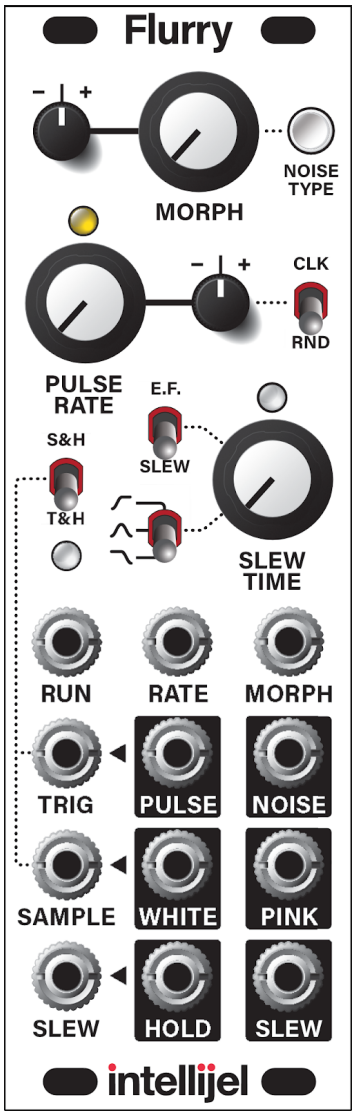
intellijel

Flurry

Clock, Random Pulse, Noise, Sample & Hold, Track & Hold, Slew, and Envelope Follower



Manual (English)

Firmware Version 1.1 | Revision: 2023.08.23

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COMPLIANCE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Intellijel Designs, Inc. could void the user's authority to operate the equipment.

Any digital equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

This device meets the requirements of the following standards and directives:

EMC: 2014/30/EU
EN55032:2015 ; EN55103-2:2009 (EN55024) ; EN61000-3-2 ; EN61000-3-3

Low Voltage: 2014/35/EU
EN 60065:2002+A1:2006+A11:2008+A2:2010+A12:2011

RoHS2: 2011/65/EU

WEEE: 2012/19/EU

INSTALLATION

Intellijel Eurorack modules are designed to be used with a Eurorack-compatible case and power supply. We recommend you use Intellijel cases and power supplies.

Before installing a new module in your case, make sure your power supply has a free power header and sufficient available capacity to power the module:

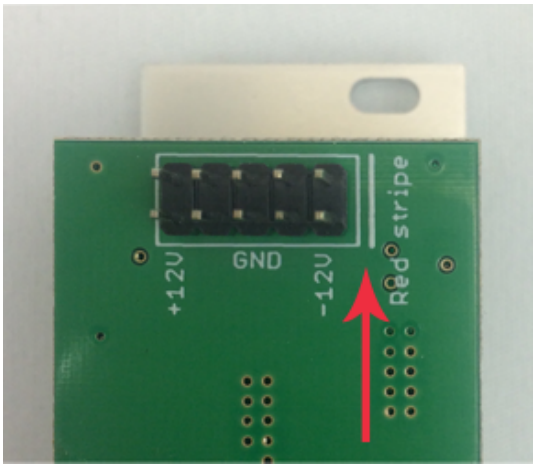
- Sum up the specified +12V current draw for all modules, including the new one. Do the same for the -12 V and +5V current draw. The current draw will be specified in the manufacturer's technical specifications for each module.
- Compare each of the sums to specifications for your case's power supply.
- Only proceed with installation if none of the values exceeds the power supply's specifications. Otherwise you must remove modules to free up capacity or upgrade your power supply.

You will also need to ensure your case has enough free space (hp) to fit the new module. To prevent screws or other debris from falling into the case and shorting any electrical contacts, do not leave gaps between adjacent modules, and cover all unused areas with blank panels. Similarly, do not use open frames or any other enclosure that exposes the backside of any module or the power distribution board.

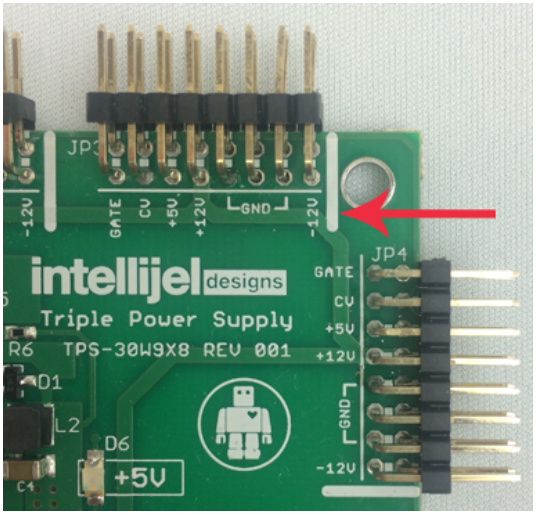
You can use a tool like ModularGrid to assist in your planning. Failure to adequately power your modules may result in damage to your modules or power supply. If you are unsure, please contact us before proceeding.

Installing Your Module

When installing or removing a module, always turn off the power to the case and disconnect the power cable. Failure to do so may result in serious injury or equipment damage.



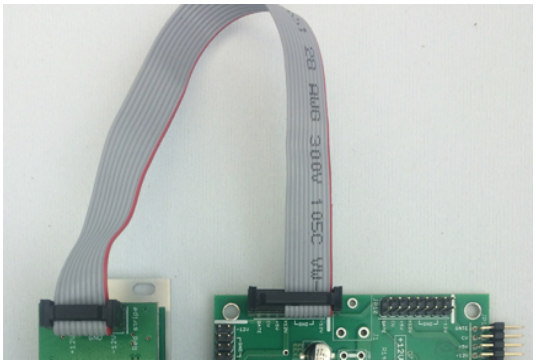
Ensure the 10-pin connector on the power cable is connected correctly to the module before proceeding. The red stripe on the cable must line up with the -12V pins on the module's power connector. The pins are indicated with the label -12V, a white stripe next to the connector, the words "red stripe", or some combination of those indicators. Some modules have shrouded headers to prevent accidental reversal.



Most modules will come with the cable already connected, but it's good to double check the orientation. Be aware that some modules may have headers that serve other purposes, so ensure the cable is connected to the correct one.

The other end of the cable, with a 16-pin connector, connects to the power bus board of your Eurorack case. Ensure the red stripe on the cable lines up with the -12V pins on the bus board. On Intellijel power supplies the pins are labeled with "-12V" and/or a thick white stripe, while others have shrouded headers to prevent accidental reversal.

If you're using another manufacturer's power supply, check their documentation for instructions.



Before reconnecting power and turning on your modular system, double check that the ribbon cable is fully seated on both ends and that all the pins are correctly aligned. If the pins are misaligned in any direction or the ribbon is backwards you can cause damage to your module, power supply, or other modules.

After you have confirmed all the connections, you can reconnect the power cable and turn on your modular system. You should immediately check that all your modules have powered on and are functioning correctly. If you notice any anomalies, turn your system off right away and check your cabling again for mistakes.

OVERVIEW

Flurry collects and connects a number of practical modular synthesis tools, focussed on clocks, noises, and randomness. Specifically, it contains:

- A *clock* and *random* pulse source with adjustable and modulatable rate
- Accurate *pink* and *white* noise sources
- Analog *sample & hold* and *track & hold* circuits with very low droop
- Analog *slew* with adjustable slew time and edge selection (rising edge, falling edge, or both)
- Envelope follower
- 16 digital noises, each with 2 parameters.

Most people consider noise to be “undesirable,” and product developers expend great effort to design circuits that minimize noise. So why make a module designed specifically to *create* noise?

Indeed, *unwanted* noise is undesirable. But not all noise is unwanted. Synthesizing the sound of wind or waves are a couple of the more obvious uses for a noise generator, but the possibilities go far beyond. The crack of a snare hit; the breathiness of a flute sound; an added sizzle to a resonant pad — all are within the sonic domain of noise.

But noise has many other benefits beyond simply being heard. Noise happens to make a wonderful modulator. When noise is used to modulate a filter’s cutoff frequency, or an oscillator’s pitch or pulse width, then all sorts of raspy, buzzy, gritty timbres are obtained.

Noise is also a key ingredient in sample & hold circuits — a technique most commonly used to generate stepped, random voltages. The circuit works by sampling an input signal’s voltage each time you send it a clock pulse, and holding that voltage until the next clock pulse. So, naturally, Flurry also contains the requisite clocking tools! Two of the most common destinations for the S&H output are a filter’s cutoff frequency (creating stepped, clocked timbral changes), and oscillator pitch (which produces random notes at clocked intervals).

Of course, you might not always want your voltages to change so abruptly at each clock pulse. Maybe you’d prefer they wobble about gradually and with more grace? To do that, you need a slew circuit, and once again Flurry has you covered — allowing you to select not just the slew time, but also whether the slew is applied to rising voltages, falling voltages, or both. A flick of the switch, and that Slew circuit becomes an envelope follower, enabling Flurry to generate envelopes from input signals (syncing to drum hits are a common use).

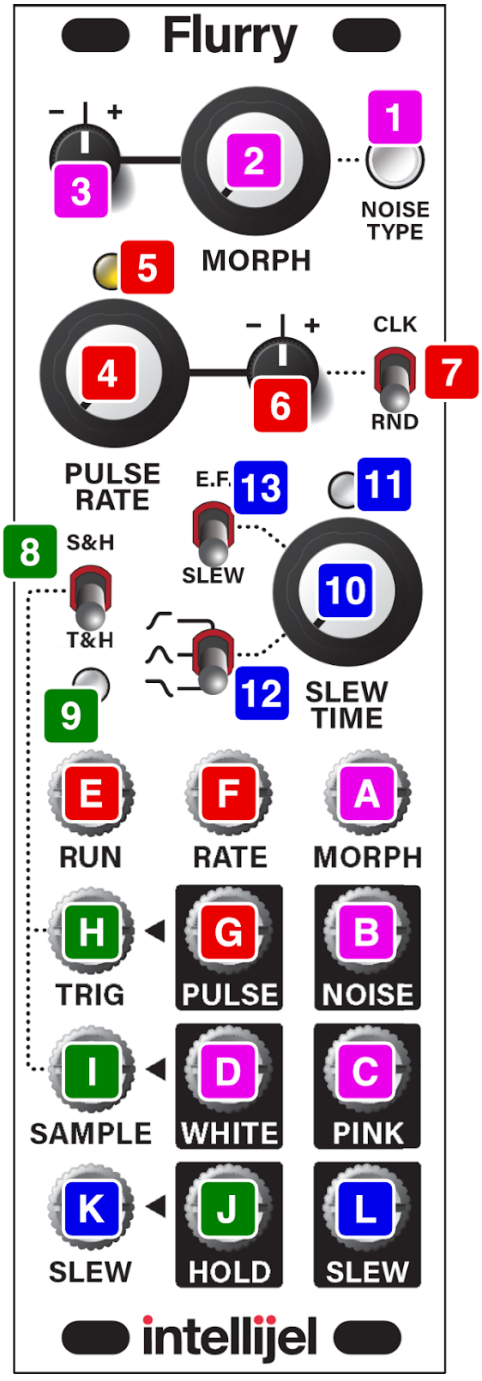
One of Flurry’s more interesting aspects is its collection of digital noises, which provide a wealth of interesting noises, suitable for either audio or modulation purposes. Each noise type has its own pair of unique parameters to further dial in the desired characteristics, with the primary parameter under CV control.

With all these features, plus the ability to create random pulses, clock to external pulses, perform more esoteric track & hold duties, Flurry is a noise lover’s toolbox.

FRONT PANEL

The module contains several functional blocks that all work together to create a flurry of noise and randomization options. The illustration on the right uses coloured legends to identify which functional block the control/jack is associated with. Specifically:

- **Magenta** labels indicate Noise features
- **Red** labels indicate Clock/Pulse features
- **Green** labels indicate Sample & Hold features
- **Blue** labels indicate Slew features



Noise Features

[1] **NOISE TYPE** button - This button has two different operations, depending on whether it's simply pressed (Standard operation), or pressed-and-held (ALT operation) while turning another knob.

- STANDARD operation : Press this button to cycle repeatedly through all noise types in a bank. Each press selects the next noise type. The selected noise type appears at the **NOISE OUT** **[B]** jack, with its characteristics modified by the **MORPH** **[2]** knob. The color of the button indicates which noise type is selected. The relationship between button color, noise type, and **MORPH** **[2]** functions are shown in the tables on the following pages.

  *NOTE: The first noise type in each bank is "Rainbow Mode," which flashes and gives you access to all noise types across both banks on the **MORPH** [2] knob.*

- ALT operation : Hold this button while turning another knob to invoke that knob's ALT functionality. Specifically, holding the button while turning the **MORPH Attenuverter** **[3]** knob selects the Noise Type *BANK*; holding it while turning the **MORPH** **[2]** knob adjusts the secondary parameter for the selected Noise Type; and holding it while turning the **PULSE RATE** **[4]** knob sets the pulse width. Each of these ALT operations is described more thoroughly in the sections describing the knobs themselves.

NOISE TYPES : BANK 01

COLOR	NOISE TYPE	DESCRIPTION	MORPH	ALT + MORPH
FLASHES	**Rainbow**	All Noise Types accessible via the MORPH knob	Cycles through all the Noise Types across both banks	Adjusts each Noise Type's primary MORPH parameter
RED	**Vinyl**	Pops, clicks and hiss	Density	Hiss
ORANGE	**Wind**	Synthetic Wind FX	Fundamental	Activity rate
YELLOW	**Droplets**	Random FM'd wavelets	Rate	Resonance
GREEN	**FM Regen**	Random 4 op FM patch generator	Regen Rate	Max Freq
CYAN	**FM Drum**	Bank of FM drums	Drum Sound[1]	Bitcrush amount
BLUE	**Cymbal**	Cymbal Noise	Tuning: ±2 oct	HPF
PURPLE	**Barber Pole**	Phased White Noise	Rate	Q & Direction
MAGENTA	**Shortwave**	Shortwave emulation	Carrier frequency	Squelch depth

[1] Selects from Kick, Snare, Hat, Cowbell and Cymbal as you rotate the knob.

NOISE TYPES : BANK 02

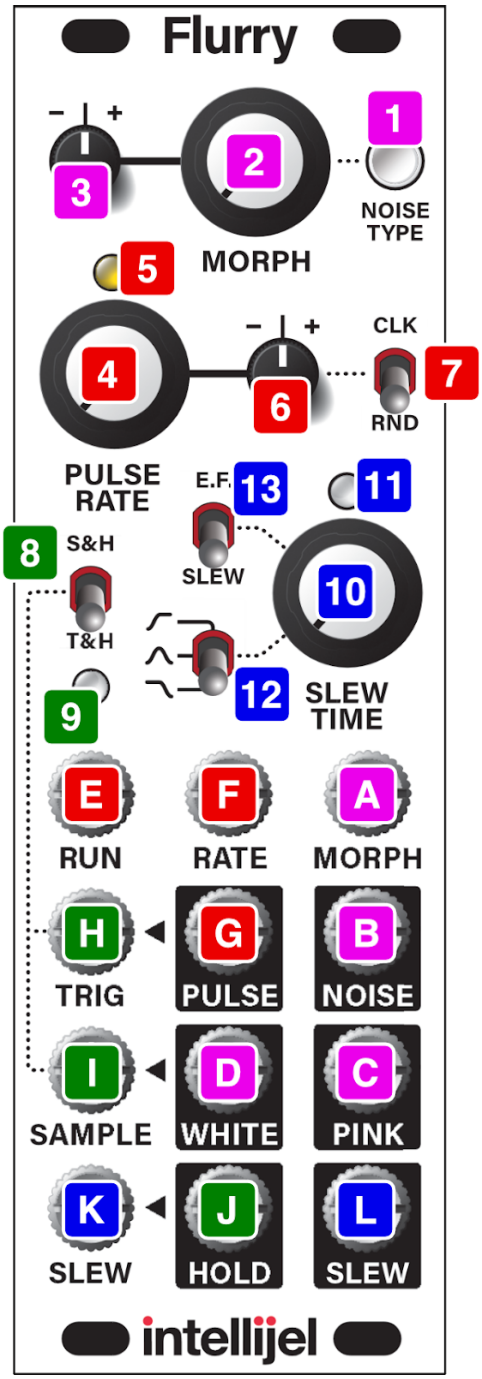
COLOR	NOISE TYPE	DESCRIPTION	MORPH	ALT + MORPH
FLASHES	**Rainbow**	All Noise Types accessible via the MORPH knob	Cycles through all Noise Types across both banks	Adjusts each Noise Type's primary MORPH parameter
RED	**Amp Hum/Hiss**	Amp hum with hiss	Hum level	Cycles[2]
ORANGE	**Looped White**	Tunable white noise loop	Tuning	Buffer Length[3]
YELLOW	**Particle**	Particle generator	Density	Spread
GREEN	**FM Noise**	3 op FM noise	Fundamental	FM Index
CYAN	**Phreakbox**	Phone Tone generator	Phone Tone[4]	Phone Distortion
BLUE	**Cymbal 2**	Alternate cymbal noise	Pulse Width[5]	Fundamental
PURPLE	**Noise Chorus**	Chorused white noise	Rate	Depth
MAGENTA	**Chaos**	Chaotic noise generator	Chaos A	Chaos B

[2] Clockwise from noon = 60 cycle hum + peak filter freq | CCW from noon = 50 cycle hum + peak filter freq

[3] Buffer Length increases from 256-4096 as you turn the knob. Regenerates when fully clockwise.

[4] From CCW>CW: Dial Tone > 1…9 > 0 > # > * > Busy Tone > Ring Tone > A > B > C > D > FSK_0 > FSK_1

[5] Pulse Width ranges from 3% to 50%



[2] **MORPH** knob - This knob lets you modify two different characteristics for each digital noise type, as selected with the **NOISE TYPE** [1] button, and sent out the **NOISE OUT** [B] jack.

- STANDARD MORPH characteristic : Turn the MORPH knob to vary the primary noise characteristic, which can be further controlled via the **MORPH IN** [A] jack and the associated **MORPH attenuverter** [3].
- ALT MORPH characteristic : Hold down the **NOISE TYPE** [1] button while turning the MORPH knob to set the noise's secondary characteristic. This parameter is not controlled by a voltage patched into the **MORPH IN** [A] jack.

NOTE: Each Noise Type's STANDARD MORPH parameter value is automatically saved whenever you switch to a different Noise Type — ensuring the parameter value remains the same when you next recall the Noise Type. Each Noise Type's ALT MORPH parameter value is saved within 10 seconds of changing it. All saved parameter settings survive a power cycle.

The relationship between the **NOISE TYPE** [1] button color, noise type, and the STANDARD and ALT **MORPH** [2] options are shown in the tables on the preceding pages.

[3] **MORPH** attenuverter - This knob has two different operations, depending on whether it's simply turned (STANDARD operation), or turned while pressing the **NOISE TYPE** [1] button (ALT operation).

- STANDARD operation : Scales and/or inverts the voltage patched into the **MORPH IN** [A] jack. When fully clockwise, Flurry uses the full amount of the incoming voltage to offset the value currently set by the **MORPH** [2] knob. At the noon (straight up) position, the incoming CV is fully attenuated, meaning it has no effect on the MORPH value. Turning the knob counterclockwise from the noon position inverts the incoming MORPH IN voltage (positive voltages become negative, and vice-versa), with the voltage level steadily increasing until the full (but inverted) range is reached when the knob is fully counter-clockwise.

NOTE: the MORPH input affects only the STANDARD MORPH parameter, and not the ALT MORPH parameter.

- ALT operation : Turn the attenuverter while holding the **NOISE TYPE** [1] button to select the desired *BANK* of Noise Types. Turning counterclockwise from noon selects BANK 01. Turning clockwise from noon selects BANK 02. The Noise Types contained in each bank are detailed in the tables shown earlier in this manual.

[A] **MORPH IN** - A voltage patched into this jack offsets the MORPH value from that set by the **MORPH** [2] knob. Positive voltages increase the MORPH value, while negative voltages decrease it. The MORPH IN voltage is attenuverted by the **MORPH attenuverter** [3], allowing you to scale and/or invert the incoming voltage.

NOTE: the MORPH input affects only the STANDARD MORPH parameter, and not the ALT-MORPH parameter.

[B] **NOISE OUT** - This output contains digital noise of the type selected by the **NOISE TYPE** [1] button, and sonic character defined by the **MORPH** [2] knob. See the tables shown earlier in this manual for a detailed description of the various available noise types.

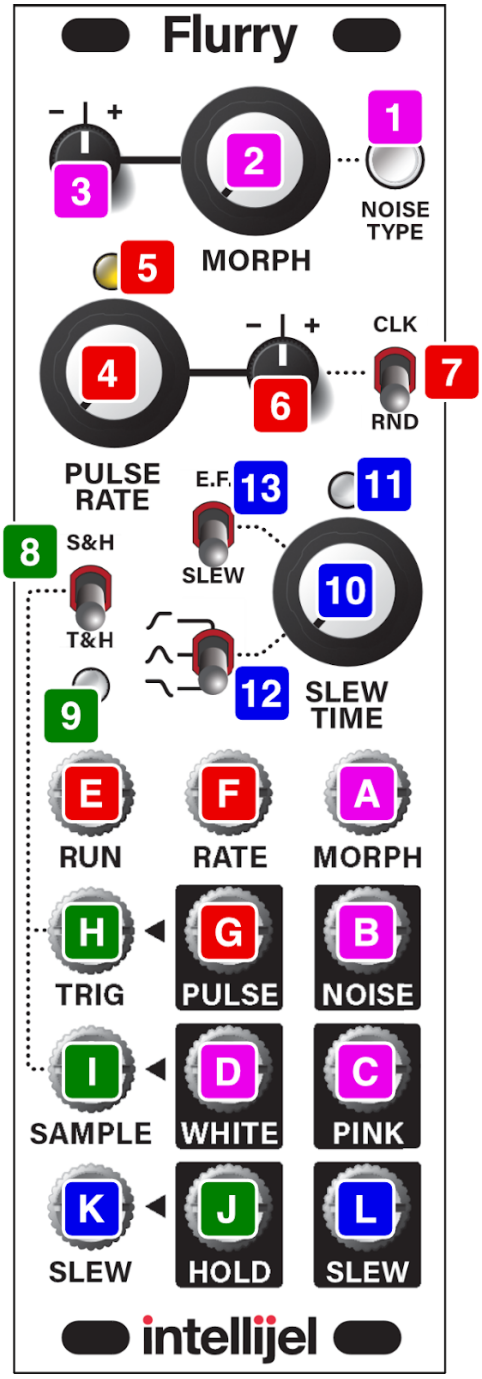
[C] **PINK OUT** - Pink noise output. Pink noise has less high frequency energy than white noise, and thus sounds “darker.” Pink noise contains equal power per *octave*, which means the 55 Hz wide range of frequencies in the octave between A1 and A2 contains the same amount of energy as the 880 Hz range of frequencies in the octave between A5 and A6. This has the effect of giving more sonic weight to lower frequencies, resulting in a deeper, thicker sounding noise. If used as a S&H sample source, it means random values will be clustered more around lower voltages than spread evenly across all voltages.

[D] **WHITE OUT** - White noise output.

White noise contains equal power per *frequency*, which means every frequency, whether it’s 70 Hz or 7,000 Hz is equally present in the noise signal, and the energy curve is not skewed toward the lower frequencies favored by pink noise. This gives white noise more brightness and sizzle than pink noise. When used as a S&H sample source, it means random values will be evenly distributed across all voltages.

*NOTE: If nothing it patched into the **SAMPLE IN** [I] jack, then white noise is normalled to the sample input.*

Clock/Pulse Features



[4] **PULSE RATE** knob - Sets the rate at which pulses appear at the **PULSE OUT** **[G]** jack and, via normalling, determines the sampling/tracking clock rate of the sample & hold circuit (which you can override by patching an external signal into the **TRIG IN** **[H]** jack).

The scale of the Pulse Rate knob changes depending on the position of the **CLK/RND** **[7]** switch. Specifically:

- CLOCK (up) position: The PULSE RATE knob sweeps from a 15 sec clock pulse at the minimum (counter-clockwise) setting, through standard "tempo" range clocks in the middle of the sweep, to audio rate pulses that top out at 2.5 kHz at the maximum (clockwise) setting.
- RANDOM (down) position: The PULSE RATE knob sets the probability that Flurry will generate a pulse. Internally, Flurry generates a pulse every 10 ms, with the knob determining how likely that pulse will be passed to the output. When the knob is set to lower (counter clockwise) values, most pulses are filtered out and individual pulses can be easily perceived, creating a sort of "morse-code" effect. At higher values, the random pulses occur more frequently, resulting in something more akin to "static."

*ALT functionality: If you turn the PULSE RATE knob while holding down the **NOISE TYPE** [1] button, it varies the PULSE WIDTH, rather than the rate. When turned fully counterclockwise, the pulse has a fixed 5ms pulse width, regardless of the actual clock rate. This makes for an excellent trigger source. Turning the knob clockwise sets a pulse width ranging from 1% to 99% of the clock length, with a fairly large deadzone around 50% (the factory default).*

[5] **PULSE LED** - Lights when Flurry's internal **PULSE OUT** **[G]** is high (+5 V).

[6] **PULSE RATE** attenuverter - Scales the amount (and polarity) of the voltage sent into the **RATE IN** **[F]** jack. The full range of the **RATE** control voltage is used when the knob is fully clockwise, and the voltage is attenuated as you rotate the knob counter-clockwise toward noon (straight up). At the noon (straight up) position, the incoming CV is fully attenuated,

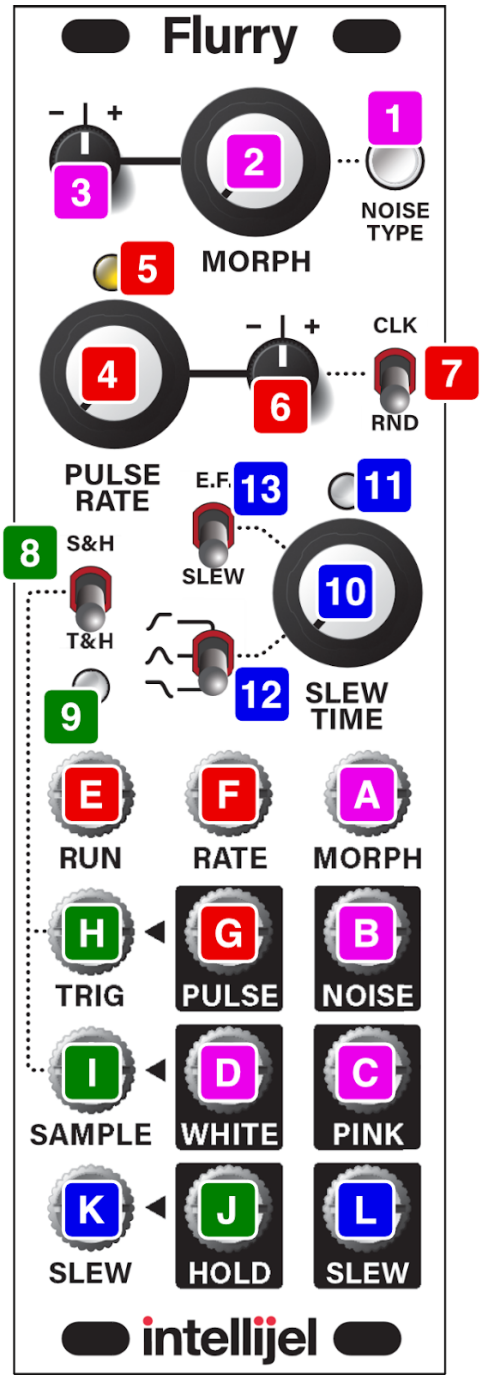
meaning it has no effect on the **PULSE RATE**. Turning the knob counterclockwise from the noon position inverts the incoming **RATE IN** voltage (positive voltages become negative, and vice-versa), with the voltage level steadily increasing until the full (but inverted) range is reached when the knob is fully counter-clockwise.

[7] **CLK/RND** switch - Sets whether or not the internal clock generates pulses at a steady, metrical rate; or whether it generates pulses at random intervals. The rate at which either mode generates pulses is set by the **PULSE RATE [4]** knob, described earlier.

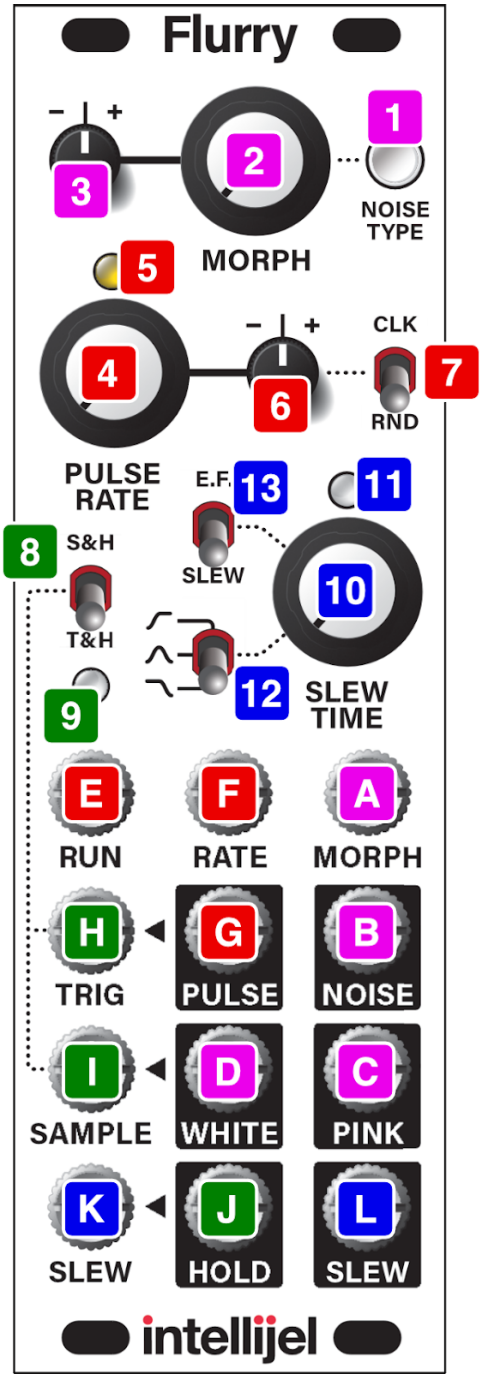
[E] **RUN IN** - If unpatched, then a high gate signal is internally normalled to this jack, and Flurry is *always* generating at PULSE signal. However, if you want to start/stop the PULSE remotely, you can patch an external control signal into this jack — voltage greater than approximately 1.1V will start the PULSER; while voltage less than approximately 1.1V will stop it — this allows you to gate the pulser with an external gate or control voltage. Additionally, when the input signal transitions from low-to-high (off to on), the pulser will reset.

[F] **RATE IN** - A voltage patched into this jack offsets the PULSE RATE value from that set by the **PULSE RATE [4]** knob. Positive voltages increase the PULSE RATE above that set with the **PULSE RATE [4]** knob, while negative voltages decrease it. The RATE IN voltage is attenuverted by the **PULSE RATE attenuverter [6]**, allowing you to scale and/or invert the incoming voltage.

[G] **PULSE OUT** - Outputs the Pulse signal (5 V gate) generated by Flurry's internal pulse circuit.



Sample & Hold Features



[8] **S&H/T&H** switch - Sets whether Flurry functions as a Sample & Hold circuit or as a Track & Hold circuit. Specifically:

- S&H (up): Flurry operates as a traditional sample & hold — sampling the **SAMPLE IN** [I] voltage at the rising edge of each pulse and holding that sampled voltage steady until the next rising pulse edge. This creates a new static voltage every pulse, which Flurry sends out the **HOLD OUT** [J] jack.
- T&H (down), Flurry samples the **SAMPLE IN** [I] voltage at the falling edge of each pulse, and holds that sampled voltage only for as long as the pulse remains low. When the pulse is high, the **SAMPLE IN** [I] voltage transmits through to the **HOLD OUT** [J] jack unaffected.

  Track & hold provides a rather interesting alternative to the more familiar sound of the sample & hold circuit. Although it loses that stepped, static output signal that's so effective at feeding an oscillator's pitch input, it gains a less certain (and perhaps more interesting) semi-rhythmic control signal for modulating other parameters in some truly unique ways.

[9] **SAMPLE IN LED** - Lights when an input voltage is present at the **SAMPLE IN** [I] jack.

The LED lights green if the input voltage is positive, and red if it's negative. The brightness of the LED indicates the voltage value, with a brighter LED denoting a greater absolute input voltage.

[H] **TRIG IN** - A pulse sent here determines the rate at which the voltage appearing at the **SAMPLE IN** [I] jack is sampled (or tracked). If nothing is plugged into TRIG IN, then Flurry uses its own internal PULSE generator as the TRIG IN signal.

[I] **SAMPLE IN** - Input signal to be sampled (or tracked) by the sample & hold circuit. Any signal appearing at this input is sampled every time Flurry receives a pulse (either from its internal PULSE generator or via the **TRIG IN** **[H]** jack).

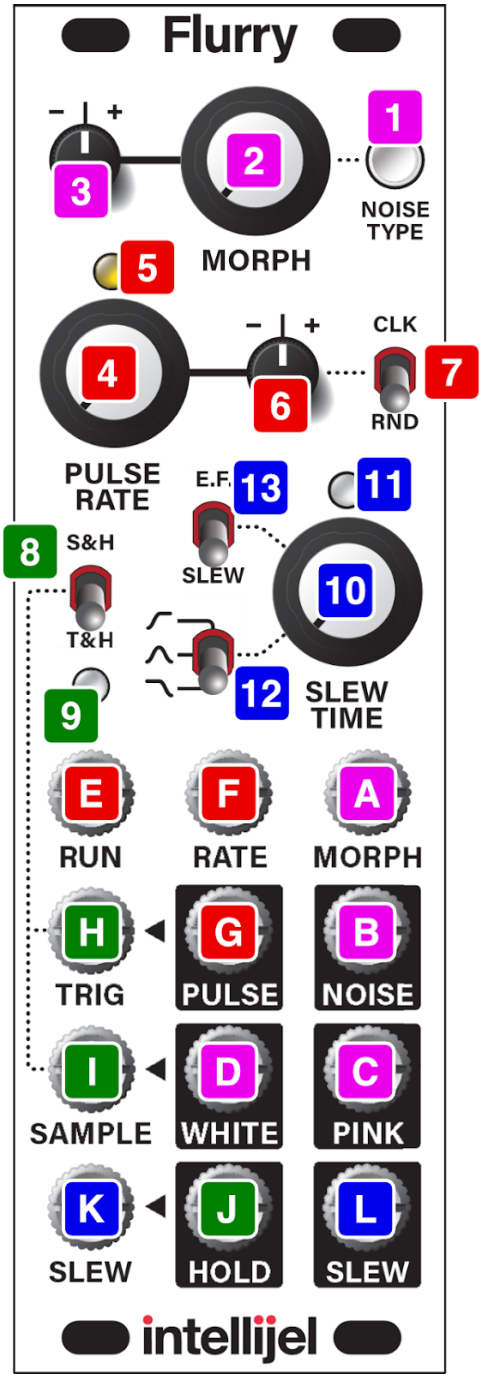
If nothing is plugged into the **SAMPLE IN** **[I]** jack, then Flurry's **WHITE OUT** **[D]** noise is used as the sample source. White noise produces the widest range of random values when sampled by a sample & hold circuit. If you want a more subdued set of random values that skews toward lower frequencies, you can patch the **PINK OUT** **[C]** noise output into the SAMP IN jack.

Any type of signal (not just noise) can be sampled. For example, assume you clock a slow LFO with a division of the same pulse you send to the **TRIG** **[H]** input. If you then send that LFO to the **SAMPLE IN** **[I]** jack and patch the **HOLD OUT** **[J]** jack into an oscillator's pitch input, you'll hear a repeating arpeggiated sequence, rather than the random stream of notes you'd hear if you sampled noise.

Another interesting way to use the SAMPLE feature is to feed it an audio signal (such as the output of an oscillator), then adjust the clock rate to get varying "bit crush" effects from the **HOLD OUT** **[J]** jack.

[J] **HOLD OUT** - Outputs the sampled (or tracked) signal generated by the sample & hold circuit.

Slew Features



[10] **SLEW TIME** knob - Sets how quickly (or slowly) the output voltage responds to a change in input voltage, thus converting any instantaneous voltage changes appearing at the **SLEW IN** **[K]** jack to a gradual "slewed" voltage change at the **SLEW OUT** **[L]** jack.

Slew times range from nearly instantaneous at the knob's minimum (counter-clockwise) position to a maximum of about 1 second for a 5V change.

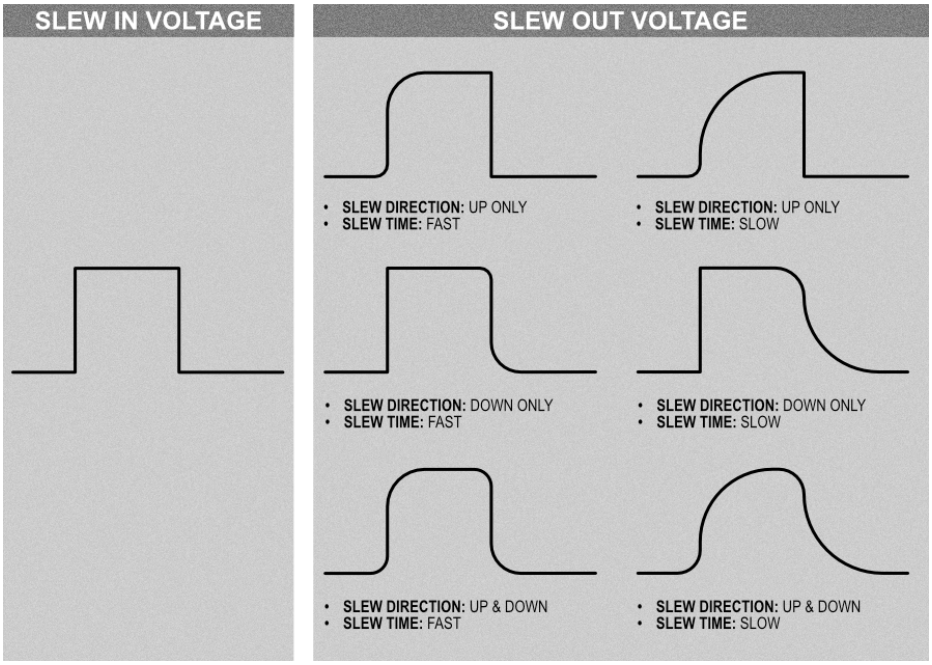
[11] **SLEW OUT LED** - Lights to indicate the presence of a slew output voltage.

The LED lights green if the slew voltage is positive, and red if it's negative. The brightness of the LED indicates the value of voltage, with a brighter LED denoting a greater absolute output voltage.

[12] **SLEW DIRECTION** switch - This 3-position switch determines whether voltage changes are slewed only when they increase in value (top position); decrease in value (bottom position); or if slew is active in both directions (middle position). Specifically:

- TOP Position = slews UP ONLY
- MIDDLE Position = slews both UP & DOWN
- BOTTOM Position = slews DOWN ONLY

The rate of change is determined by the **SLEW TIME** **[10]** knob, and the two controls work together as illustrated in the diagram on the following page:



[13] **SLEW / E.F.** switch - Sets whether the slew circuit functions as an envelope follower (E.F.) or as a standard slew. Specifically:

- E.F. (up) - Uses the slew circuit as an envelope follower, which is basically a full-wave rectifier applied to the source, and low-pass filtered to approx 70 Hz. Use this to extract an envelope from any signal patched into the **SLEW IN** **[K]** jack.

  The envelope follower is particularly useful for patching in an external signal (such as a kick drum or punchy bass track), since the circuit will then output an envelope that follows the timing of the input. The **SLEW DIRECTION** **[12]** switch sets whether slew is applied to the attack, decay or both. **SLEW TIME** **[10]** sets the attack/decay times of the envelope.

- SLEW (down) - Functions as a standard slew circuit, with slew rate determined by the **SLEW TIME** **[10]** knob; and direction by the **SLEW DIRECTION** **[12]** switch.

[K] **SLEW IN** - Input for the signal you wish to slew.

If nothing is plugged into SLEW IN, Flurry routes the **HOLD OUT** **[J]** signal through the slew, creating a “smoother” copy of the stepped output that appears at the **HOLD OUT** **[J]** jack.

If you plug some other voltage source into the SLEW IN, then the HOLD [F] output is disconnected and the circuit slews the connected input voltage instead. You can achieve a portamento effect if you plug the pitch output of a keyboard or sequencer into the SLEW IN, then adjust the **SLEW TIME** **[10]** knob to achieve the desired portamento speed.

[L] **SLEW OUT** - Outputs the slewed version of the signal appearing at the **SLEW IN** **[K]** jack. If nothing is connected to SLEW IN, then this jack outputs a slewed version of the HOLD output.

SYSTEM MODE

System Mode is a special boot mode, which enables you to perform a various global operations, such as a Factory Reset of the module, or enabling/disabling CVD Mode (which is a special display mode for those with color vision deficiency).

To enter System Mode:

1. Turn off power to the module.
2. Hold down the **NOISE TYPE** [1] button while you reapply power to the module.

   Flurry boots into System Mode. Once in System Mode you can perform a factory reset and/or enable/disable CVD mode (both discussed below).

To exit System Mode:

1. Turn off power to the module.

Factory Reset

To reset Flurry to its default factory configuration:

1. Boot into System Mode by turning off power to the module, then holding down the **NOISE TYPE** [1] button while you reapply power to the module.
2. Hold down the **NOISE TYPE** [1] button for 2 seconds.

   It will flash Yellow 5 times, then flash blue two times.
3. Remove power to the module, then reapply power (without holding any buttons down) to use your module normally.

CVD (Color Vision Deficiency) Mode

For those who have difficulty distinguishing between the LED colors in Flurry's normal mode, there is a special CVD mode available. To enable/disable CVD mode:

1. Boot into System Mode by turning off power to the module, then holding down the **NOISE TYPE** [1] button while you reapply power to the module.
2. Turn the **MORPH attenuverter** [3] to a point clockwise from noon to *enable* CVD Mode.

   The **NOISE TYPE** [1] button glows yellow when CVD mode is enabled.
3. Turn the **MORPH attenuverter** [3] to a point counterclockwise from noon to *disable* CVD Mode.

   The **NOISE TYPE** [1] button is unlit when CVD mode is disabled.
4. After enabling or disabling CVD mode, press The **NOISE TYPE** [1] button to save the CVD state. It will flash blue 2 times.
5. Remove power to the module, then reapply power (without holding any buttons down) to use your module normally.

   When set to CVD mode, the **NOISE TYPE** [1] button has a different color/flashing scheme than standard mode, as shown on the following page:

NOISE TYPES : BANK 01 (CVD Mode)

BUTTON	NOISE TYPE	DESCRIPTION	MORPH	ALT + MORPH
PULSING On Algo Colour	**Rainbow**	All Noise Types accessible via the MORPH knob	Cycles through all the Noise Types across both banks	Adjusts each Noise Type's primary MORPH parameter
BLUE 1	**Vinyl**	Pops, clicks and hiss	Density	Hiss
BLUE 2	**Wind**	Synthetic Wind FX	Fundamental	Activity rate
BLUE 3	**Droplets**	Random FM'd wavelets	Rate	Resonance
BLUE 4	**FM Regen**	Random 4 op FM patch generator	Regen Rate	Max Freq
ORANGE 1	**FM Drum**	Bank of FM drums	Drum Sound[1]	Bitcrush amount
ORANGE 2	**Cymbal**	Cymbal Noise	Tuning: ±2 oct	HPF
ORANGE 3	**Barber Pole**	Phased White Noise	Rate	Q & Direction
ORANGE 4	**Shortwave**	Shortwave emulation	Carrier frequency	Squelch depth

[1] Selects from Kick, Snare, Hat, Cowbell and Cymbal as you rotate the knob.

NOISE TYPES : BANK 02 (CVD Mode)

COLOR	NOISE TYPE	DESCRIPTION	MORPH	ALT + MORPH
PULSING On Algo Colour	**Rainbow**	All Noise Types accessible via the MORPH knob	Cycles through all Noise Types across both banks	Adjusts each Noise Type's primary MORPH parameter
BLUE 1	**Amp Hum/Hiss**	Amp hum with hiss	Hum level	Cycles[2]
BLUE 2	**Looped White**	Tunable white noise loop	Tuning	Buffer Length[3]
BLUE 3	**Particle**	Particle generator	Density	Spread
BLUE 4	**FM Noise**	3 op FM noise	Fundamental	FM Index
ORANGE 1	**Phreakbox**	Phone Tone generator	Phone Tone[4]	Phone Distortion
ORANGE 2	**Cymbal 2**	Alternate cymbal noise	Pulse Width[5]	Fundamental
ORANGE 3	**Noise Chorus**	Chorused white noise	Rate	Depth
ORANGE 4	**Chaos**	Chaotic noise generator	Chaos A	Chaos B

[2] Clockwise from noon = 60 cycle hum + peak filter freq | CCW from noon = 50 cycle hum + peak filter freq

[3] Buffer Length increases from 256-4096 as you turn the knob. Regenerates when fully clockwise.

[4] From CCW>CW: Dial Tone > 1…9 > 0 > # > * > Busy Tone > Ring Tone > A > B > C > D > FSK_0 > FSK_1

[5] Pulse Width ranges from 3% to 50%

FIRMWARE UPDATES

Firmware updates, if available, are contained within the latest *Intellijel Firmware Updater* application, which you can download from the product's page on the Intellijel.com website. The application is available in both Macintosh and Windows formats, and will install firmware into your module over USB. Use the drop-down lists at the top of the application to select the product you wish to update, and the firmware version you want to install. Click the **Instructions** button to read specific instructions for updating your module.

1.1 (Apr, 2023)

- **NEW** : CVD Mode — an alternative button coloring scheme for improving Flurry's usability for those with Color Vision Deficiency.
- **NEW** : New System Mode boot operation.
- **FIXED** : Fix for CV input beyond ±5V getting clipped

1.0 (Mar, 2023)

- Initial release

TECHNICAL SPECIFICATIONS

Width	8 hp
Maximum Depth	34 mm
Current Draw	116 mA @ +12V 30 mA @ -12V