

behringer

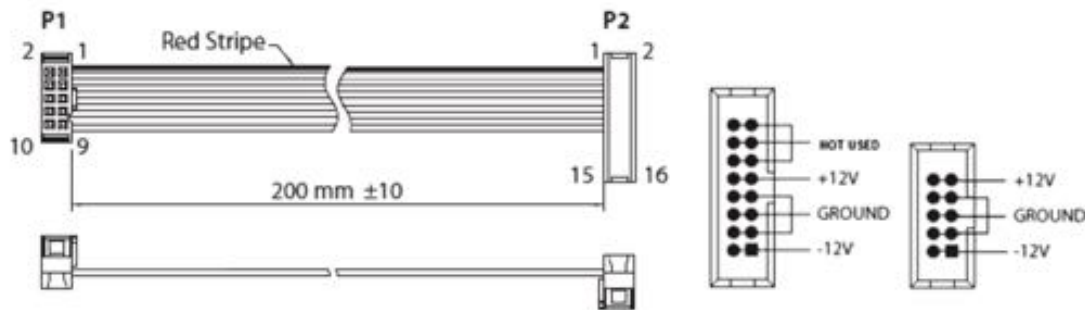


£2500

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Power Connection



Connect end P1 to the module socket
Connect end P2 to the power supply

The unit comes with the required power cable for connecting to a standard Eurorack power supply system. Follow these steps to connect power to the module. It is easier to make these connections before the module has been mounted into a rack case.

1. Turn the power supply or rack case power off and disconnect the power cable.
2. Insert the 16-pin connector on the power cable into the socket on the power supply or rack case. The connector has a tab that will align with the gap in the socket, so it cannot be inserted incorrectly. If the power supply does not have a keyed socket, be sure to orient pin 1 (-12 V) with the red stripe on the cable.
3. Insert the 10-pin connector into the socket on the back of the module. The connector has a tab that will align with the socket for correct orientation.
4. After both ends of the power cable have been securely attached, you may mount the module in a case and turn on the power supply.

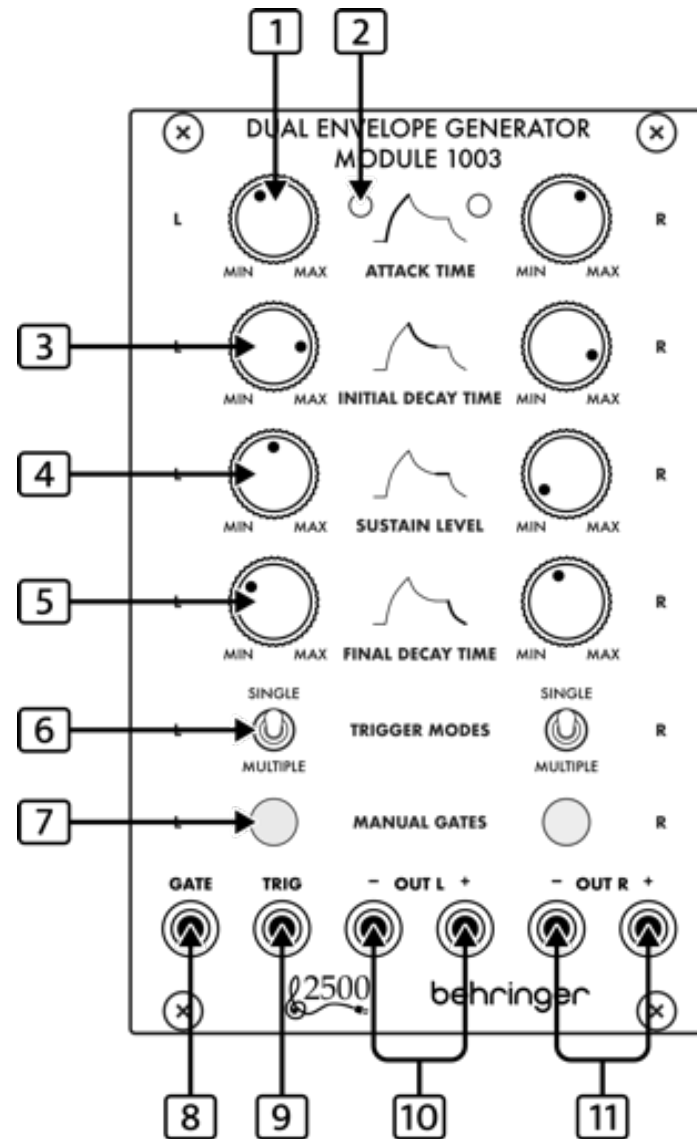
Installation

The necessary screws are included with the module for mounting in a Eurorack case. Connect the power cable before mounting.

Depending on the rack case, there may be a series of fixed holes spaced 2 HP apart along the length of the case, or a track that allows individual threaded plates to slide along the length of the case. The free-moving threaded plates allow precise positioning of the module, but each plate should be positioned in the approximate relation to the mounting holes in your module before attaching the screws.

Hold the module against the Eurorack rails so that each of the mounting holes are aligned with a threaded rail or threaded plate. Attach the screws part way to start, which will allow small adjustments to the positioning while you get them all aligned. After the final position has been established, tighten the screws down.

DUAL ENVELOPE GENERATOR MODULE 1003



Controls

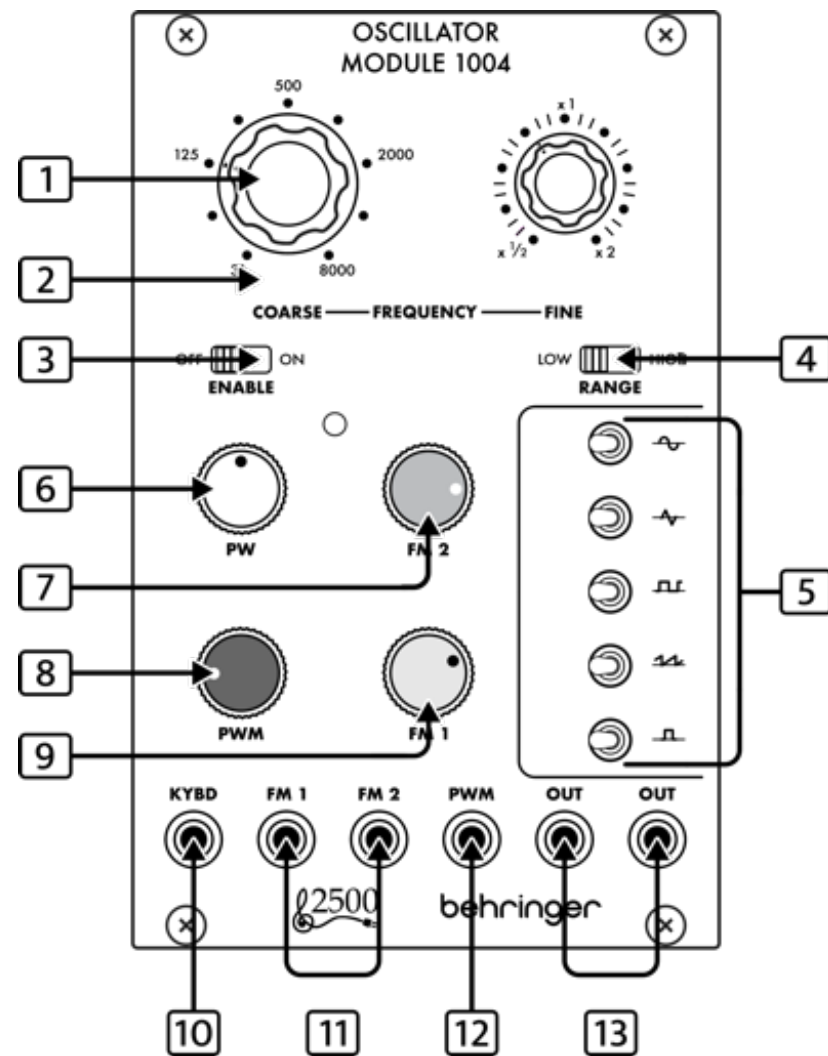
1. **ATTACK TIME** - Adjusts the rate at which the envelope reaches its peak voltage.
2. **SIGNAL LED** - Indicates when a gate signal is present.
3. **INITIAL DECAY TIME** - Adjusts the rate at which the envelope decays from its peak to its designated sustain level.
4. **SUSTAIN LEVEL** - Controls the level at which the envelope remains after its peak but before release, sustaining as long as the input signal is present or the manual gate button is held down.
5. **FINAL DECAY TIME** - Controls how quickly the envelope falls after the input signal stops or the manual gate button is released.
6. **TRIGGER MODE** - Selects between single mode, where only the gate signal controls the envelope, or multiple mode, which uses a positive trigger pulse to re-trigger the envelope while a gate signal is present.

7. **MANUAL GATE** - Press and hold to start the envelope cycle.

Patchpoints

8. **GATE** - Connect a gate signal to control the envelope cycle.
9. **TRIG** - Triggers a new attack of the envelope if a gate signal is also present.
10. **OUT L** - Send the left envelope positive and negative control voltage to other modules via 3.5 mm TS cable.
11. **OUT R** - Send the right envelope positive and negative control voltage to other modules via 3.5 mm TS cable.

OSCILLATOR MODULE 1004



Controls

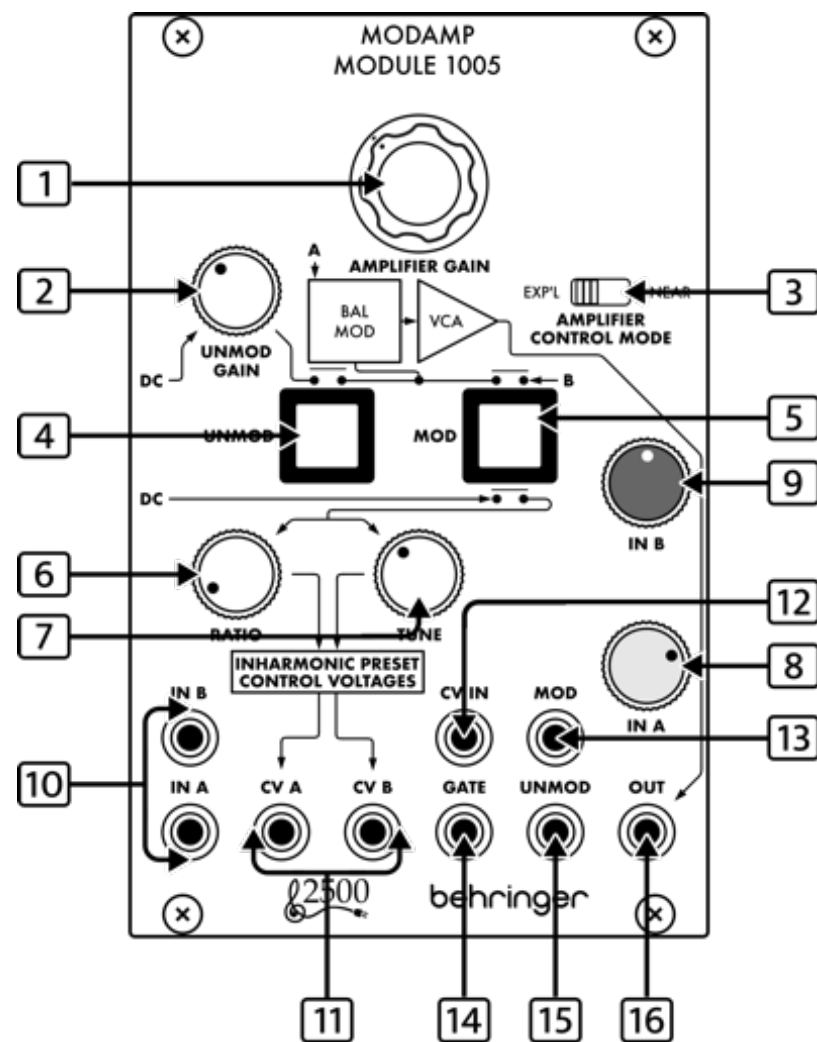
1. **COARSE FREQUENCY** - Sets the frequency from 0.03 to 32 Hz in the low (LFO) range, or from 15,5 Hz to 16 kHz in the high (audio) range, depending on the Fine frequency knob setting.
2. **FINE FREQUENCY** - Adjusts the frequency by a factor of ± 1 octave, potentially halving or doubling the frequency at either extreme.
3. **ENABLE switch** - Turns the oscillator on and off.
4. **RANGE switch** - Determines whether the oscillator operates in the low (subsonic/LFO) band or the high (audio) band.
5. **WAVEFORM switches** - Engage up to 5 waveforms by moving the relevant toggle switch to the left, or engage the inverse waveform by moving the switch to the right. The center position turns the waveform off. Engaging multiple switches simultaneously produces the average of all active waveforms.

6. **PW knob** - Manually control the pulse width for the pulse waveform.
7. **FM 2 knob** - Attenuates the signal connected to the FM 2 input.
8. **PWM knob** - Adjusts the modulation depth of the PWM control input.
9. **FM 1 knob** - Attenuates the signal connected to the FM 1 input.

Patchpoints

10. **KYBD** - Connect a keyboard or other external frequency control via a 3,5 mm TS cable.
11. **FM 1/2** - Connect external voltages to modulate the frequency.
12. **PWM** - Connect an external voltage to modulate the pulse width.
13. **OUT** - Send the oscillator signal other modules via 3,5 mm TS cable.

MODAMP MODULE 1005



Controls

1. **AMPLIFIER GAIN** - This knob controls the VCA's gain and final output volume at the OUT jack.
2. **UNMOD GAIN** - This knob controls the IN A signal gain when the module is in UNMOD mode (as indicated by the UNMOD button). UNMOD mode allows the module to be used as a VCA when modulation is not required.
3. **AMPLIFIER CONTROL MODE (EXP'L/LINEAR)** - This sliding switch determines whether the VCA gain response is exponential (EXP'L) or linear (LINEAR).
4. **UNMOD** - Press this button to place the module into UNMOD mode. In UNMOD mode, the IN A signal passes to the OUT jack without any modulation, and the signal level is controlled by both the UNMOD GAIN and AMPLIFIER GAIN knobs. IN B does not function in UNMOD mode.
5. **MOD** - Press the button to activate MOD mode. In MOD mode, the circuit combines the IN A signal and the IN B signal to produce an output signal that is a modulated combination of the two input signals.

6. **RATIO** - Use this knob in MOD mode to offset the tune control voltage that is sent out through the CV B jack. This function only operates when MOD mode is selected.
7. **TUNE** - Use this knob in MOD mode to control the output level of the tune control voltage sent out through both the CV A and CV B jacks. This function only operates when MOD mode is selected.
8. **IN A** - This knob controls the input level for the signal coming in through the IN A jack.
9. **IN B** - This knob controls the input level for the signal coming in through the IN B jack.

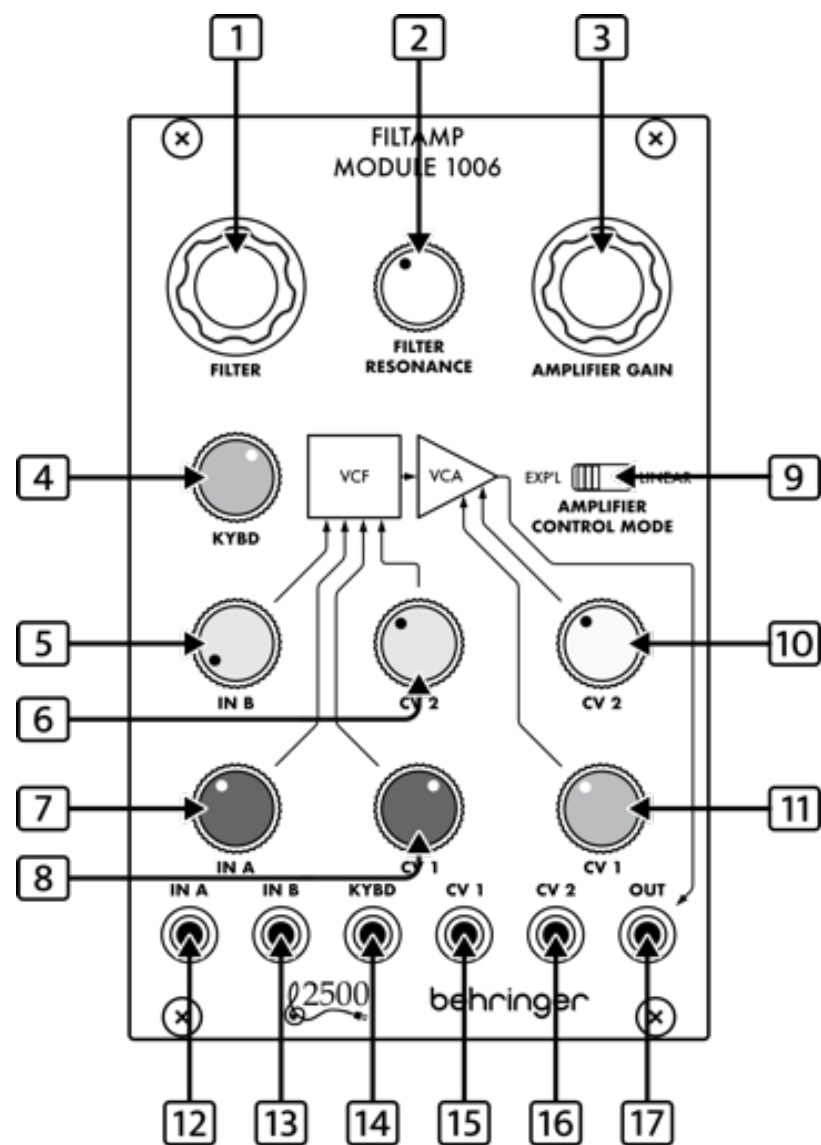
Patchpoints

10. **IN A / IN B** - Use these input jack to route in audio signals for the internal modulation process via cables with 3.5 mm connectors.
11. **CV A / CV B** - Use these jacks to route TUNE (CV A and CV B) and RATIO (CV B offset) control voltages out to the two VCOs that typically

supply the audio signals to the IN A and IN B inputs to be modulated.

12. **CV IN** - Use this jack to route in control voltages signals for remote control of the AMPLIFIER GAIN setting.
13. **MOD** - Use this jack to route in a trigger signal to remotely activate MOD via a cable with 3.5 mm connectors.
14. **GATE** - Use this input jack to route in a gate signal to turn the modulation circuit on and off via a cable with 3.5 mm connectors.
15. **UNMOD** - Use this jack to route in a trigger signal to remotely switch off MOD mode via a cable with 3.5 mm connectors.
16. **OUT** - This jack sends out the final VCA signal via a cable with 3.5 mm connectors.

FILTAMP MODULE 1006



Controls

1. **FILTER** - Adjusts the cutoff frequency of the filter.
2. **FILTER RESONANCE** - Boosts the resonance frequencies selected with the Filter knob, potentially causing VCF oscillation.
3. **AMPLIFIER GAIN** - Controls the level of the VCA.
4. **KEYBOARD knob** - Attenuate the voltage connected to the KYBD input, which controls the cutoff frequency of the filter.
5. **IN B knob** - Adjusts the level of the signal connected to the IN B input.
6. **CV 2 to VCF knob** - Attenuate the voltage that is passed from the CV 2 input to the VCF.
7. **IN A knob** - Adjusts the level of the signal connected to the IN A input.
8. **CV 1 to VCF knob** - Attenuate the voltage that is passed from the CV 1 input to the VCF.

9. **EXPONENTIAL/LINEAR switch** - Select between a linear or more natural exponential VCA response.

10. **CV 2 to VCA knob** - Attenuate the voltage that is passed from the CV 2 input to the VCA.

11. **CV 1 to VCA knob** - Attenuate the voltage that is passed from the CV 1 input to the VCA.

Patchpoints

12. **IN A** - Connect an input signal via 3.5 mm TS cable.

13. **IN B** - Connect an input signal via 3.5 mm TS cable.

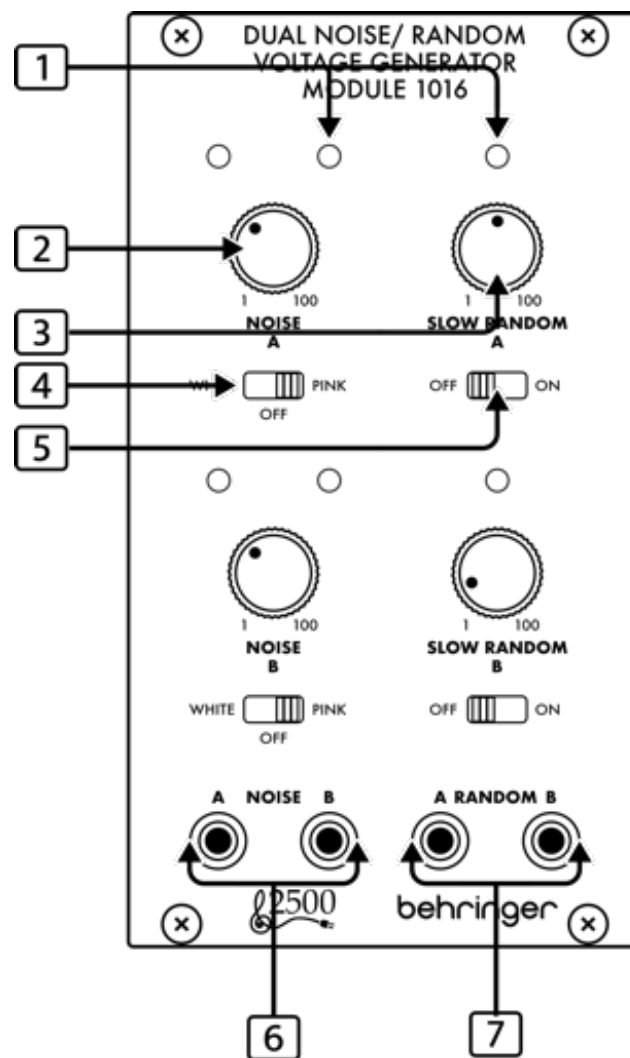
14. **KYBD** - Connect a voltage that can be used to control the VCF frequency.

15. **CV 1** - Connect a voltage that can be used to control the VCF frequency or VCA level.

16. **CV 2** - Connect a voltage that can be used to control the VCF frequency or VCA level.

17. **OUT** - Send the processed signal to other modules via 3.5 mm TS cable.

DUAL NOISE / RANDOM VOLTAGE GENERATOR MODULE 1016



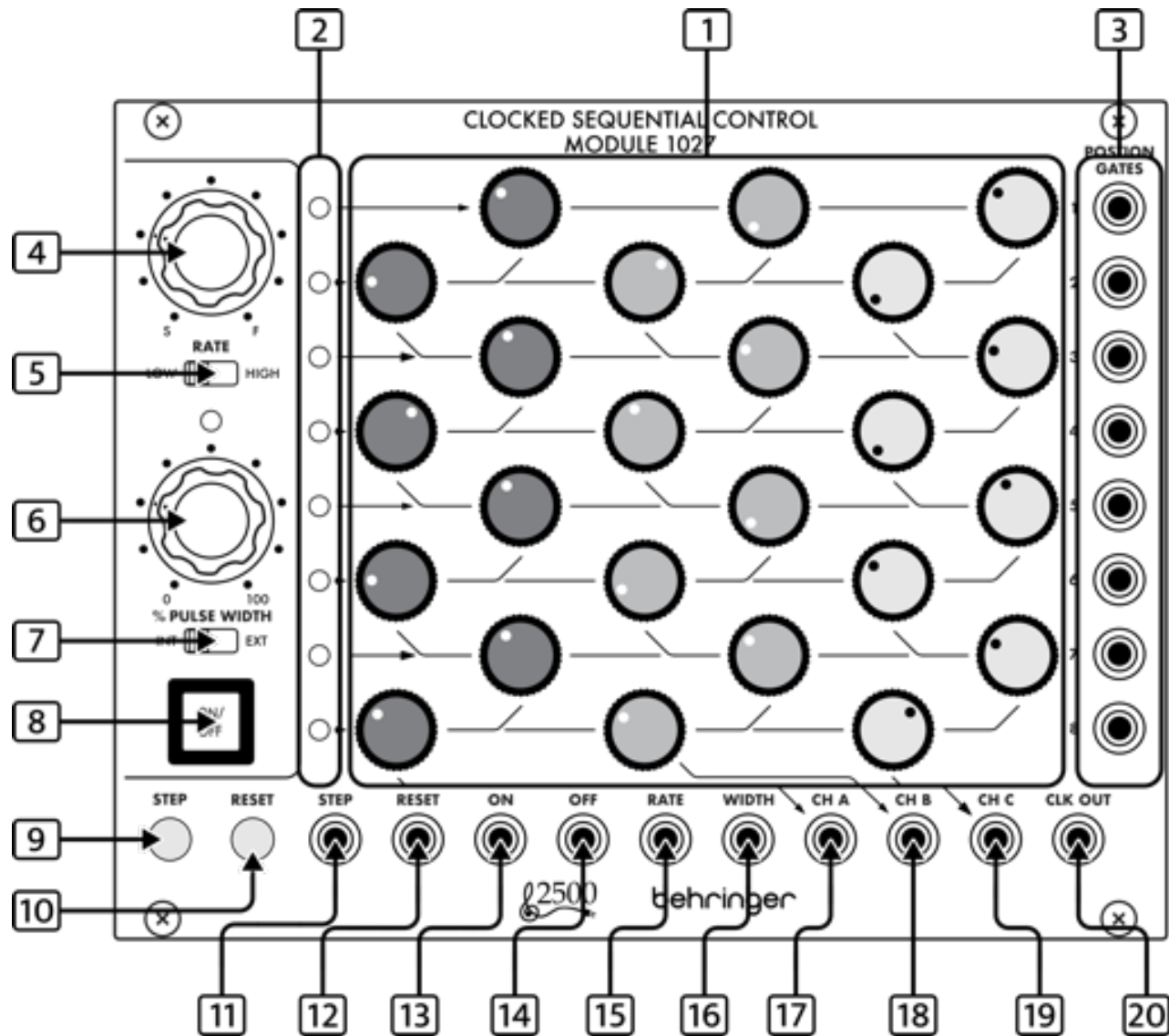
Controls

1. **LEDs** - Indicate whether the associated knob is active.
2. **NOISE knob** - Attenuates the output of the noise generator
3. **SLOW RANDOM knob** - Attenuates the output of the slow random voltage generator.
4. **WHITE/PINK/OFF switch** - Selects between white or pink noise or, disengage the output.
5. **OFF/ON switch** - Engages or disengages the slow random voltage generator.

Patchpoints

6. **NOISE A/B** - Send the noise A and B signals to other modules via 3.5 mm TS cable.
7. **RANDOM A/B** - Send the random voltage signals to other modules via 3.5 mm TS cable.

CLOCKED SEQUENTIAL CONTROL MODULE 1027



Controls

1. **CH A / CH B / CH C SEQUENTIAL COLUMNS** - Use the knobs to set the control voltage output for each step. Each column sends out control voltages via that channel's respective CH A / CH B / CH C output jack.
2. **STEP LEDs** - Each LED lights to indicate its respective sequencer step is active.
3. **POSITION GATES** - Each of these output jacks sends out a gate signal for its respective sequence step via cables with 3.5 mm TS connectors. These 8 gate outputs signals are also available via the 12-pin GATE OUT LINK CONNECTOR located on the modules underside. This 12-pin connector can connect to and trigger other compatible modules, such as the MIX-SEQUENCER MODULE 1050, via a 12-pin ribbon connector.
4. **RATE** - This knob controls the step speed at which the sequencer moves from step to step. The knob operates in two overall frequency ranges determined by the LOW/HIGH switch.
5. **LOW/HIGH** - Use this sliding switch to set whether the RATE knob operates in a lower-frequency (LOW) or higher-frequency (HIGH) range.
6. **% PULSE WIDTH** - Select between settings for the rectangular waveform ranging from 5% to 95% duty cycle. The PULSE WIDTH control operates on the

CLK OUT jack only, making this control very useful for triggering other modules such as envelope generators, and so on.

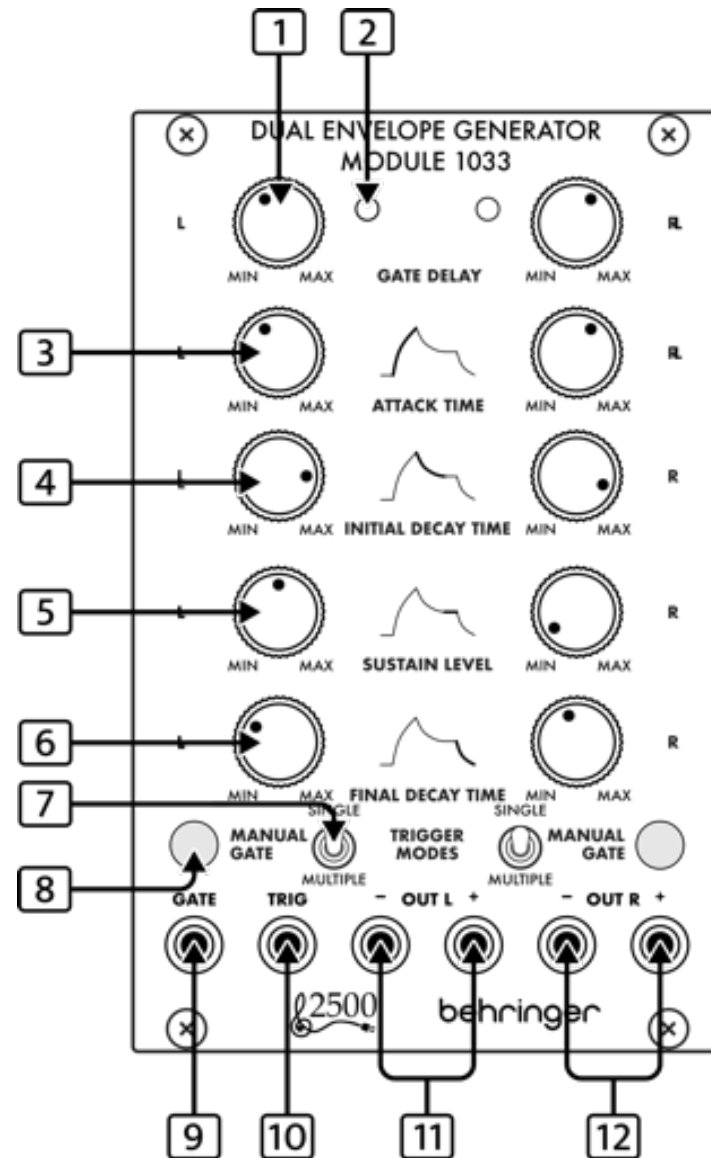
7. **IN/EXT** - Use this switch to select between (INT) or external (EXT) pulse width control voltage. When EXT is selected the % PULSE WIDTH control knob is disabled.
8. **ON/OFF** - This button starts or stops the sequence with a manual button push.
9. **STEP** - Press this button to manually progress to the next sequence step.
10. **RESET** - Press this button to manually restart the sequence at step 1.

Patchpoints

11. **STEP** - Use this jack to route external trigger signals for the STEP button into the module via cables with 3.5 mm TS connectors.
12. **RESET** - Use this jack to route external trigger signals for the RESET button into the module via cables with 3.5 mm TS connectors.
13. **ON** - Use this jack to route external trigger signals to enable the step counter into the module via cables with 3.5 mm TS connectors.

14. **OFF** - Use this jack to route external trigger signals to disable the step counter into the module via cables with 3.5 mm TS connectors.
15. **RATE** - Use this jack to route in external control voltage signals for the sequencer's step speed (usually controlled by the RATE knob) via cables with 3.5 mm TS connectors.
16. **WIDTH** - This jack allows control voltage and modulation signals for the rectangular waveform to be routed in via cables with 3.5 mm TS connectors.
17. **CH A** - This jack sends out control voltage signals for the CH A sequencer column via cables with 3.5 mm connectors.
18. **CH B** - This jack sends out control voltage signals for the CH B sequencer column via cables with 3.5 mm connectors.
19. **CH C** - This jack sends out control voltage signals for the CH C sequencer column via cables with 3.5 mm connectors.
20. **CLK OUT** - Use this jack to export the internally generated clock signal via cables with 3.5 mm TS connectors. The internal clock produces a gate pulse every time the sequencer steps, and the gate pulse's width can be adjusted using

DUAL ENVELOPE GENERATOR MODULE 1033



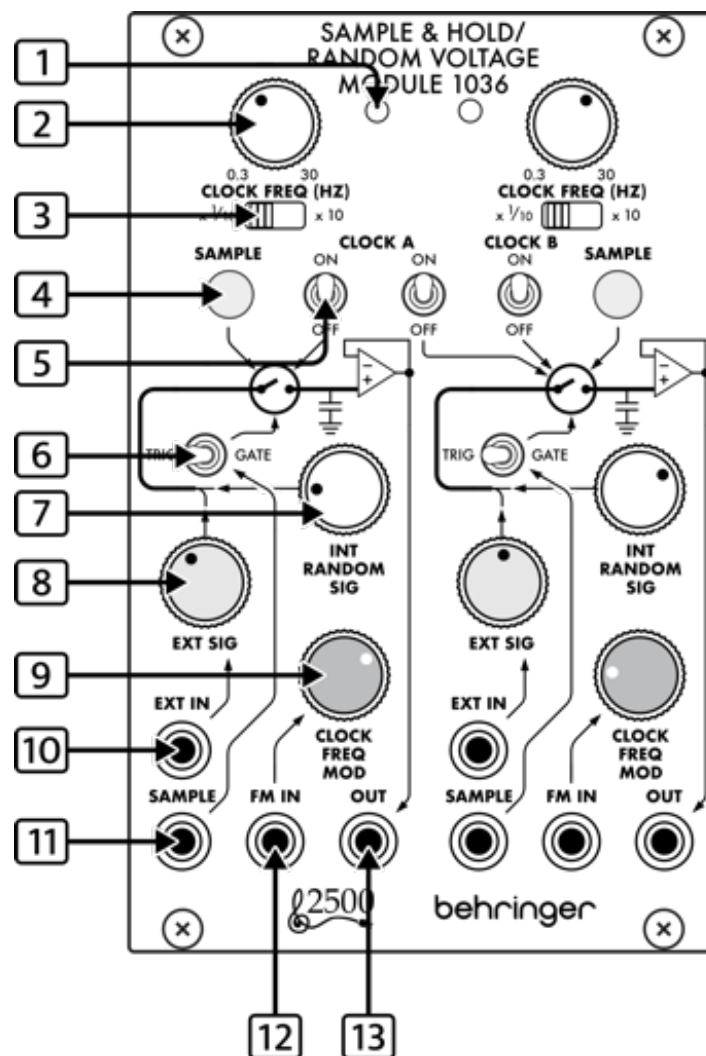
Controls

1. **GATE DELAY** - Delays the envelope cycle up to 3 seconds from the initial gate input.
2. **SIGNAL LED** - Indicates when a gate signal is present.
3. **ATTACK TIME** - Adjusts the rate at which the envelope reaches its peak voltage.
4. **INITIAL DECAY TIME** - Adjusts the rate at which the envelope decays from its peak to its designated sustain level.
5. **SUSTAIN LEVEL** - Controls the level at which the envelope remains after its peak but before release, sustaining as long as the input signal is present or the manual gate button is held down.
6. **FINAL DECAY TIME** - Controls how quickly the envelope falls after the input signal stops or the manual gate button is released.
7. **TRIGGER MODE** - Selects between single mode, where only the gate signal controls the envelope, or multiple mode, which uses a positive trigger pulse to re-trigger the envelope while a gate signal is present.
8. **MANUAL GATE** - Press and hold to start the envelope cycle.

Patchpoints

9. **GATE** - Connect a gate signal to control the envelope cycle.
10. **TRIG** - Triggers a new attack of the envelope if a gate signal is also present.
11. **OUT L** - Send the left envelope positive and negative control voltage to other modules via 3.5 mm TS cable.
12. **OUT R** - Send the right envelope positive and negative control voltage to other modules via 3.5 mm TS cable.

SAMPLE & HOLD / RANDOM VOLTAGE MODULE 1036



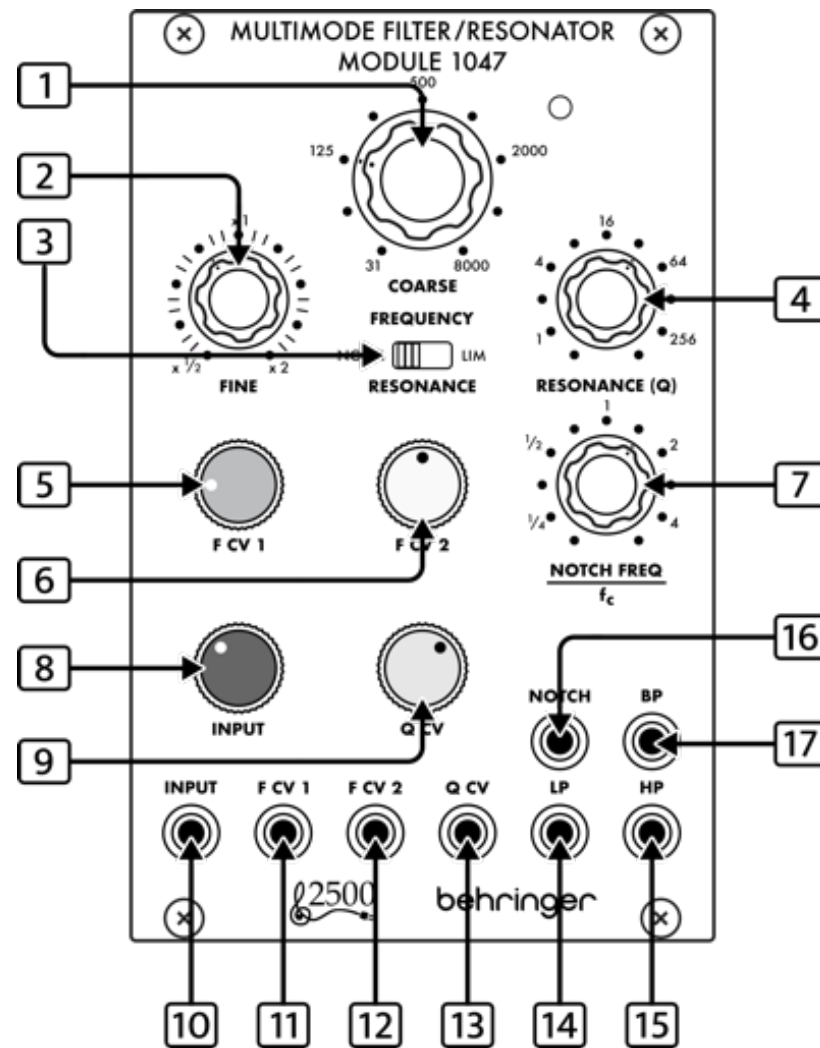
Controls

1. **LED** - Indicates that clock A or B is engaged.
2. **CLOCK FREQ** - Sets the clock frequency value.
3. **CLOCK RANGE** - Determines whether the value selected with the associated Clock Frequency knob is interpreted by a factor of 1/10th or x10. For example, a setting of 50 on the knob will either result in 5 Hz or 500 Hz.
4. **SAMPLE** - Manually generate a sample command pulse.
5. **CLOCK ON/OFF** - Engage clock A and B pulse generators independently. Clock A can be assigned to both sample and hold sections if desired.
6. **TRIG/GATE** - Determines whether a short trigger or longer gate will open the sampler. In the trigger position, the positive edge of the pulse will open the sampler for about 10 ms, whereas the gate position will hold the output of the sampler open for the entire duration of the positive pulse.
7. **INT RANDOM SIG** - Adjusts the level of the internal random signal generator, which can be used instead of or in addition to an external signal.
8. **EXT SIG** - Attenuates the signal connected to the EXT IN jack.
9. **CLOCK FREQ MOD** - Attenuates the signal connected to the FM IN jack.

Patchpoints

10. **EXT IN** - Connect an external voltage which will be sampled and manipulated.
11. **SAMPLE** - Connect an external oscillator or keyboard trigger to generate a sample and command pulse.
12. **FM IN** - Connect a voltage to control the clock frequency modulation of the pulse generator.
13. **OUT** - Send the sample to other modules via 3.5 mm TS cable.

MULTIMODE FILTER / RESONATOR MODULE 1047



Controls

1. **COARSE** - Use this knob to dial in the general frequency area you want for the high-pass threshold, low-pass threshold, band-pass center frequency and notch filter center frequency.
2. **FINE** - Use this knob to refine and focus the frequency set by the COARSE FREQUENCY knob.
3. **RESONANCE (NORM/LIM)** - This sliding switch lets you choose between normal resonance mode (NORM) and limiting mode (LIM), which limits the height of a filter's resonant peak. The LIM setting prevents circuit overload when focusing a filter on a strong harmonic or fundamental frequency, especially at high Q settings on the RESONANCE (Q) knob. In other situations the LIM setting can result in a very low output signal, and so the NORM setting is usually preferred.
4. **RESONANCE (Q)** - This knob controls the width/smoothness and narrowness/sharpness of the filter curves. At low Q settings, the filter curves are wider and smoother, with a gentler effect on the sound (except for the notch filter, which functions most effectively at low Q settings). As you increase the Q setting, the filter curves gradually become

narrower and sharper, which can help you to focus in on narrow frequency bands. At higher Q settings, the various filters can produce resonant peaks in the filter curves that boost some frequencies and may require moving the RESONANCE (NORM/LIM) switch to the LIM setting to prevent overloading the circuit (or the INPUT attenuator knob can be turned down).

5. **F CV 1** - This knob adjusts the strength of the control voltage signal coming in through the F CV 1 jack.
6. **F CV 2** - This knob adjusts the strength of the control voltage signal coming in through the F CV 2 jack.
7. **NOTCH FREQUENCY/fc** - Use this knob to offset the notch filter's center frequency ("fc") set by the COARSE and FINE frequency controls. For standard notch filter behavior, the NOTCH FREQ/fc control should be set to "1" on the scale. This standard setting can then be tweaked by moving the NOTCH FREQ/fc knob very slightly around "1". Also if higher Q values are added via the RESONANCE knob while the notch filter is offset from fc, the higher Q values result in a resonant peak at fc, the higher Q values result in a resonant peak at fc,

which the notch at the point set by the NOTCH FREQ/fc knob.

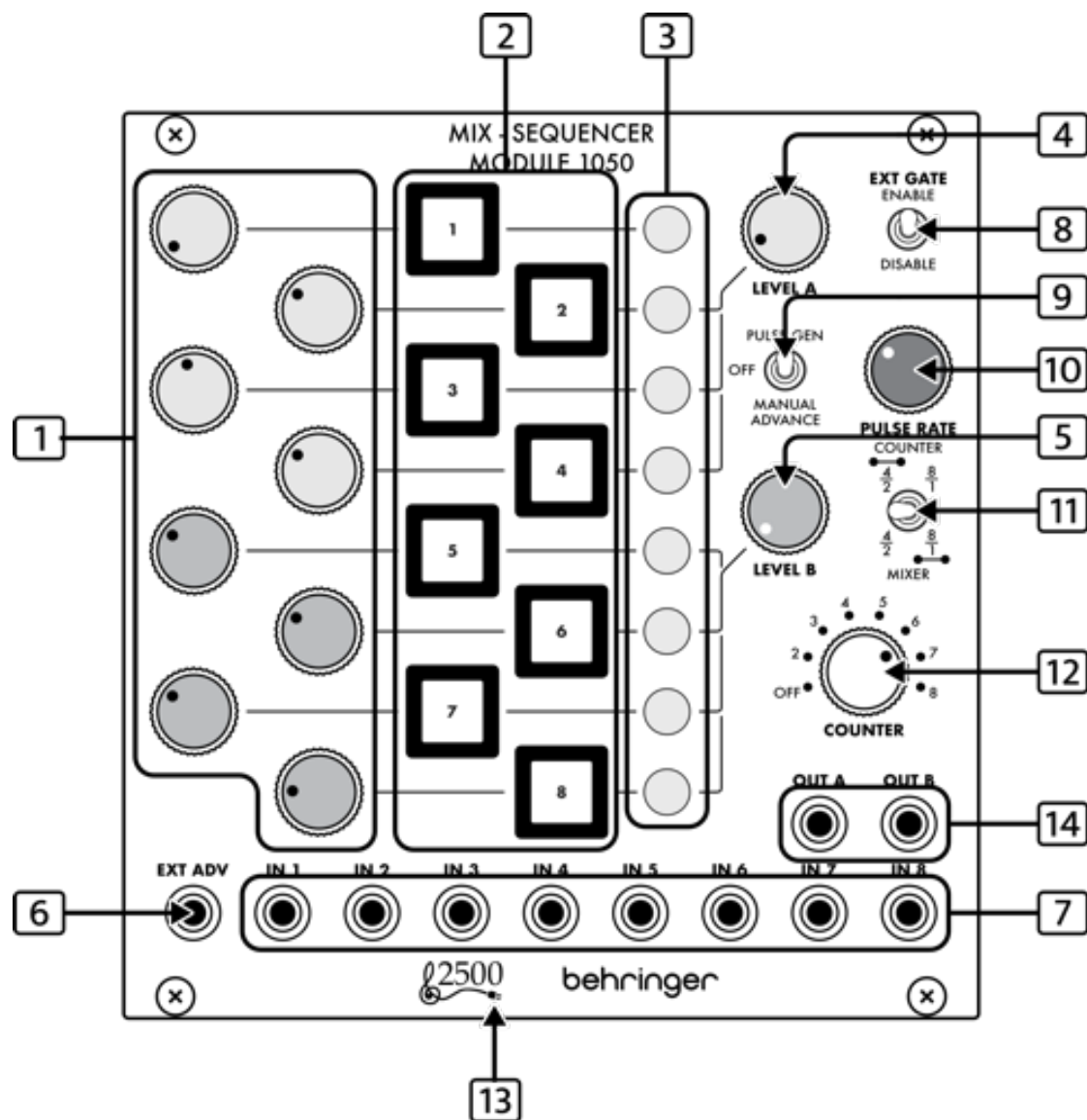
Knob Setting	Effect
Full CCW	Notch filter output becomes a copy of the high-pass output
CCW to 1/4	Notch frequency shifts significantly below fc
CW to 4	Notch frequency shifts significantly above fc
Full CW	Notch filter output becomes a copy of the low-pass filter output

8. **INPUT** - this knob adjusts the strength of the audio signal coming through the INPUT jack.
9. **Q CV** - This knob adjusts the strength of the Q control voltage signal coming in through the Q CV jack.

Patchpoints

- 10. INPUT** - Use this jack to route audio signals into the module via cables with 3.5 mm connectors. You can also route in a keyboard gate signal to “ring” the filter and produce a unique percussive sound when you press a key.
- 11. F CV 1** - Use this jack to route external control voltage or modulation signals for the filter frequency setting into the module via cables with 3.5 mm connectors.
- 12. F CV 2** - Use this jack to route external control voltage or modulation signals for the filter frequency setting into the module via cables with 3.5 mm connectors.
- 13. Q CV** - Use this jack to route external control voltage signals for the RESONANCE (Q) setting into the module via cables with 3.5 mm connectors.
- 14. LP** - This jack sends out the signal from the low-pass filter via cables with 3.5 mm connectors.
- 15. HP** - This jack sends out the signal from the high-pass filter via cables with 3.5 mm connectors.
- 16. NOTCH** - This jack sends out the signal from the low-pass filter via cables with 3.5 mm connectors.
- 17. BP** - This jack sends out the signal from the notch filter via cables with 3.5 mm connectors.

MIX-SEQUENCER MODULE 1050



Controls

1. **CHANNEL LEVEL knobs** - Each knob controls the mix level for its respective mixer channel, and the knobs are color-coded into two groups four channels each for further sub-mixing with the LEVEL A and LEVEL B knobs.
2. **CHANNEL ON/OFF buttons** - These buttons select and indicate which mixer channels are on or off. Press a button to manually select and activate a channel. When a channel is active, the button will light and the gate for that channel will be open. During a sequence, when an individual channel is active during its step, the button for that channel will light for the duration of the sequence step. During a sequence you can press an on/off button to manually turn on a channel, and that channel will stay on during the sequence until you press the channel's on/off button again.
3. **EXCLUSIVE-ON buttons** - To use this function, the COUNTER rotary switch should be set to OFF. Press one of these red buttons to solo that button's respective channel and preview the signal. When a channel is soloed, the CHANNEL ON/OFF button for that channel will light, and the other channels will be muted. You may also press the CHANNEL ON/OFF buttons on other channels to hear those channels along with the soloed channel. When the mixer is in 4-channel mixer mode the EXCLUSIVE-ON buttons 1-4 operate independently from channels 5-8.
4. **LEVEL A** - When in 4-channel mixer mode, use this knob to adjust the overall mix level for the channel 1-4 group. When 8-channel mixer mode is enabled, this knob is master to all 8 input channels.
5. **LEVEL B** - When in 4-channel mixer mode, use this knob to adjust the overall mix level for the channel 5-8 group. When 8-channel mixer mode is enabled, this knob is master to all 8 input channels.
6. **EXT ADV** - Use this input to route in gate or clock signals to externally clock the rate at which the sequence advances.
7. **IN 1-8** - Use these jacks to route audio signals into mixer channels 1-8 via cables with 3.5 mm connectors.
8. **EXT GATE (ENABLE/DISABLE)** - This two-way switch determines whether the sequencer is controlled via gate signals from the EXT GATE LINK 12-way connector located in the module underside. This 12-way connector allows compatible modules such as the CLOCKED SEQUENTIAL MODULE 1027 to act as a master to the 1050 module. When DISABLE is selected the external gate signals will have no effect. When ENABLE is selected the 1050 module will follow the connected MASTER module. When using the EXT GATE input, the COUNTER switch would normally be set in the OFF position, however the module can be clocked from both the internal COUNTER.
9. **PULSE GEN/OFF/MANUAL ADVANCE** - Use this 3-way switch to determine whether the module advances through the channels in a sequence
10. **PULSE RATE** - Use this knob to control the speed by which the internal pulse generator clocks and advances through each sequencer step.
11. **COUNTER/MIXER** - This 3-way switch determines the sequence switching logic (COUNTER: two parallel rows of four versus a single sequence row of eight) and the audio routing logic (MIXER: two groups of four channels mixed to separate OUT A and OUT B outputs versus a single group of eight channels routed to both outputs). In the left position, the sequencer will count through the channels in two parallel rows of four, while the mixer outputs each row of four to separate outputs; in the far right position the sequencer will count through all of the channels in a single sequence row of eight, while the mixer routes all right channel as a single group to both outputs; the middle position is a mixed setting where the sequencer runs through the channels in two groups of four, but all eight audio channels are mixed and sent out as a single group.
12. **COUNTER** - Use this rotary switch to control the number of steps in the sequence before the cycle repeats. When the COUNTER side of the COUNTER/MIXER switch is set for two sequences of four steps each, the COUNTER switch will only function up to the 4 setting.
13. **EXT GATE LINK CONNECTOR** - To connect the 1050 module to a 1027 module, insert the included 12-way cable into the EXT GATE LINK connector found on the 1050 module's underside, and then insert the other end of the cable into the 1027 module's EXT GATE LINK connector. The 1027 will now be the master and the 1050 will be the slave when the EXT GATE switch is set to ENABLE.
14. **OUT A/B** - Use these outputs to route the final mix out of the module for further processing elsewhere. When the COUNTER/MIXER switch is in the left position, the mixer will send the channel 1-4 group out through OUT A, while the channel 5-8 group goes out through OUT B. When the COUNTER/MIXER switch is in the center or right position, all channels are mixed together and sent out as duplicate mono signals through both OUT A and OUT B.