

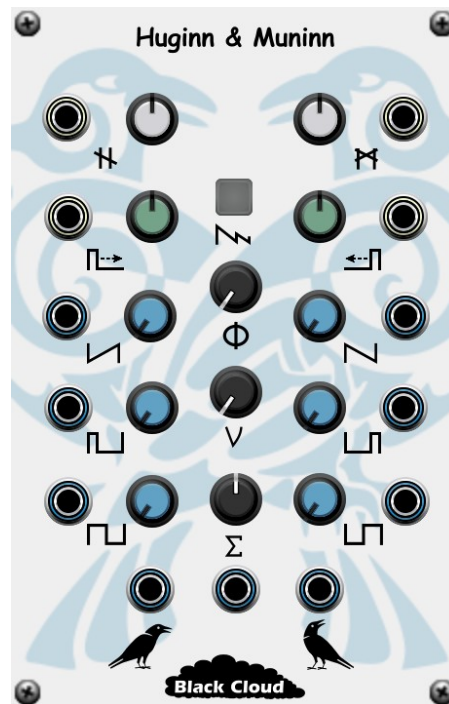


# *Huginn & Muninn*

*Dual Voice Oscillator*

## Introduction

*Huginn & Muninn* is a two oscillator, multi-waveform module that gives Odin's Ravens, Huginn ("Memory") and Muninn ("Thought") voices you can use in your patches.

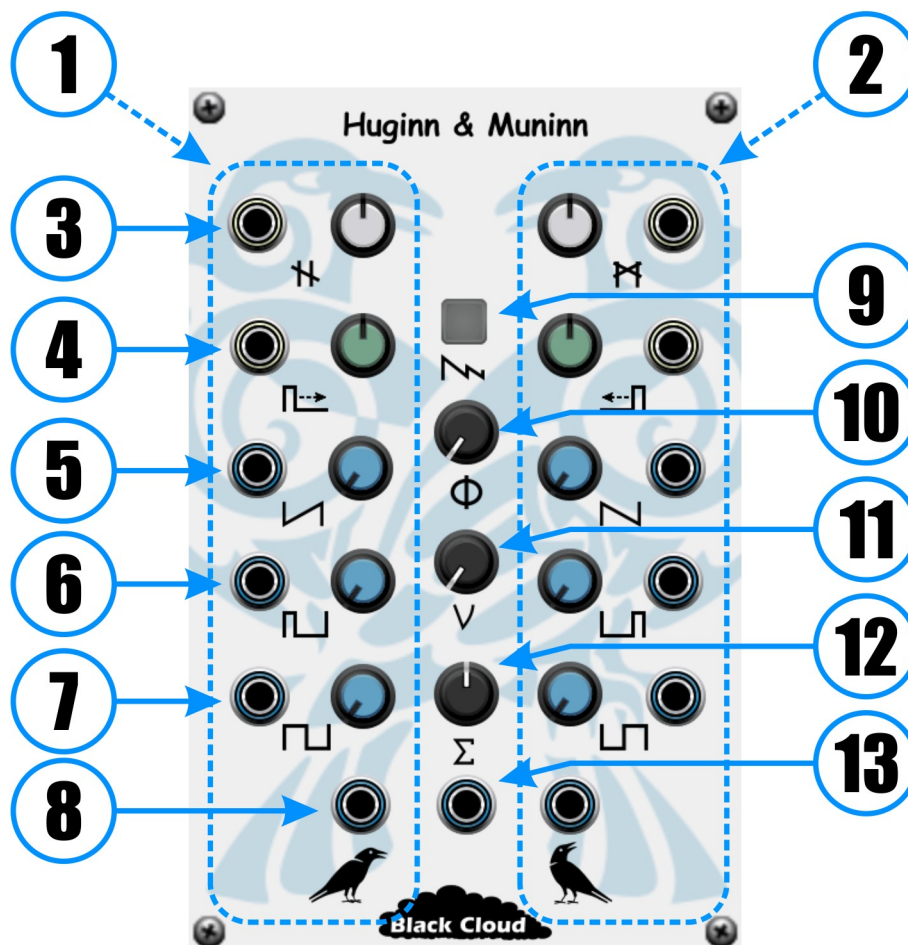


Both Huginn and Muninn produce two primary waveforms (Sawtooth and PWM Square) as well as a Square Wave sub-octave waveform (pitched one octave lower than the primary waveforms). Independent output mixers allow the outputs of the two voices to be tailored as required to meet your needs.

Output from the two voices are also combined through a cross-fade *Blend* control. An internal LFO allows you to apply a Chorus effect to the resulting *Blended Output*.

Pulse width and mix levels are manually and CV controllable.

# Knobs, Buttons and Sliders



<b>1 Huginn</b> Inputs, controls and output for the Huginn voice.	<b>2 Muninn</b> Inputs, controls and output for the Muninn voice. Muninn's controls etc. are identical to Huginn's (3 thru 8).
<b>3 Pitch Controls</b> Manual and V/Oct pitch control.	<b>4 Pulse Width Controls</b> Manual and CV control of voice pulse width.
<b>5 Voice Output Mixer: Saw Level</b> Manual and CV control over the saw wave output level.	<b>6 Voice Output Mixer: Pulse Level</b> Manual and CV control over the pulse wave output level.
<b>7 Voice Output Mixer: Sub Level</b> Manual and CV control over the square wave sub-oscillator output level.	<b>8 Single Voice Output</b> Mixed output for a single voice.
<b>9 Hard Sync</b> Syncs Muninn to Huginn's frequency.	<b>10 Chorus Depth</b> Sets the Chorus Depth between Huginn and Muninn in the <i>Blended Output</i> (13).

<b>11</b>	<b>Chorus Rate</b> Sets the Chorus Rate between Huginn and Muninn in the <i>Blended Output (13)</i>	<b>12</b>	<b>Blend Amount</b> Crossfades the <i>Blended Output (13)</i> between the Huginn and Muninn voices.
<b>13</b>	<b>Blended Output</b> Cross-faded and chorused output from both the Huginn and Muninn voices.		