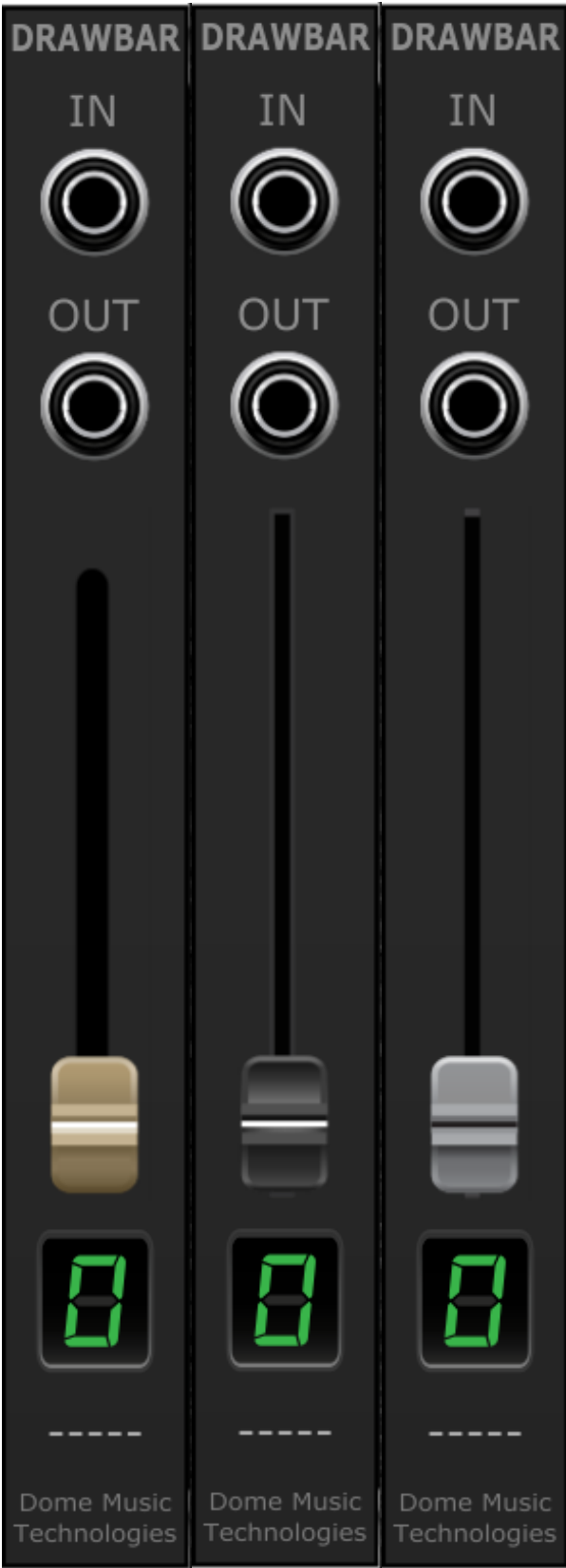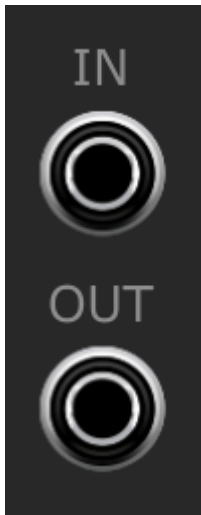# Drawbar Mixer from Dome Music Technologies

Introduction

The Drawbar Mixer modules from Dome Music Technologies are simple stepped attenuators with black, white and brown sliders. They can be arranged in any configuration you like to simulate classic organ drawbar settings. For example, here is the 'standard' 9-drawbar Hammond layout, with a full-bodied 'gospel' registration:

In this instance, the drawbars have been visually grouped into the 'Sub' (left 2), 'Foundation' (middle 4), and 'Brilliance' (right 3) sets, but there's no reason why you can't have them in 3-3-3 sets, or nine-in-a-row, for that matter. Traditionally, Hammond organ drawbars are colour-coded brown for the 'Sub' ranks, white for the 'Octave' ranks and black for the 'Harmonic' ranks.

Audio In and Out Sockets

Each module represents one independent drawbar 'channel'. To operate in a traditional 'organ' configuration, each drawbar input should be fed with a mixed polyphonic 'rank' of tones. The Cherry Audio Poly Octave Oscillator is perfect as a source, as it offers four simultaneous mixed octaves of sine waves, with built-in volume envelopes. You can generate all nine classic 'footages' using just four Poly Octave Oscillators:

The output of each drawbar channel can be used independently, but it is often convenient to use the Voltage Modular 'Cable Buses' to combine the outputs into one common signal, similar to how a standard mixing desk works. In the image above, Cable Bus 1 (purple) is fed to the input of a Simple Amplifier, acting as a master volume control.
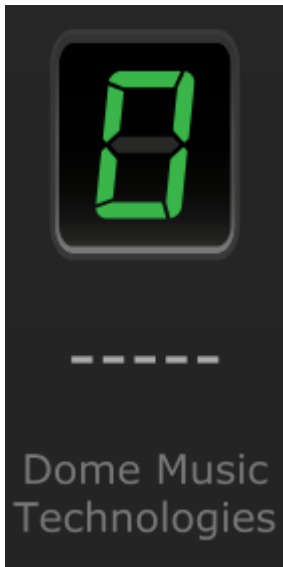
Drawbar Slider and LED Numeric Display

The Drawbar Mixer has 9 fixed amplitude settings from 0 at the top ("Off" / "Silent") to 8 at the bottom ("Full Volume"). Each step down from 8 cuts the volume by -3 dB:

Position Number	Attenuation (dB)	Gain
0	-inf	0.000
1	-21 dB	0.089
2	-18 dB	0.126
3	-15 dB	0.178
4	-12 dB	0.251
5	-9 dB	0.355
6	-6 dB	0.501
7	-3 dB	0.708
8	0 dB	1.000

Editable Text Label

Below the seven-segment LED indicator, there is an editable text field which allows you to label the drawbar. This can be used to identify its purpose - for example " 8' " to indicate the "8 foot" rank. The label initially displays five dashes "-----", but can be edited by double-clicking the mouse over that part of the panel: