Manual Version: 0.3 (firmware:147)

ALM022 SQUID SALMPLE USER GUIDE.

Introduction

The 'Squid Salmpler' is a Eurorack 8 channel audio & CV sampler. It is designed for immediate real time sampling, editing and mangling within a modular context.

Taking influence from early hardware samplers, The Squid Salmple focuses on usability & instinctive operation, incorporating a proven Pamela's Workout style user interface for minimal screen dependance & a fun, hands on experience.

With support for sampling and playback for both audio and CV, as well as CV control of all parameters, on-the-fly bank loading & saving to USB, The Squid Salmple brings a unique take on old school sampling into the modular realm

The Squid Salmple comes with a USB Stick containing approximately 90 banks of original carefully curated royalty free samples. This includes a wide range of sounds from classic drum machines & weird synths to field recordings & CV modulations. Banks are provided by both ALM and some of our favourite artists and friends including Mumdance, Solid Blake, Russell Haswell, Lauren Flax, Dave Burraston (NYZ), Sue Zuki, Dungeon Acid, Sasha Lewis and Andrew Duff.

Features

- 8 independent channels, 4 DC coupled outputs (2 channels per out) and a mix output (ac coupled)

- 1 mono record input handling both CV and audio input signal from line to modular level.

- Each channel has approx 11 seconds of 16 bit / 44.1Khz CD quality sample time stored in low latency RAM.

- Each channel can have various parameters edited all in real time; bit depth, rate, lo fi playback speed/pitch, amplitude level with a simple envelope, looping with crossfade, playback direction, start, end and loop 'cue' positions, multiple cue groups and more.

- Three CV inputs allow for CV control to be assigned to any & multiple parameters. Channels 6, 7 & 8 have dedicate 1v/oct input for control of pitch (expect crunchy aliasing!).

- Sample record and channel destination can be controlled either by automated patching or manually via UI controls.

- Save and load samples to USB keys as regular Wav format files arranged in quick-to-use banks of 8 (Up to 99 per key).

- Easy firmware update via USB key.

- Skiff friendly with reverse power protection.

- Made in England,

Technical Specifications

- Supply: *+12V 300mA Max / -12v* 35mA

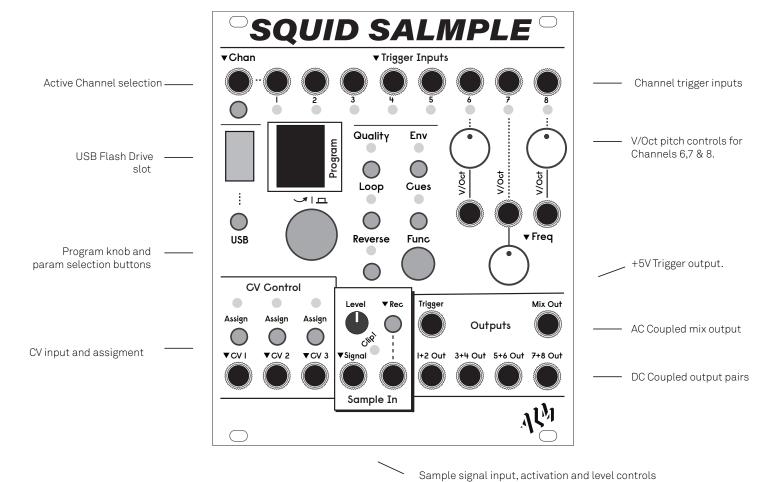- Size: 21 *HP*

- Depth: 38*mm*

- *AKM audio codecs with 44.1khz / 16 bit quality audio (in & out)*

- 1-2ms trigger response time

- *Approx -75db noise floor.*

Operation

Panel Layout

Active Channel selection

USB Flash Drive slot

Program knob and param selection buttons

CV input and assigment

Channel trigger inputs

V/Oct pitch controls for Channels 6,7 & 8.

+5V Trigger output.

AC Coupled mix output

DC Coupled output pairs

Sample signal input, activation and level controls

SQUID SALMPLE

▼Chan   ▼Trigger Inputs

1 2 3 4 5 6 7 8

Program

Quality   Env

Loop   Cues

Reverse   Func

V/Oct V/Oct V/Oct

▼Freq

USB

CV Control

Assign Assign Assign

▼CV 1 ▼CV 2 ▼CV 3

Level ▼Rec

Clip!

▼Signal

Sample In

Trigger   Mix Out

Outputs

1+2 Out 3+4 Out 5+6 Out 7+8 Out

ALM

Getting Started

The Squid Salmple works with a bank of 8 independent samples each having their own channel and trigger input to initiate playback. Outputs are shared in both fixed pairs and all together via an AC coupled mix output. The panel allows for the user to quickly navigate between channels (via the program knob encoder or channel selection button), preview channel samples (click program knob) and edit various sample parameters (accessed via controls in centre and right of module). Many of these parameter can also have CV control assigned. There are also controls for populating channels either via loading from USB or via sampling an input signal.

The Salmple powers on to the channel selection screen. Firstly to load a sample bank, with the supplied usb stick inserted, press the USB button and then turn the program knob to select a bank, then click and select 'Load' from the menu clicking the program knob again. The bank's samples will load and then you will be returned to the channel screen.
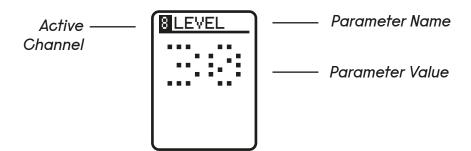
To cycle through and select a different channel, press the 'Chan' button or turn the program control knob. Clicking the program control knob will play any sample loaded for the currently selected channel. You can also start a channel's sample playing by patching a trigger into its associated input. Playback will come from the mix output or the channel's associated pair output (a cable patched in here will remove from the mix output).

You can adjust various parameters for the current sample channel by repeatedly pressing one of the relevant blue buttons to cycle through related grouped parameters. Parameter values are then adjusted by turning the program knob. You can return to the channel screen by pressing the channel button. Parameter screens explained in next section.

Connect an audio source to the 'Signal' input and adjust the level control until just before the red 'clip' LED lights. Press 'rec' once to arm the sampler and then again to start sampling. Wait a few seconds and then press rec again to stop sampling. Press program knob to play back the sample. Press 'Cues' to see the waveform of your captured waveform. See the "recording Samples' section for more info on sampling.

Channel Parameters

This section covers editing parameters for the currently selected channel. You can select a channel via pressing the 'Chan' switch, cycling the encoder whilst the Channel screen is active or by patching a trigger into the Channel input.

You can move to the same parameter screen but for another channel by holding the channel button down and turning the encoder.

Each of the blue button sections has the following parameters;

Quality - Bits

Adjust bit depth of played back sample.

Quality - Rate

Adjust the playback rate of the sample in khz.

Quality - Speed (not present on chans 6,7 & 8)

A linear playback speed control.

Holding *Func* whilst this screen is active will overlay a BPM value for the sample with the assumption its a bar (4 beats) in length and BPM thus fits 1-300.

Quality - Quant (only present on chans 6,7 & 8)

This is a basic quantisation control for the playback speed.

Possible settings are;

• **'OFF'** - No quantisation

- **'12'** - Quantisation to Chromatic 12 tones

- **'OT'** - Full per octave quantisation - this is useful for easily matching original sample speed with controls.

Quality - Filter

Enables a resonant multimode filter on each channel. 'Unlocks' the following Frequency and Resonance controls

Possible settings are;

- **'OFF'** - No filter

- **'LP'** - Low pass

- **'BP'** - Band pass

- **'NT'** - Notch

- **'HP'** - High pass

Quality - Frequency

Adjust the cut off frequency of the filter, only appears when a filter type is selected. Hold 'Func' while turning the encoder to set the resonance without leaving the Frequency page.

Quality - Resonance

Adjust the resonant peak of the filter, only appears when a filter type is selected. Hold 'Func' while turning the encoder to set the frequency without leaving the Resonance page.

Env - Level

Adjust the playback volume of a sample. At 50 is unity gain. below will attenuate, above increase.

Use this setting to avoid digital clipping when mixed. Value defaults to 30 as to conservatively avoid digital clipping.

Env -Decay

Add a simple decay envelope to fade out the volume of the sample. Decay time shortens as value rises.

If a sample is set to loop the envelope will effect the loop as a whole (rather than single sample) with max decay time being 10 seconds.

Env - Attack

Add a simple attack envelope to control volume at the beginning of sample playback. Behaves similar to Decay if the sample is set to loop.

Env - E Trig

Fires a trigger when channel sample playback stops - this could be a 'virtual' trigger which can trigger another channel internal or a real one sent on the trigger output.

Loop - Loop

The arrow indicates the current looping mode for the sample. A single forward arrow indicates usual forward playback. An arrow with loop sample indicates basic looping between sample loop and end points.

Both back and forward arrows indicates 'zig zag' type looping where sample playback goes alternatively forwards then backwards between loop and end points.

If 'GATE' is also displayed then the sample will only play & loop whilst the associated channels trigger input is held high (like a sustain). If Decay is set however, playback will move to this stage when the trigger goes low.
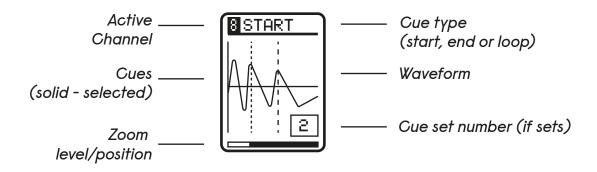
Loop - X-Fade

Adds a simple cross fade between the sample end and loop points as to smooth out loops.

Reverse - Reverse the sample.

Cues - Start, End & Loop

Set the samples start, end and loop points

Active Channel ——— | 8 START | ——— Cue type (start, end or loop)

Cues (solid - selected) ——— | ——— Waveform

Zoom level/position ——— | 2 | ——— Cue set number (if sets)

Repeatedly pressing the '*Cues*' button will cycle between the channels samples start, end and loop 'cue' points - i.e. where sample playback begins, ends and loops.

Twist the program knob to adjust selected cue point. Hold *Func* and twist program knob to zoom in and out of the sample centred around the current cue point. How far the cue point moves will be dependent on zoom level and encoder acceleration.

The zoom level and position within the sample is indicated at the bottom of the display. At maximum zoom level the actual sample offset value (in samples) is also displayed.
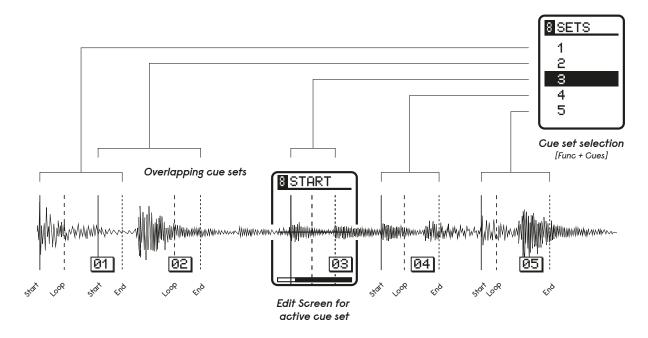
Moving a start point beyond the loop point will also move the loop point forward. Bringing the end point behind the loop point will bring the loop point backwards.

Cue Sets

To access the Cue Sets screen, Hold '*Func*' and press the *Cues* button.

Cues Sets allow for multiple groups of Cue start, end and loop points to be used on the same sample. By then switching between different Cue Sets various playback effects are possible, the most obvious of which is chopping up a break beat.

Cues sets can be added direct by the Squid Salmple itself or via common audio editing software on your computer. Cue Sets can be switched via both CV, Trigger and direct control.

Cue set selection
[Func + Cues]

Overlapping cue sets

Edit Screen for active cue set

When accessing the Cue Sets screen (hold *Func* + *press Cues*) A small menu will appear of operations to add Cue Sets in various ways. If some Cue Sets already exist a list of these will also appear in this list. Once added, Cue sets can then made active and switched between here (or have CV control assigned).

Select 'Add' and click program knob to add a cue set. You can then select the new Cue Set (by scrolling up) and edit its start, loop and end points by switching back to the main Cues screens (press '*Cues*' button - the active cue is now shown in a small box). Any changes will be remembered.

To remove a Cue Set, in the Cue Sets screen with the set to be removed highlighted, Hold *Func* and click program knob to remove it.

To make a cue set active simply turn program knob to select its number. If sample is currently playing or recording it will be queued up for next triggered playback otherwise it will change immediately.

CV can be assigned (see next section) so the active Cue Set selection above is CV controlled.

The Random and Step options in the Cue list can also be made active when selected. 'Random' will jump to a random Cue Set active when the channel is triggered. 'Step' will step to the next one (or first if at end of list).

The Split and Auto options create Cue Sets more intelligently.

Select 'Split' to cut all sets into equal halves (useful for quickly cutting up loops into synchronised chunks).

'Auto' will attempt to create Cue Sets automatically by detecting transients and zero crossings on the original sample. It works best of source material that has obvious transients. Note this function will delete any existing cue sets even if no new ones are found. If no Cues are found check for DC offsets (see calibration appendix) or a high noise floor confusing the zero crossing detection.

The 'RM ALL' option will delete all cue sets. There is no undo!

Note If a Wav file contains 'markers' these will automatically get converted into cue sets when the wav file is loaded. A program like 'Ocen Audio' (free for Mac & PC) can be use to add and edit markers.

V/Oct knob controls

Channels 6, 7 & 8 have a dedicated v/oct control and input.

When the pitch roughly matches the original sample speed a 'tuning fork' icon will be displayed on the channel screen. To match precisely the original sampling speed use the 'Quant' parameter under Quality.

Expect only 2-3 octaves of rough tracking with deliberate 'lo fi' sample and hold style pitching (leading to crunchiness but artefacts & aliasing sometimes obviously present on 'purer' sounds. Run through a filter to clean to taste.)

Assigning CV Control

CV control can be assigned to any of the above parameters. There are 3 CV inputs on the lower left of the module. CV inputs respond to voltages between 0 and 5v. Voltages input outside of this range are safe but will be ignored.

With a parameter screen active that you want to assign to CV control, press the relevant CV assign button. You can digitally adjust attenuation and offset for that assignment by pressing *Func + assign* button for that CV input.

CV control of Reverse is a slightly different mapping. To assign/un-assign CV to reverse, press & hold *Reverse* and the selected *assign* button.
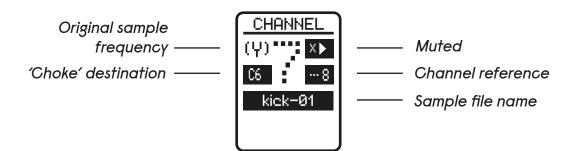
Channel Operations

As well as displaying the currently selected channel number, the screen also can display some other info and perform some useful operations.

Channels 6, 7 & 8 will display a small 'tuning fork' icon if the frequency of the sample is set close to the original sampling frequency (note: use Quant option for precise matching).

If the Channel is set to reference the sample data of another channel - in which case the referenced channel number is displayed to the right of the main channel number. The referenced Channel can be set via holding 'Chan' button and turning program knob.

A 'Cx' will be displayed to the left of the channel number if set to 'Choke' another channel - 'x' being the Channel. You can set this by holding down the 'Chan', then the 'Env' Button and then turn the program knob.

Original sample frequency ——— ———— Muted
'Choke' destination ——— ———— Channel reference
———— Sample file name

Pressing *FUNC + Env* will Mute a channel. Pressing *Chan + FUNC + Env* will Solo a channel. Press again to un-solo. Multiple channels can be solo'd (un-solo all to return to normal state). These features can be very useful in a live performance.
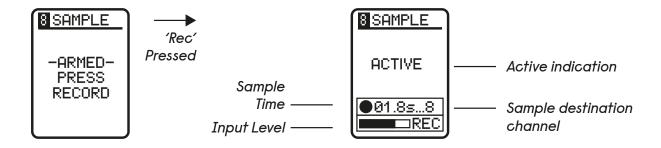
Recording Samples

Samples are recorded into the current selected channel. Max sample time per channel is 11 seconds. Quality is fixed at 16 bit 44.1khz mono. The recorded audio can be set to overwrite, overdub or extend the sampled audio currently stored in the channel buffer.
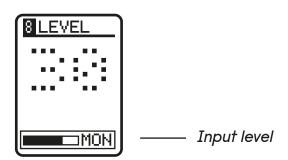
Audio as well as CV can be recorded but can be tricky to precisely match levels (for v/oct type sequences for example).

You can input anything from line level to modular level.

With an audio source connected (modular or line level) to the 'signal' input adjust 'level' knob to just avoid clipping (red LED will light upon audio clipping). Arm sampler by pressing '*Rec*' record button. Display will indicate sampler armed and ready. Press record again to begin recording. The Display will show level and elapsed sample time. Press the record button again to stop sampling. The channel will now contain this new sample.

When starting recording of a sample, a gate will be emitted from the 'Trigger' output (high whilst recording active). This can be used when sampling drum type modules which are trigger activated.

Note: You can audition (preview) the input source by pressing - *Func + Rec* button to enable monitoring of the sample input. The monitored audio can be heard out of output number 8 (and mix output unless 8 is patched out).

Sampling can be automated by patching a trigger into the jack below the 'Rec' button as to initiate sampling.

The length of the trigger into the 'Rec' input defines how the recording behaves. A short (< 500 ms) trigger will enable an internal envelope follower which will keep sampling until the signal source appears to drop to zero. Triggers longer than 500ms this be treated as a gate, with the recording continuing whilst the trigger is high. if the maximum sample time is reached the sample will loop back back to the beginning. Either recording type can also be stopped manually by pressing the record button.

The destination channel can be controlled by a trigger patched into the Chan input. A trigger signal will step through the active Chan.

You can 'lock' the recording destination channel by holding *Chan* and pressing *Rec*. Press again to toggle. The Sample arming screen will show if this is set.

Two other recording modes; 'Overdub' and 'Extend' are available as an alternate to the default 'Replace' mode. These can be set from the main Sample screen by turning the Program encoder to cycle between .

Overdub records on top of any existing sample data with the underlying audio having its volume reduced by -3db (50%).

Overdub will not clear any cue sets (unlike 'Replace') but will set the first one to the start/end points of the current overdubbed recording.

'Extend' will add recorded audio to the end of the channels recorded audio. It will also automatically add a cue set for the newly recorded sample. If Extend reaches the end of the sample buffer (i.e past 11 seconds) it will not record anymore and warn that the channel is 'full'. To clear you can edit the relevant outer cue set(s) or simply from record screen hold *rec* down and click the encoder.

The more advanced features above allow for the squid to be used for much more than a basic sampler - anything from automated bank creation to using the Squid as a flexible digital delay and/or audio and CV processor. Please see the 'ALM TV' youtube channel for videos exploring this.
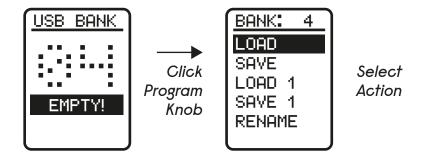
Saving & loading Banks

Samples are saved and loaded from/to a top level '/ALM022' directory on the inserted USB stick which is fat32 formatted. This directory will be created if it doesn't already exist. Samples are stored and loaded as .wav files following a specific directory structure for grouping and mapping samples to the Squid's channels. The structure is designed to be edited and files are added from plugging the USB directly into a computer.

The Squid supports loading and saving of named and numbered 'banks' of 8 samples. Banks are stored in a 'bank set' which can contain up 99 Banks. A USB key will always include a default bank set and any number of named others. Squid is also able to load individual samples from a Pool directory.

The stock USB key comes only with a default bank set directory of 99 banks.

With USB stick plugged into the front of the unit (on initial insertion you will need to wait a few seconds for the stick to be registered - a small window will 'pop up' indicating initial USB access), Press the 'USB' button to access the initial USB screen. Use the program knob to select a bank and then click the program knob to select an operation to perform.

You can then perform one of the following options;

LOAD

Load a complete bank into ram.

SAVE

Save your current channel set up as a bank (potentially overwriting!). Parameter data, cv settings etc will be saved with the Wav files as custom metadata.

LOAD 1

Load a single channel from a bank. Select the channel number from selected bank. It will be loaded into the currently active channel slot. Note you can preview a a single sample by holding *Func* and clicking the encoder.

SAVE 1

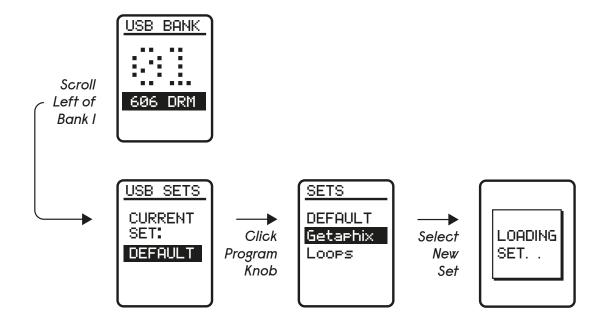Save currently active single channel to a bank. Select the destination channel number.

RENAME

Rename a bank. Use program knob to select characters. Press USB button to commit the name, any other to abort operation.

Using Bank Sets

Additional bank sets of up to 99 banks each can be created by making a sub folder within the /ALM022 directory and naming it 'Set ABCDEFGH' (with ABCDEFG being anything you want, max 8 characters). The amount of bank sets is only limited to the space of the USB stick.

To view or change the currently loaded bank set, press the USB button once and scroll to the left of Bank 1. The currently loaded set is displayed, press the encoder once to enter the list of sets and select another to load.

Sample Pool

There is a Pool sub directory in the /ALM002 directory where single samples and further directories of samples can be added for more classic and freeform loading and browsing of samples.

Scrolling once more to the left of Bank Sets or pressing the USB button twice in a row will open the sample 'Pool'.

This can be thought of as an additional 'load only' folder for storing bulk or uncategorised samples to browse through when designing banks directly on the Squid. Squid will automatically create a Pool directory on start up if a folder does not already exist.

To preview samples hold Func and press the encoder. Select a sample to load to the currently selected channel. Wav files must be 44.1kz 16 bit for the squid to load. Files longer than 11 seconds will be truncated. Stereo files will be made mono.

File Organisation

As previously mentioned, files are stored on the USB stick in a specific directory structure. E.g. at a top level.

Bank 1 & Bank 2 (to 99)are banks from the Default bank set.

Each Bank directory contains 8 numbered sub directories which each contain a named wav for their corresponding channel (can be named anything you want but only first 8 characters show up).

(Note if a numbered directory does not exist squid will fall back to loading a file named Chan-00x.wav with x being the channel number - this ensures compatibility with earlier firmware releases).

There is also an optional 'info.txt' text file within each bank directory which contains the bank name (First 8 ascii characters of file).

In this example, the 'Set Getaphix' & 'Set Loops' directories are two additional bank sets which again contain their own (up to 99) bank directories.

The Pool/ directory contains extra wavs and subdirectories that can be named anything you want.

Following these organisation conventions, you can manually add your own samples and directories, just make sure audio files are 16 bit and 44.1kHz, otherwise they will be ignored. Stereo files will be made mono.

Important notes regarding USB operation;

• Loading/saving can be slow but playback / triggering on the sampler will continue whilst this process occurs allows banks to change 'on the fly'

• Saved files will get clipped from their start to end points. (if cue sets are used, then clip will be at the min/max cue)

• Loading wavs that are too long will just get clipped at maximum sample length.

• Wav files saved from the sampler contain Squid Salmple specific metadata which includes the various panel settings etc for the individual samples.

• The sampler will remember the last bank loaded per usb stick and attempt to load when powered on.

- You can press the USB button to go back a menu. Press 'Chan' or any parameter button to exit USB screen

- Recording will be disabled whilst the USB screen is active.

- See Appendix 3 for info on supported USB sticks.

- USB button goes back up menus (i.e to exit rename)

!!DO NOT PLUG ANYTHING OTHER THAN USB FLASH DRIVES INTO THE USB PORT!!
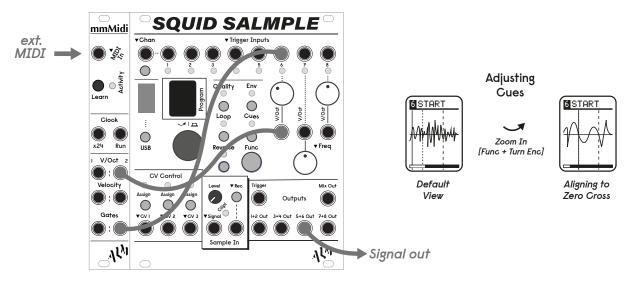
Key Combos

Various useful key combos for power-user functionality;

• From a parameter screen, to quickly switch to the same parameter but for another channel, hold *Chan* button down and turn program knob.

• From a parameter screen, to change the selected parameter for ALL channels (to the SAME value), Hold *Chan & Func* down & turn program knob.

• To swap two channels Hold Chan down, turn program knob to channel you want to swap with and press *Func*.

• To have a sample bank reference sample data of another; Hold Chan down, turn program knob to selected referenced channel (the referenced channel is shown to the right on the channel number)

• To have a Channel 'Choke' another (stop playing when it starts) Hold Chan, then hold Env and turn program knob to reference other channel (A 'c<num>' is displayed on the channel screen indicating what its choking)

• To send trigger out of Trigger output without enabling sampling Hold *Func* + click program knob

• To 'audition' / monitor audio input; Hold *Func* + press Rec to toggle - monitored audio is sent to output 8.

• To quickly mute a channel press *Func + Env* . To Solo press *Chan + Func + Env.*

• To access 'cue sets': Hold *Func* + click *Cues*. *Func* + program knob click deletes a cue

• To lock the destination recording channel hold *Chan* and press *Rec*

• To clear an 'extended' recording, hold *Rec* + click program knob from record screen.

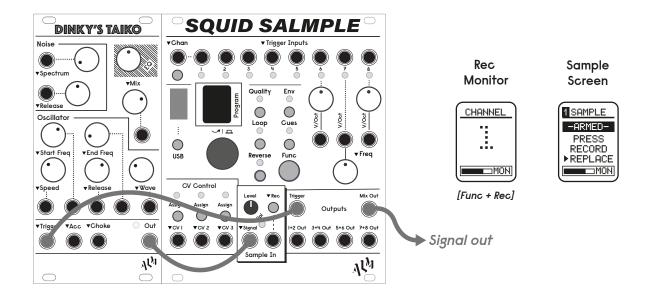# Patch Ideas

Simple Oscillator

1. Record or load an audio sample to channel 6, 7, or 8.

2. Turn on looping.

3. Enter the cues page and begin to adjust the start, end, and loop points. Zoom in on the sample for finer time adjustments [Func + Turn Encoder]. Isolate a single wave cycle with start and end aligned on the zero crossings. The sound should be fairly clean once the loop points are properly aligned.

4. Patch a V/Oct sequence to the pitch input. The droning oscillator can be patched out through an external filter and VCA or directly triggered internally by engaging the built in attack / decay volume envelope.

Tips

1. Try engaging semitone quantisation for a more stable oscillator if you are sequencing pitch in traditional 'western' intervals.

2. Different wave shapes can be saved by creating a new cue set for each one. These can be modulated by assigning CV on the cue sets page [Func + Cues].
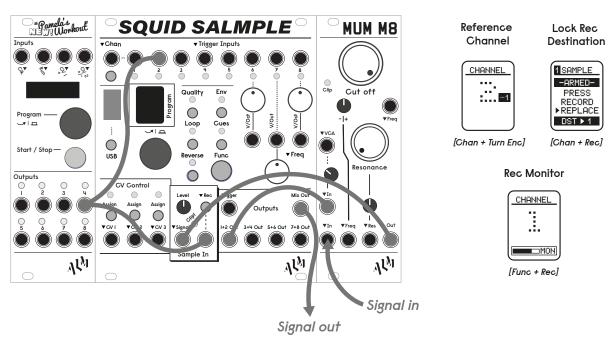
Quick Manual Sampling

1. The Squid produces a trigger at the output upon engaging record. It works with drum modules, synth voices or other events that can be triggered.

2. Patch the trigger output to a trigger or gate input on a drum module or envelope and the audio output of the triggered module(s) into the sample input of the Squid.

3. Engage record monitoring [Func + Rec].

4. Arm recording by pressing Rec once and choose the record mode (FW125). Then press Rec again to trigger your source and capture the audio.

5. Change up the source sound parameters and continue sampling to consecutive channels by pressing the Chan button to skip forward one at a time.

Tips

1. Using the recently added extend record mode, samples can be split up into a new cue set immediately with each consecutive recording.

2. This patch is great for recording CV as well, trigger an envelope and sample its voltages just like audio! Make sure to keep the input level low when sampling CV for the most accurate recreation. (See the "Playing Back Envelopes & CV" patch example for more info).
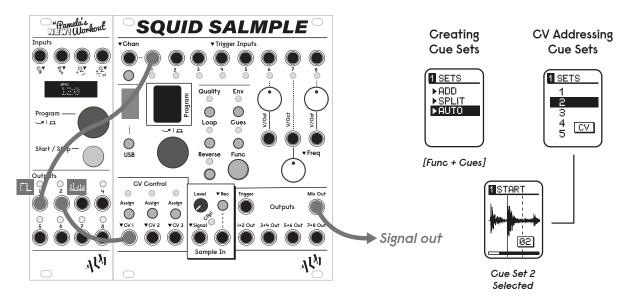
Single Channel Delay

1. This is the basic starting delay patch. Pamela will set the delay time by clocking both recording to Ch. 1 and playback of Ch. 2. The MUM M8 is acting as both the mixer and a filter for the feedback path.

2. Reference the record buffer on channel 1 from channel 2 [Chan + Turn Encoder].

3. Lock recording to channel 1 [Chan + Rec].

4. Engage record monitoring [Func + Rec]. This is the dry signal.

5. Engage the clock to start recording and playback. Remember the clock rate sets the delay time.

6. Set the feedback with MUM M8 input level, the filter Cut off will control the darkness of the repeats.

Signal in

Signal out

Tips

1. Try changing sample rate, bit depth, and playback speed. Note that changing the speed will create a pitch shifting delay. For cleaner pitch shifting delay use channel 6, 7, or 8 with quantising on.

2. To minimise clicks and pops try adding a small amount of attack time to the playback channel. The clock driving playback can be slightly delayed as well.
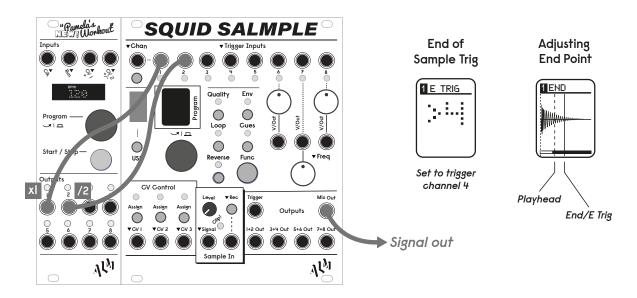
Drum Slicing & Playback

1. In this patch we will split up a recorded drum beat into cue sets using the built in transient detection.

2. Patch in a beat and record it to any channel like you normally would.

3. Once the recording is finished enter the cue sets page [Func + Cues], scroll down and select Auto. A number of transient aligned cue sets should appear (see tips section if you are having trouble).

4. Press the CV1 Assign button on the cue sets page.

5. Patch a x1 clock from Pam to trigger the beat and a random voltage to the CV1 input. Hit start and the Squid will begin playing the sliced beat, randomly selecting a new drum slice with each trigger.

6. If playback sounds off try adjusting the tempo or pitch of the sample. Transient alignment can be adjusted by setting start and end times manually.

Creating Cue Sets

[Func + Cues]

CV Addressing Cue Sets

Signal out

Cue Set 2 Selected

Tips

1. If selecting Auto does nothing, there may be DC offset or extra noise in your audio which makes it hard for the Squid to detect transients. You may need to check that your calibration settings are correct. (See manual Appendix for calibration).

2. Auto chop works nicely on single sampled drum hits as well. If you are sampling straight from a drum machine down to a single channel its an easy way to quickly get going.
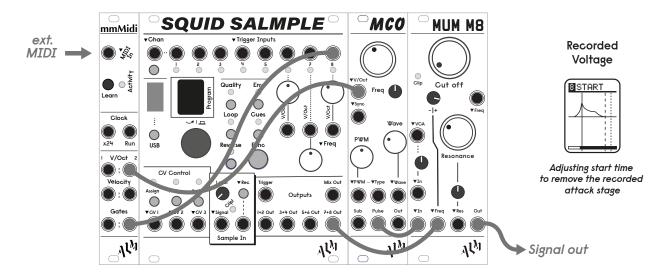
Internally Triggering Channels

1. Internal end of sample triggers allow one channel to trigger another when it reaches its set end point. The patch below has a 909 bank loaded with the kick and snare triggered from Pam by x1 and /2 clocks respectively. This sounds like a typical four on the floor beat.

2. Let's add the open hi-hat on the off beat. Instead of using up another channel of Pam, lets try an end of sample trigger. The hi-hat needs to hit at the same rate as the kick, but land between the beats.

3. Press the channel 1 Env button four times until E Trig appears. Turn the encoder until the display reads >4. The hi-hat on channel 4 should begin to play - but a little out of time.

4. Adjust the end time of channel 1 to align channel 4's timing. In this case it needs to be shortened and will cut off some of the kick's tail which isn't too noticeable at this speed.

End of
Sample Trig

*Set to trigger
channel 4*

Adjusting
End Point

Playhead

End/E Trig

Signal out

Tips

1. The EOS destination channel may be modulated by pressing any of the three CV assignment buttons on the E Trig pages.

2. Each channel can add its EOS trigger to the physical trigger output bus. Just turn the program knob until the display reads ON on the E Trig page.

Playing Back Envelopes & CV

1. Using the earlier "Quick Manual Sampling" patch method, we can easily record envelopes and other CV just as we would audio. Once an envelope is recorded a basic synth voice can be patched up for playback.

2. Patch a gate to trigger the recorded envelope, in this example the sampled CV is on channel 8.

3. Patch the 7+8 output to the Cut off and(or) VCA CV input(s) of the MUM M8. The individual channel pair outputs are DC coupled, the mix out is AC coupled and will not reproduce recorded CV signals.

4. Patch a sequenced oscillator through the filter to complete the synth voice.

5. Envelope velocity can be adjusted with the level parameter and its overall time can be changed with the pitch control on channels 6-8 or speed parameter on channels 1-5.

Recorded Voltage

Adjusting start time to remove the recorded attack stage

Signal out

Tips

1. The envelope shape can be modified with the start and end cue points. The built in attack and decay volume envelope can be used to smooth out the CV.

2. Recorded envelopes can easily be made into LFOs by engaging loop and the bit depth can be lowered to introduce stair stepping to CV curves.
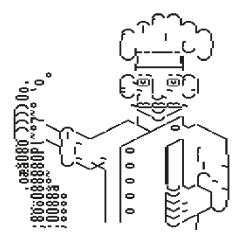
Limited Warranty

From the date of manufacture this device is guaranteed for a period of 2 years against any manufacturing or material defects. Any such defects will be repaired or replaced at the discretion of ALM. This does not apply to;

- Physical damage arising for mis treating (i,e dropping, submerging etc).
- Damage caused by incorrect power connections.
- Overexposure to heat or direct sunlight.
- Damage caused by inappropriate or mis-use.
- Use of incorrect or non official firmware

No responsibility is implied or accepted for harm to person or apparatus caused through operation of this product.
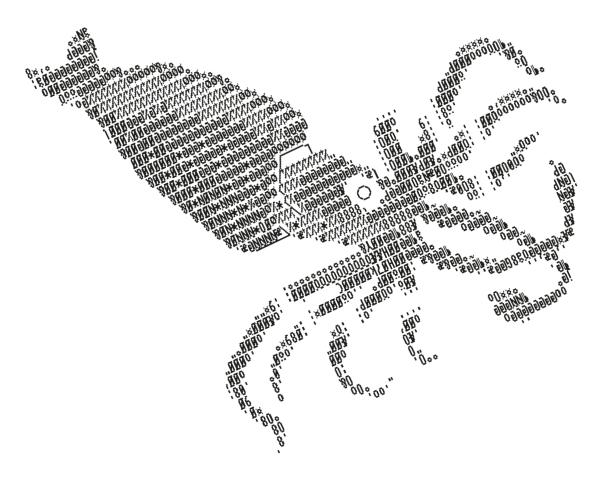
By using this product you agree to these terms.

Support

For the latest news, additional info, downloads and firmware updates please visit the ALM website at http://busycircuits.com and follow @busycircuits on twitter.

Questions? email help@busycircuits.com .

APPENDIX

I. Calibration / System info

Sampling input and outputs can be calibrated to remove slight DC offsets. Module should come calibrated from factory. Press *Func + USB* to access 'System' screen.

The 'V' row show the current installed firmware version.

The 'S' row shows the current sample input dc offset (can be +/-)

The 'A' row shows the current sample output dc offset (can be +/-)

The DC offset values can be adjusted via turning the program knob. Either value can be selected by clicking the program knob. Any other button will exit the system screen and save the config (there will be a pause).

To calibrate;

1. Power on module with no usb key inserted and nothing patched into module.

2. Patch '7+8 Out' to a good multimeter, or oscilloscope etc - something that will show 0v with good precision.

3. Select and adjust 'A' row value using the encoder so 7+8 output reads 0v (Expect value around -2000)

4. Now press '*Func + Rec*' to enable audio monitoring. The level of '7+8 Out' should change from 0V again.

5. Select and adjust 'S' row value (click program) so multimeter etc again reads 0v. (Expect value around -200)

6. Exit the menu by pressing Chan button (or other). Device should pause for a second or two whilst config is saved

(Note: if you hold *Func* whilst turning encoder values will increase by +/- 100)

II. Firmware Updates

Put supplied alm022-fw.bin on root of USB stick. Power on with *Func* button held down and release after a few seconds. Display will stay blank for a second and then 'Update' will be displayed together with a progress bar (which will flash rapidly). Wait for update process to complete and unit will reboot.

If the display stays blank, its likely either the USB stick is not recognised (try removing and re-inserting USB stick, or a different stick) or firmware file is not found (check name and is located in root i.e top directory of stick).

Please use only official firmware files when made available from the BusyCircuits website.

III. USB Support

It is possible that issues occur with certain USB flash drives - it could be that they fail to be recognised or in some rare cases lock up the unit (removing the key usually unlocks).

The following USB flash drives are known to work.. Generally go for drives which explicitly state USB2.0 support and are made by a well known manufacturer. Watch out for fakes!

- SanDisk Cruzer Fit 16GB

- SanDisk Ultra USB 3.0 / 64 GB

- Kingston Technology DTSE9 16GB & 8GB (32GB SE9 G2 does not work)

- Kingston DT micro 3.1 16GB

- Kingston Datatraveler 100 G3 16GB

- Integral Micro Fusion 8Gb

- Integral Metal Fusion 16Gb

!!DO NOT PLUG ANYTHING OTHER THAN USB FLASH DRIVES INTO THE USB PORT!!

IV. Included Sample Banks

The squid sample ships with 85 Banks of various sounds. See table here for details of each bank's contents and authors.

These banks are released into the public domain licensed under the Creative Commons CC0 License - see https://creativecommons.org/publicdomain/zero/1.0/

VI. Thanks

Thanks for Sasha Lewis for sound bank mastering, collation and documentation.

Thanks to Russell Haswell, Jack Adams, Sasha Lewis, Emma Blake, Lauren Flax, Andrew Duff, Dave Burraston, Alicia Matthews, Jean-Louis Huhta and Phil Bilsby for sample contributions, encouragement and beta testing.

Thanks to Heikki Lotvonen for Amiga ascii squid illustration.

IV. Firmware History

Version 124 04/20

- Add new recording modes - overdub & extend.
- Add new 'E Trigs' feature emitting triggers on sample playback end
- Add new 'auto' cue set creation.
- Redo Cue Sets screen and add remove all option.
- Fix saved cue sets sometimes getting incorrectly cropped.
- Fix potential lock ups with certain operations on channel 8
- Fix 'split' cues function allowing max cues (64)

Version 111 01/20

- Add support for previewing single sample loads.
- Add new sequential 'STEP' step mode.
- Add 'scanning' cv mode when both start & end cue CV assigned.
- Change Decay representation / handling to make more sense with CV etc.
- Improve bank rename UI.

ALM-022 - 'Squid Salmple'

•Add Func+ENC on BPM screen to allow finer grain control

•Fix potential zig zag lock ups & non v/oct chaos accessing v/oct params.

For more detailed history visit;

 https://busycircuits.com/firmware/alm022/ChangeLog.txt

•Add Func+ENC on BPM screen to allow finer grain control

•Fix potential zig zag lock ups & non v/oct chaos accessing v/oct params.

 https://busycircuits.com/firmware/alm022/ChangeLog.txt