slot.

You can press FX1 + FX2 + FX3 to jump to the 'FX Preset Load' page to save or load FX presets.

FX parameters are as follows:

FX	A	B	C	D	E	F
Chorus	Dry:Wet Mix	Mod Depth	Mod Rate	Time	Feedback	Phase
Phaser	Dry:Wet Mix	Mod Depth	Mod Rate	Frequency	Feedback	Phase
Flanger (Pos)	Dry:Wet Mix	Mod Depth	Mod Rate	Frequency	Feedback	Phase
Flanger (Neg)	Dry:Wet Mix	Mod Depth	Mod Rate	Frequency	Feedback	Phase
Tremolo	Dry:Wet Mix	Phase	Rate	Shape	-	-
LoFi	Redux Amount	SR Redux	Bitcrush	BC Amount	Noise	-
Rotary	Dry:Wet Mix	LFO Rate	Vibrato	Balance	Width	-
Stereo Delay	Dry:Wet Mix	Time	Feedback	HPF	LPF	-
Ping-Pong Delay	Dry:Wet Mix	Time	Feedback	HPF	LPF	Mod Depth
X-Over Delay	Dry:Wet Mix	Time	Feedback	HPF	LPF	-
Reverb	Dry:Wet Mix	Time	Size	Dampening	Pre-Delay	Modulation

FX Presets

Argon8 can store up to 100 FX presets on board and comes loaded with 60 factory FX presets for you to instantly switch up your sound. FX presets range from simple single-FX presets to complex multi-FX presets.

To easily navigate to the FX preset page simply press all three FX slot buttons (FX1, FX2, FX3) at the same time. Loading an FX preset will apply preset FX settings to the currently loaded patch, but you need to save the patch to save the new FX settings to the patch.

FX Preset saving can be done on-screen once you have navigated to the FX preset pages. Saving here will save the FX settings from the currently loaded patch into the selected FX preset slot.

Modulation

Argon8 has a comprehensive Modulation Matrix with 11 Modulation Sources and 52 Modulation destinations.

These Mod slots can be used to assign a combination of modulation sources to destinations, 8 modulation sources can be assigned to a single destination, or any other combination thereof. There are also 4 pre assigned slots for common modulation routings.

The Mod Matrix is additive - Modulation values are added or subtracted from the modulated parameter value and limited to the parameter range. If a parameter is at 0, negative modulation values will not be audible until the parameter value is increased. The opposite is true for parameters at max value. All of the modulation depths are bipolar, meaning sources can be inverted using negative depths.

When multiple mod slots are assigned to the same destination, the modulation from all assigned slots is summed and limited before being applied.

LFO1, LFO2, MOD-EG, Velo, AftT, Note, Expr, X+, X-, Y+, Y- can all be assigned to destinations from the front panel by holding their buttons on the front panel and turning the desired modulation destination encoder in a positive or negative direction.

Note. An LED flashing is used to indicate that the panel is in assign mode for the relative function to that LED.

ModSlots can be viewed on-screen by using the Velo + ModSlot combination which also gives access to screen only ModSlot Status control which allows you to activate or deactivate that slot.

- **Velo:** Pressing this button enters and exits the assign mode for velocity. Turn an encoder to assign velocity to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of velocity to those destinations. Upon letting go the assign mode will be exited.
- **AftT:** Pressing this button enters and exits the assign mode for after touch. Turn an encoder to assign aftertouch to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of after touch to those destinations. Upon letting go the assign mode will be exited.
- **Note:** Pressing this button enters and exits the assign mode for Note. Turn an encoder to assign Note to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of Note to those destinations. Upon letting go the assign mode will be exited.

Modulation

- **Expr:** Pressing this button enters and exits the assign mode for expression. Turn an encoder to assign expression to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of expression to those destinations. Upon letting go the assign mode will be exited.
- **X+:** Holding the Shift button and (or when latched in shift mode) pressing this button enters and exits the assign mode for Joystick X+. Turn an encoder to assign Joystick X+ to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of Joystick X+ to those destinations. Upon letting go the assign mode will be exited.
- **X-:** Holding the Shift button and (or when latched in shift mode) pressing this button enters and exits the assign mode for Joystick X-. Turn an encoder to assign Joystick X- to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of Joystick X- to those destinations. Upon letting go the assign mode will be exited.
- **Y+:** Holding the Shift button and (or when latched in shift mode) pressing this button enters and exits the assign mode for Joystick Y+. Turn an encoder to assign Joystick Y+ to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of Joystick Y+ to those destinations. Upon letting go the assign mode will be exited.
- **Y-:** Holding the Shift button and (or when latched in shift mode) pressing this button enters and exits the assign mode for Joystick Y-. Turn an encoder to assign Joystick Y- to modulate that parameter. Holding this button while turning an encoder / series of encoders allows momentary assignment of Joystick Y- to those destinations. Upon letting go the assign mode will be exited.
- **XYLock:** Holding Velo and pressing this button locks the Joystick in the position it is held allowing you to let go and continue playing. Pressing this button again will unlock the Joystick.
- **Sustain:** Holding Velo and pressing this button enables MIDI sustain. Pressing this button again disables MIDI sustain.
- **ModSlot:** Pressing this button navigates to the ModSlot page on-screen. Repeatedly pressing this button cycles through all mod slot settings pages on the screen.

Holding any mod source button and turning the 'Depth' encoder allows you to set the global depth for that mod source (pre-assigned mod routings are not affected by the source's global depth value). When the screen is displaying a mod slot 'Depth' parameter (most easily accessed via assigning modulation using the panel or via the ModSlot button), hold the 'Edit' switch to clear the mod slot assignment.

To assign a mod source to an osc's global frequency destination, use either of the fine tune controls. 'Tune1' will assign to Osc1 tune, 'Tune2' will assign to Osc2 tune.

Modulation

Valid combinations are listed here:

Parameter	LFO1	LFO2	EG	NOTE	VELO	EXPR	AFTT	X+	X-	Y+	Y-
Wave 1											
Wave 2											
Mix											
Global Pitch											
Osc2 Pitch											
Osc-Mod											
LFO1 Rate		X	X	X	X						
LFO2 Rate											
LFO1 Shape	X	X	X	X	X						
LFO2 Shape		X									
LFO1 Depth	X	X	X	X	X						
LFO2 Depth		X									
Cutoff			X								
Reso											
Morph											
FEG Attack			X								
FEG Decay			X								
FEG Sustain			X								
FEG Release			X								
FEG Amount											
AEG Attack			X								
AEG Decay			X								
AEG Sustain			X								
AEG Release			X								
AEG Amount			X								
MEG Attack			X								
MEG Decay			X								
MEG Sustain			X								
MEG Release			X								
MEG Amount			X								
Distortion											

Modulation

Parameter	LFO1	LFO2	EG	NOTE	VELO	EXPR	AFTT	X+	X-	Y+	Y-
Spread											
Glide			X								
Osc2 Pitch											
FX Amount		X	X	X	X						
FX-1 A		X	X	X	X						
FX-1 B		X	X	X	X						
FX-1 C		X	X	X	X						
FX-1 D		X	X	X	X						
FX-1 E		X	X	X	X						
FX-1 F		X	X	X	X						
FX-2 A		X	X	X	X						
FX-2 B		X	X	X	X						
FX-2 C		X	X	X	X						
FX-2 D		X	X	X	X						
FX-2 E		X	X	X	X						
FX-2 F		X	X	X	X						
FX-3 A		X	X	X	X						
FX-3 B		X	X	X	X						
FX-3 C		X	X	X	X						
FX-3 D		X	X	X	X						
FX-3 E		X	X	X	X						
FX-3 F		X	X	X	X						

Scaling

LFO1 and LFO2 are scaled such that if they are assigned with maximum depth and the modulated parameter is at its centre value, the full parameter range will be modulated. All other modulation sources are scaled such that if they are assigned with maximum positive depth and the modulated parameter is at 0, the full parameter range will be modulated.

- **Oct +/-:** These buttons control the key range available along the keyboard.
Tip: You can use this while holding notes to access unavailable notes. Particularly handy when used in conjunction with Sustain and Chord mode.
- **Transpose:** Holding this button enters Transpose mode. Here you can directly transpose the pitch of both oscillators using the keyboard. C2 (directly beneath the Transpose button) is the default position. Keys below this transpose down 1 semitone per key and keys above transpose up 1 semitone per key.
Note: Using transpose will not trigger a new note. If you are using low EG settings you may not notice the change. This can be used to great effect while sequencing the synth from its Arp or Seq or from external sources.
Note: Pressing Transpose without entering any key values will reset transposition to 0. Transpose is a performance feature and as such is not saved per patch. It will remain until it is either reset, turned off or the unit is power cycled.
- **Chord:** Pressing this button while holding a chord (input directly from the keys or via incoming MIDI) stores this chord and enables chord mode. This chord can then be played from a single note trigger until the chord is changed, or chord mode is disabled. To change a chord, simply turn Chord mode off and repeat the process holding your new chord shape. To exit simply press the Chord button again. The Chord function is a performance feature and as such is not saved per patch. It will remain until it is either reset or the unit is power cycled.
- **Mono:** This button selects Mono voice mode for the current patch. 4 oscillators will be stacked into a single voice
- **Poly:** This button selects polyphonic voice mode for the current patch. 8 voice stereo true polyphonic path all the way to the stereo FX engine input.
- **Unison:** This button selects Unison voice mode. Cycle through to choose between Unison-2, Unison-4 or Unison-8. These are monophonic voice modes where multiple voices are stacked and detuned, the number reflects the number of voices per note.
- **Stack:** This button selects Stack voice mode. Cycle through to choose between Stack-2 or Stack-4. These are polyphonic voice modes where multiple voices are stacked. Stack-2 offer 4-note polyphony and Stack-4 offers 2-note polyphony.
- **Drift:** This encoder controls the voice drift amount. This is the amount of slop or random detuning of each oscillators phase and tune per note.
- **Width:** Holding the Shift button and (or when latched in shift mode) turning this encoder controls the voice width of the current patch. This sets how far left and right the alternating pan of the voices is from mono at 0 to hard panned & wide at 127.

Joystick

The joystick can be assigned to up to 11 destinations at once. You can assign things to any of the X or Y directions. The Joystick position can be locked or unlocked using the Velo + XYLock button combination. This locks the joystick at whatever value it was held at while the buttons were depressed.

The X axis controls pitch bend as standard but this can also be turned off (on-screen: Joystick: Pitchbend status or on MODALapp) it also sends MIDI pitch bend messages which can also be toggled on or off in the global settings.

Y+ sends MIDI mod wheel data (CC1) which can also be toggled on or off in the global settings.

Y- Sends MIDI CC118 which can also be toggled on or off in the global settings.

Audio In

The audio inputs route audio directly in to the 3-slot stereo FX engine although this can also be bypassed if you want to use the Audio In to only mix in the audio input with the synths output. The Audio In settings (Audio-In Volume, FX Bypass) are temporary and will not be saved so will need to be reset when using upon each boot.

Settings

General

- **Clock Source:** Sets the clock source for the Argon8 with the following available options: Internal, MIDI, Sync-In, Auto. If 'Auto' is selected then the Argon8 will automatically use any detected clock source (prioritising Sync-In over MIDI) else it will use the internal clock. Please note that if 'MIDI' or 'Sync-In' is selected whilst there is no MIDI or Sync-In clock present then clocked-synced functions (sequencer, arpeggiator, delay FX, LFOs) may not work correctly or at all.
- **Global Tune:** Sets the global tuning of the Argon8 with a range of +/- 1 semitone. You may need to adjust this if using the Argon8 with other synthesisers that are not tuned to the standard tuning (e.g. old analogue synthesisers).
- **Reset:** Hold the 'Edit' switch to reset all global settings to the factory default settings. Please note that this will also reset the Main Volume and Tempo parameter values.

MIDI

- **Channel:** Sets the MIDI channel that the Argon8 uses for both MIDI input (the MIDI-in messages channel that the device will respond to) and MIDI output (the channel for the transmitted MIDI messages).
- **Omni:** Enables the Argon8 to be configured to 'Omni Mode', where it will respond to MIDI-in message on any MIDI channel.
- **Pitch Bend Range:** Sets the Argon8 pitch bend range - in semitones - for both MIDI-in Pitch Bend messages and the joystick X axes.
- **DIN In:** A set of MIDI filter settings for enabling / disabling the Argon8 from responding to certain types of MIDI-in messages from the MIDI DIN-in port.
- **DIN Out:** A set of MIDI filter settings for enabling / disabling the Argon8 from transmitting certain types of MIDI-in messages from the MIDI DIN-out port.
- **DIN Thru:** Enables a 'Soft MIDI Thru' mode for the DIN ports, where messages received by the DIN-in port are forwarded to the DIN-out port.
- **USB Thru:** Enables a 'Soft MIDI Thru' mode for all MIDI sources, where messages received by the DIN-in port are forwarded to USB-out and messages received by USB-in are forwarded to DIN-out.
- **Arp/Seq Out:** Enables the Argon8 arpeggiator and / or sequencer to transmit notes to the MIDI-out ports. When arp out is enabled the internal keyboard notes will not be transmitted to MIDI-out. Please note that MIDI-in notes that are being arpeggiated will also be transmitted to MIDI-out if arp out is enabled, which may cause MIDI loop / echo issues in complex MIDI setups.

Settings

Keyboard

- **Local:** Enables / disables the internal keyboard's connection with the internal sound engine. If you are using Argon8 with an external sequencer you may need to set the Local setting to 'Off' to eliminate the double-triggering of notes caused by MIDI loops / echoes.
- **Velocity Curve:** Sets the velocity curve / sensitivity for notes from the internal keyboard. There are six curve options - Very Light, Light, Normal, Heavy, Very Heavy, Fixed. Select 'Light' or 'Very Light' if you play keys lightly but would like the device to respond as though they were played harder; select 'Heavy' or 'Very Heavy' if you play keys heavily but would like the device to respond as though they were played lighter; or select 'Fixed' to have a constant velocity value of 127 (maximum velocity).
- **Aftertouch Curve:** Sets the aftertouch curve / sensitivity for the internal keyboard. There are five curve options - Very Light, Light, Normal, Heavy, Very Heavy. Select 'Light' or 'Very Light' if you want more control over the upper range of values of the aftertouch response; or select 'Heavy' or 'Very Heavy' if you want more control over the lower range of values of the aftertouch response.

Sequencer

- **Metronome:** Enables / disables the metronome click track for sequence recording. Please note that the sequencer pre-roll (if enabled) will always contain the metronome.
- **Pre-Roll:** Sets the sequence recording pre-roll length to determine how many bars of the metronome click track you hear before the recording starts.
- **Quantise:** Sets the sequencer note recording input quantise value to ensure that played notes can be kept in time. Please note that this is an input quantise setting and therefore cannot be used to adjust previously recorded notes.
- **Transport:** Enables / disables the sequencer transport to be controlled by MIDI Clock Start / Continue / Stop messages from USB-MIDI. You may want to disable this behaviour if using Argon8 with an external MIDI sequencer.

Joystick

- **Mod Wheel Out:** Enables / disables the joystick Y+ axis from transmitting MIDI Modulation Wheel messages (MIDI CC 1) to MIDI-out. You may want to disable this behaviour if the Argon8 is connected to other synthesisers that responds to MIDI Modulation Wheel messages.
- **Pitch Bend Out:** Enables / disables the joystick X axes from transmitting MIDI Pitch Bend messages to MIDI-out. You may want to disable this behaviour if the Argon8 is connected to other synthesisers that responds to MIDI Pitch Bend messages. Please note that if this is disabled the joystick X axes will instead transmit CC messages for MODALapp communication.

Screen

- **Brightness:** Sets the brightness / contrast of the Argon8 screen.
- **Switch:** Sets the screen 'Page Switch' / 'Context Sensitivity' mode to determine how the screen responds to certain panel control interactions and MIDI-in messages.

There are three main Page Switch modes - Regular, Smart, Off; and the first two modes contain three sub modes - All, Panel, MIDI.

The 'Regular' mode causes the screen to switch to the page of the adjusted parameter and stay on the page until another parameter is adjusted; the 'Smart' mode causes the screen to switch to the page of the adjusted parameter but then switch back to the previous page after two seconds, where the 'previous' page will be the page accessed via either the screen 'Page / Param' control, the Patch / Seq button, or the FX1 + FX2 + FX3 button combination.

The sub-mode of each mode sets the parameter source - the panel, MIDI-in, or both.

- **Saver:** Sets the idle time for the screen's screensaver. A smaller time will increase the lifetime of the screen.

LEDs:

- **Brightness:** Sets the brightness of the panel LEDs.

Expression Pedal

- **Pedal Type:** Allows you to configure the Argon8 to work with various types of expression pedals.

There are two main modes here (TRS and RTS) where each mode has three sub modes (1-3).

Select a 'TRS' polarity mode if you are using a TRS expression pedal (or an expression pedal with a polarity switch, set to the TRS polarity) - this is the most common polarity of expression pedals. Select an 'RTS' polarity mode if you are using an RTS expression pedal which contains no polarity switch. If your pedal does not contain a polarity switch and you are unsure of it's polarity, if the Argon8 isn't responding to your pedal correctly (e.g. full modulation range can't be obtained, modulation curve is skewed), it is likely that you need to switch the Argon8 polarity mode. Please note that expression pedals with the TS polarity will not work with Argon8.

Select the '1' sub-mode for expression pedals with a resistance of 10k; select the '2' sub-mode for expression pedals with a resistance of 20k or 25k, or select the '3' sub-mode for expression pedals with a resistance of 50k or above. If you are unsure of the resistance of your expression pedal then select the '1' sub-mode - this will work with the majority of expression pedals but you may find that the maximum modulation happens before the pedal completes its movement (but selecting '2' or '3' instead may improve on this).

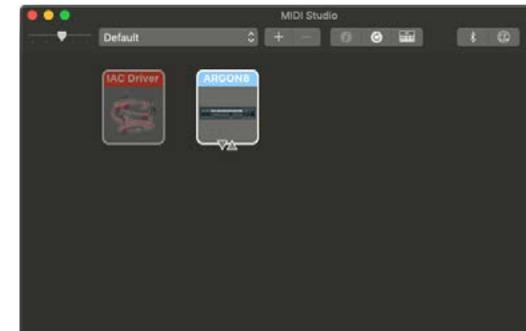
If you are unable to configure Argon8 to work adequately with your expression pedal using this setting, you may need to use a TRS Polarity Adapter.

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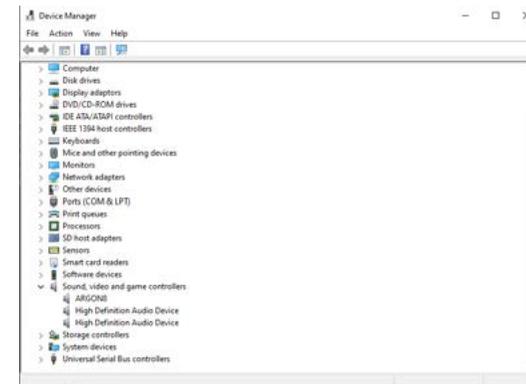
MIDI

MIDI

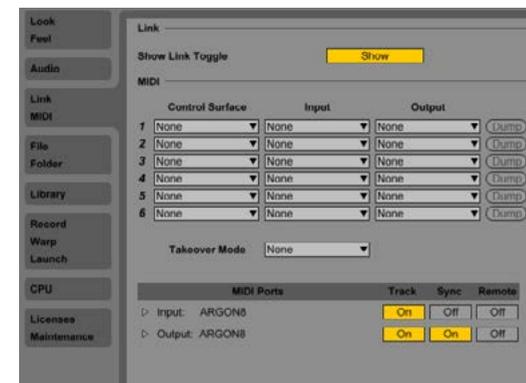
Argon8 is a fully class-compliant USB-MIDI device, meaning you can plug it into your computer, no drivers required, and gain access to a huge array of extra features. Simply plug in Argon8 synthesiser to a USB port and it will show up as a MIDI input and output device in any software that supports external MIDI devices.



On Mac OSX, Argon8 will show up in 'Midi Studio', found in Applications > Utilities > Audio MIDI Setup. (Once open, select Window > Show MIDI Studio)



On Windows, Argon8 will show up as a sound device in the Device manager.



Remember to enable the device input and output in your DAW's preferences.

MIDI

MIDI Channel

On Argon8 the MIDI channel can be set in the on-screen settings, or with the MODALapp.

You can also change additional MIDI settings in the on-screen settings pages or in the settings tab of MODALapp.

MIDI Output

Argon8 can sequence your DAW or any device that can send MIDI notes over USB, MIDI or CV clock using the keyboard, sequencer or the arpeggiator.

The keyboard sends MIDI Channel Aftertouch messages and the Joystick can send MIDI Pitch Bend messages.

All of the encoders on Argon8 output MIDI messages (The appropriate CC message depending on the SHIFT or panel state) This allows Argon8 to be used as a fully functional plug and play MIDI controller!

When a change is detected on any of the parameters, a CC message is sent out. See the MIDI implementation chart to find which parameters send which CC numbers. The keys also send the appropriate MIDI notes for the Octave range and scale that they are programmed to.

MIDI Input

Argon8 can be played by sending it MIDI notes. This means you can use your DAW or any device that can send MIDI notes over USB, MIDI to sequence Argon8 or control any of the parameters featured in the CC Implementation List

MIDI Clock

Configure your DAW and MIDI devices to send or receive MIDI clock (Sync) to or from Argon8 and, when Auto is selected it will automatically configure itself to work in time with your track tempo. When no clock is detected, the Argon8 will continue to use whatever tempo it is internally configured to.

MIDI Soft Thru

Argon8 has two soft thru settings configurable from the app:

- **DIN Thru:** Forwards Midi received on din in to din out
- **USB Thru:** Soft interface mode which forwards midi received on din in to USB out, and USB in to din out

MIDI

Program Change

Sending a bank change (0-4) followed by a program change (0-99) to Argon8 will load the relevant preset.

Sync

The analogue sync connections on Argon8 are configured to use a 3.3v, rising edge, 1 pulse per 16th note signal. This is used to syncopate any other gear that is CV clock enabled with your device. **PLEASE DO NOT EXCEED 5V INPUT AND OUTPUT.**

Any signal received by the SYNC IN connection is automatically forwarded to the SYNC OUT. When running off internal clock or external clock SYNC OUT sends out the received clock.

Sync auto detects incoming clock / sync signals and will select these in priority order: 1) Sync, 2) Ext MIDI and 3) Internal.

Sync will fall back to the next available sync source in reverse priority order after a timeout of 3 seconds.

Din MIDI Filters

Argon8 has app-configurable midi filters on the Din input and output:

Notes, CC, Program Change, Aftertouch, Pitchbend, Transport, Clock and Sysex.

By default Din IN allows all message types, and Din OUT allows all message types except clock.

MIDI In Omni

MIDI can be made omni within the Settings pages or in the Settings tab of MODALapp. Omni mode makes Argon8 listen to all midi channels, for all received midi (din or usb). Transmitted midi is still sent out on Argon8's current midi channel.

MIDI CC Implementation Chart

CC	Function
0	Bank Change
1	Mod Wheel
2	-
3	WavMod 1
4	-
5	Glide
6	-
7	Main Volume
8	
9	Voice Mode
10	-
11	Expression Pedal
12	Distortion
13	WavMod 2
14	Osc1 Tune
15	Osc1 Fine
16	Osc1 Shape
17	Osc2 Shape
18	Osc Mix
19	OscMod
20	Spread
21	OscMod Mode
22	FEG Attack
23	FEG Decay
24	FEG Sustain
25	FEG Release
26	AEG Attack
27	AEG Decay
28	AEG Sustain
29	AEG Release
30	Osc2 Tune
31	Osc2 Fine

CC	Function
32	FEG Amount
33	Morph
34	Cutoff
35	Resonance
36	LFO1 Rate
37	LFO1 Depth
38	-
39	LFO1 Shape
40	Octave
41	-
42	Filter Type
43	MEG Attack
44	MEG Decay
45	MEG Sustain
46	MEG Release
47	LFO2 Rate
48	LFO2 Depth
49	MEG Depth
50	LFO2 Shape
51	AEG Depth
52	LFO1 MIDI Sync
53	Arp Gate
54	LFO2 MIDI Sync
55	Delay MIDI Sync
56	LFO1 Mode
57	LFO2 Mode
58	Arp Status
59	Arp Octave
60	Arp Direction
61	Arp Division
62	Osc1 Bank
63	Osc2 Bank

CC	Function
64	Sustain Pedal
65	-
66	-
67	Seq Length
68	Seq Mute
69	Seq Clear
70	Seq Hold
71	Seq Loop
72	Seq Record
73	FX Amount
74	-
75	Transpose
76	-
77	-
78	Swing
79	Seq Quantise
80	-
81	-
82	-
83	Audio In
84	All EG Attack
85	All EG Decay
86	All EG Sustain
87	All EG Release
88	ModSlot 1 Depth
89	ModSlot 2 Depth
90	ModSlot 3 Depth
91	ModSlot 4 Depth
92	ModSlot 5 Depth
93	ModSlot 6 Depth
94	ModSlot 7 Depth
95	ModSlot 8 Depth

CC	Function
96	Chord Mode
97	-
98	-
99	-
100	ModSlot 1 Source
101	ModSlot 2 Source
102	ModSlot 3 Source
103	ModSlot 4 Source
104	ModSlot 5 Source
105	ModSlot 6 Source
106	ModSlot 7 Source
107	ModSlot 8 Source
108	ModSlot 1 Dest
109	ModSlot 2 Dest
110	ModSlot 3 Dest
111	ModSlot 4 Dest
112	ModSlot 5 Dest
113	ModSlot 6 Dest
114	ModSlot 7 Dest
115	ModSlot 8 Dest
116	Joystick X+
117	Joystick X-
118	Joystick Y-
119	Patch Gain
120	All Sound Off
121	Randomise Patch
122	-
123	All Notes Off
124	Omni Off
125	Omni On
126	-
127	-

05

Update

Update

The firmware on Argon8 can be updated remotely. This means that you will be able to update your Argon8 to the latest version each time an update is released.

MODALapp will provide the most user-friendly way to update firmware, however it is also possible to update the firmware using MIDI sysex messages, meaning you won't need the app.

DO NOT run any other MIDI software that could be sending messages to Argon8 during the update process.

06

MODALapp

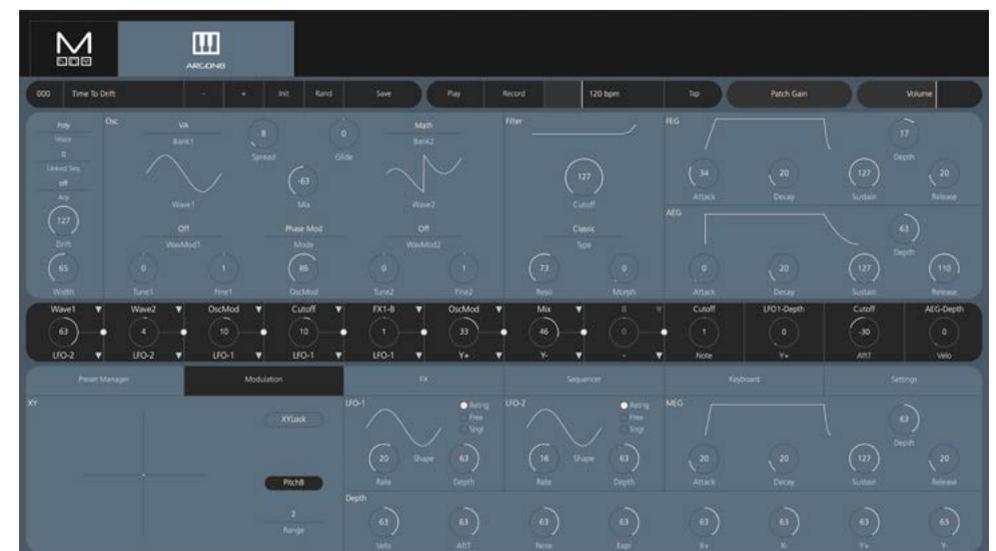
MODALapp

MODALapp adds visual feedback for Argon8 (and other Modal devices) and access to a handful of extra settings outlined above. All parameters are accessible from a single interface split into 3 tabs.

- All UI parameters accessible from a single interface
- Preset Manager page for preset management, backup and import
- Modulation page to quickly view and edit the current patch modulation settings
- FX page for selecting and editing the 3 stereo FX engines on Argon8
- Sequence page for live sequence controls and editing the 4 parameter animation rows
- Keyboard page for playing Argon8 directly from your device as well as access to other keyboard settings
- Settings page to configure MIDI settings and update the firmware

MODALapp is available for OSX, iOS, Windows, and Android.

To find the app on your platform, visit www.modalelectronics.com/modalapp



Getting Started

Connecting devices

MODALapp can be attached to an iPad using a Camera Connection kit, or an Android device using a USB OTG (On-the-go) adapter.

MODALapp can only be connected via USB MIDI and not by MIDI DIN.

Install and open MODALapp. You will see a splash screen until a Argon8 has been detected, at which point you will see the Editor page appear.

Playing Argon8

At this point you can play your Argon8 with any MIDI controller! MODALapp forwards all incoming MIDI to Argon8 automatically. Just make sure that your MIDI controller is sending to the same MIDI channel you're Argon8 is assigned to.

Main Editor

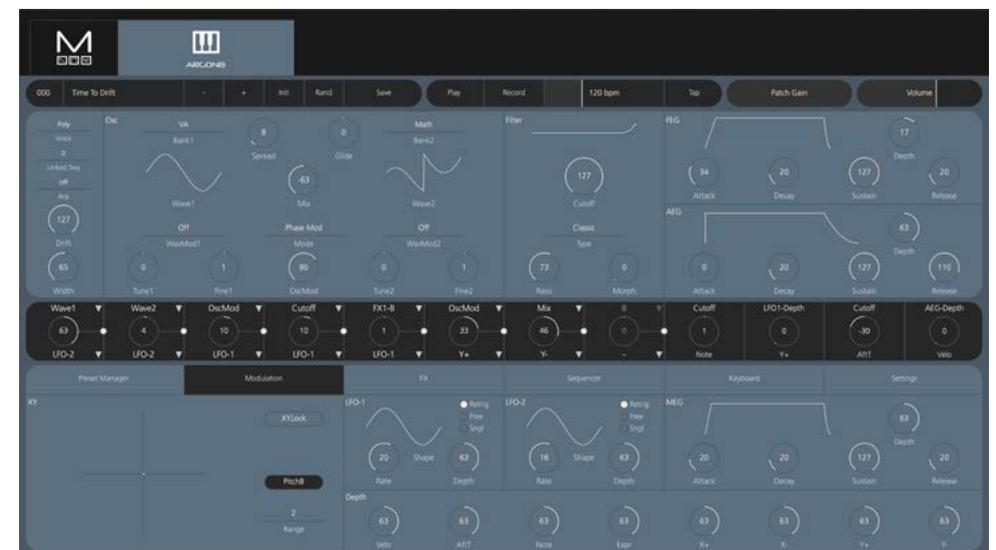
This is the main section for patch design / editing. You will find keyboard/voice, oscillator, filter, and envelopes here.

The currently selected preset is shown at the top. There are also options for previous or next preset, init preset and randomise.

To save a preset first click the save button. You can then select the slot you would like to save the new preset with the - / + buttons. You can change the name of the preset by clicking on the preset name. Finally click either SAVE again to confirm or EXIT to discard any name / slot changes.

There is also access to play, record, tempo options as well as sliders for patch gain and volume.

Across the middle there are the 12 modulation slots with 8 user configurable and 4 pre defined. Only valid modulation destinations for the respective source will be shown in the drop down menu.



Preset Manager Tab

In the Preset Manager Tab there are options to curate, move, backup or import presets.

Presets can be loaded with a double click and they can be renamed with two slow clicks. To move a preset simply click and drag it into the desired location. Dragging the preset to either edge of the preset manager window will start it scrolling in that direction. Different banks can be accessed by dragging the selected preset over the bank button.

Multiple presets can be selected by holding shift, ctrl or cmd and clicking. Shift clicking will select a block of presets and cmd or ctrl clicking will select individual presets. Once multiple are selected you can start moving them by clicking on a selected preset and dragging.

Right clicking brings up a menu allowing exporting or importing patches. Exporting will copy and send all of the selected presets to the selected folder. Importing will overwrite all of the selected presets in the preset manager with the presets selected from your computer.

All actions will display a confirmation window unless the yes to all button has been clicked. In which case no confirmation window will appear for the rest of the session.

On touchscreens a single tap will be the equivalent of a cmd or ctrl click. Holding a selected preset will start a move action



Modulation Tab

In the Modulation Tab there is access to the parameters for LFO-1, LFO-2 and MOD-EG.

There is also an XY pad that will emulate the movements of the Joystick on Argon8 as well as options for pitch bend and XYLock so that the XY pad will not return to zero on release.

Finally there is also access to the global depths of the 8 modulation sources Velo, Aftertouch, Note, Expression Pedal and the 4 Joystick axis.



FX Tab

In the FX Tab you can load, initialise and save any of the FX presets as well edit any of the global FX parameters such as Level and Distortion.

The FX preset selection box on the left will display that no preset is loaded if an fx parameter is altered in any way, e.g. changing an fx parameter on Argon8 or loading a patch.

Also on this page you will find the external Audio In parameter that controls the amount of Audio In signal sent through the 3 stereo FX engines.

Finally there is access to the 3 stereo FX engines that show the currently selected FX in each slot and their respective controls.



Sequencer Tab

In the FX Tab you can load, initialise and save any of the Seq presets as well access the live sequence controls such as Length, Hold, Loop and Quantise.

The top row of buttons in the bottom left will mute either the note row or any of the 4 parameter animation lanes.

The bottom row of buttons in the bottom left will clear the note row or animation lanes.

On the right you can draw in and edit the 4 animation lanes as well as change what parameter that name is effecting.

Animation lanes cannot be altered while the Argon8 is recording. It is also not possible to alter a lane without a parameter selected.



Keyboard Tab

In the Keyboard Tab there is a MIDI controller that can be used to play notes on Argon8 from your device. There are pitchbend and modwheels as well as 3 buttons to determine how many octaves are shown on the screen at one time. The piano keyboard can be scrolled using the top scroll bar.

There is also access to the Arpeggiator controls and transpose/chord options.

Settings Tab

In the Settings Tab there are options for updating your Argon8 to the latest versions. ModalApp will notify you when a new update is available.

To have the app update the screen in realtime, the page switch mode needs to be set to one of the (All) or (MIDI) options.

Finally there is access to the other settings available on Argon8. For a list of all settings available please read the Settings section in Synthesis Engine section of this manual.

