

# EROGENOUS TONES

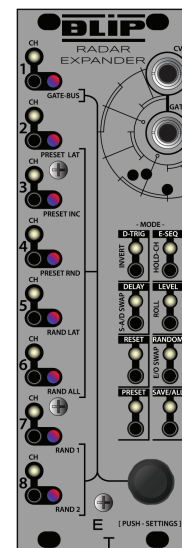
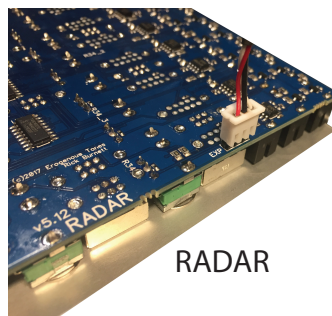
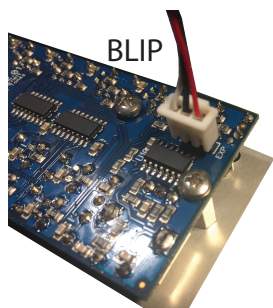
## BLIP

### RADAR EXPANDER MODULE

To get you started, here are the instructions on hooking BLIP up to RADAR with the included expander cable and a quick rundown of the functionality. For the latest information, visit our website at: <http://erogenous-tones.com>

BLIP gets required power like any other eurorack module. RED indicates -12V and should line up with the -12V on your busboard (normally indicated by the red stripe of the power wire). BLIP does not use a shrouded header for space saving purposes so the center row of pins has been removed to prevent damage to your power supply if BLIP is installed backwards.

In addition to power, BLIP uses a data cable to serially connect to RADAR. The length of the cable was designed for flexibility so you could place BLIP where it made the most sense. Both ports on RADAR and BLIP are labeled with EXP. Line up RED on the cable with the pin closest to EXP on both modules and install the cable.



Once you power on BLIP, you will see it go through a light up sequence that gives RADAR time to power up. Once the lights are done, BLIP sends whatever is stored in PRESET 1 location. Note that if you power up BLIP with CH1 & CH2 buttons pressed down for a few seconds, it will reset to factory defaults for all the presets (a series of red lights goes down and back up).

The buttons on the left side labeled 1 through 8 are known as the channel buttons. The other 8 buttons are the mode buttons, and pressing in the rotary encoder is the system settings button.

Many mode buttons have multiple functions. When the LED is solid on, that means the black outlined mode is selected. If the button is blinking, it's the mode labeled to the side of the LED.

**D-TRIG** setting mode is active when the LED below it is solid white. Use the button below to select this mode. If the LED is blinking, press it again as the other mode selection is active. D-TRIG is used to

disable the trigger inputs on RADAR. Press any of the CH buttons and the LED will change to red indicating that corresponding trigger input on RADAR will be disabled. This is useful when you are using chaining and have normalized triggers occurring on RADAR and want them to be ignored.

**INVERT** mode is selected by pressing the button twice under D-TRIG. The LED will blink to indicate you are making changes to channel invert settings. Pressing CH buttons will turn on invert which sets the LED to BLUE. This means the envelope on RADAR for those channels will be inverted above 0V (no negative values).

**E-SEQ** works a little different, there is no second mode on this button. Instead, you hold this button down and select a CH you want to work with. That channel will then be illuminated with white. Now ANY OTHER channel can be selected for 3 modes. OFF means do nothing. BLUE means trigger this channel on end of rise (EOR) and RED means trigger this channel on end of fall (EOF). This is the chaining capability. So if CH1 is selected (white) and CH3 is colored RED, then when CH1 reaches the EOF it will trigger the start of CH3. Likewise if you then held the E-SEQ button and selected CH3, you could have CH3 then trigger other envelopes to start. This is how chaining works.

**DELAY** allows you to insert delay between when a trigger is received and when the envelope starts. You select a CH with the CH buttons which will be shown in white. Rotating the encoder will step the values in large increments. Holding the currently active CH button while rotating the encode will increase in small increments. The red/blue LEDs will show the relative length of delay. NOTE THAT LONG DELAYS AND RETRIGGERING ENVELOPES CAN CAUSE SCENARIOS WHERE NO ENVELOPE EVER STARTS. This is important to remember with chaining as well.

**S A/D SWAP** indicated by a blinking LED below DELAY (press twice) is for swapping the shape, attack and decay/release knobs. This essentially allows you to CV control A and D/R. Note that RADAR has a slew limiter on the shape input, this will limit the CV rate that you can use with the shape CV. Use the CH buttons to change the settings. BLUE swaps SHAPE and A. RED swaps SHAPE and D/R. PURPLE swaps SHAPE with both A and D/R! OFF means normal mode.

**LEVEL** controls the output level of RADAR from 10V down to 0V. It defaults at the max level. Like DELAY, holding a channel while using the encoder will drop the voltage in smaller increments. The beauty of this control is you can free up an external attenuator if you wanted. This is also nice for the OR output modes on channels 4 and 8.

**ROLL** is a fun effect that allows you to shift the envelope upwards and wrap it back around and up through zero. Mathematically think of it as adding a DC offset, but then modulus so larger values remain in the active area.

**RESET** is used to reset single lanes or all lanes back to a known state (basically what factory preset would be). When you press RESET, all the channels and SAVE/ALL will blink. In addition each channel will be RED. Pressing a CH will reset JUST that channel and the LED will change to PURPLE to indicate it has been reset. Pressing the SAVE/ALL will reset ALL channels (and they all turn PURPLE).

**RANDOM** works similar in function to RESET mode except the LED are BLUE at first. Selecting a channel to be randomized will turn it PURPLE. In addition, using the SAVE/ALL button will randomize all channels and turn them all PURPLE. Note that the type of randomization is controlled in system settings and is covered later in that section. Also, when you are using the CV/GATE with RANDOM, which channels are randomized per GATE trigger will be shown when this mode is active. So you can watch which channels are being randomized EACH time a GATE comes in.

**E/O SWAP** will swap the E/O setting of ANY lane. Normally these are controlled in pairs of 2. When the LED for a corresponding channel is BLUE it will work opposite of what the panel graphics on RADAR say.

**PRESET** is used to recall presets from memory and send them to RADAR. When this mode is active, white shows the last sent preset. Given you can make changes on the fly, pressing a lit channel will resend that preset. In addition, the purple LED indicates the CV value coming in. A 5V range is distributed across the 8 values that are detected on CV. CV/GATE settings will be described in the system settings.

*NOTE* that presets take about 45ms to transfer to RADAR which also causes RADAR to reset all envelopes and LEDs. Consider this as you are using CV to change RADAR on the fly with presets as it will not be instantaneous. When changing settings by hand, each setting is sent alone so it is MUCH faster.

**SAVE** is used to save the current settings into any of the 8 preset locations. When SAVE is selected, the LED next to each channel will blink between BLUE and RED. Once you select a channel to save, it will turn PURPLE. Remember that when BLIP starts, it will ALWAYS send PRESET 1 to RADAR.

**SYSTEM SETTINGS AND CV/GATE CONTROL** are easier to talk about together. To enter system settings mode, press in the encoder. Text below the colored LED on each CH indicate the system settings. To exit system settings (or any mode) just press any other mode button. SYSTEM settings are saved to non-volatile memory when you exit to another mode.

**GATE-BUS** is the first setting. When this LED is BLUE it will listen to patch changes on the Gate Bus on your power back plane. This is the same protocol as used by a few other module makers to switch presets together.

**RAND 1 / RAND 2** are set using the last 2 buttons, which is active is indicated by a BLUE led. This controls the amount of randomization that happens in each channel that is randomized.

**RAND 1** = RESTRICTED RANDOM (Unique Differences)

Delay is randomized from current location in a very fine range around it.

NO wave sequencing randomized

NO roll randomized

**RAND 2** = REGULAR RANDOM (Unique Differences)

Delay is randomized to first 25% of delay values

Up to 4 wave sequences are assigned from channel being randomized

Roll is fully randomized

COMMON randomization for both modes:

Invert randomized

Level is fully randomized (all the way to zero)

E/O Swap is randomized

NOT affected by random in either mode:

Disable trigger

S A/D Swap

The middle section of the system settings define what the CV/GATE inputs affect, these LED are indicated in RED and there are 5 different CV/GATE modes you can select from. Let's look at each of these.

**PRESET LAT** is the most straightforward. Depending on the voltage on CV, whatever channel is selected, when a gate is received, BLIP will change to that preset and send that preset to RADAR (remember it takes 45ms for this). The voltage for each of the 8 channels is distributed over 5V.

**PRESET INC** will step to other presets relative to the current preset and the CV voltage when a GATE is applied.

|             |   |   |   |   |    |    |    |   |
|-------------|---|---|---|---|----|----|----|---|
| CV POSITION | 1 | 2 | 3 | 4 | 5  | 6  | 7  | 8 |
| STEP        | 1 | 2 | 3 | 4 | -1 | -2 | -3 | 0 |

**PRESET RND** will randomly select another preset relative to a distance away based on the CV value when a GATE is received. Basically, the larger the CV is towards 5V, the smaller range it will select a random preset around the current preset. So if you are on preset 5 and you have CV set to select CH6, it will randomly load either preset 4 or 6 on a GATE. Here is the random offset ranges

|             |   |   |   |   |   |   |   |   |
|-------------|---|---|---|---|---|---|---|---|
| CV POSITION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| RANGE       | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |

**RAND LAT** works just like PRESET LAT except instead of loading a preset corresponding to the CH number it instead randomizes that channel! Remember that the RAND mode page will show who was randomized

**RAND ALL** will randomize either all the lanes on GATE input or some combination of them depending on the current CV value when the GATE is asserted.

|             |     |     |      |     |     |      |      |      |
|-------------|-----|-----|------|-----|-----|------|------|------|
| CV POSITION | 1   | 2   | 3    | 4   | 5   | 6    | 7    | 8    |
| RAND SET    | All | Odd | Even | 1-4 | 5-8 | 1278 | 3456 | None |