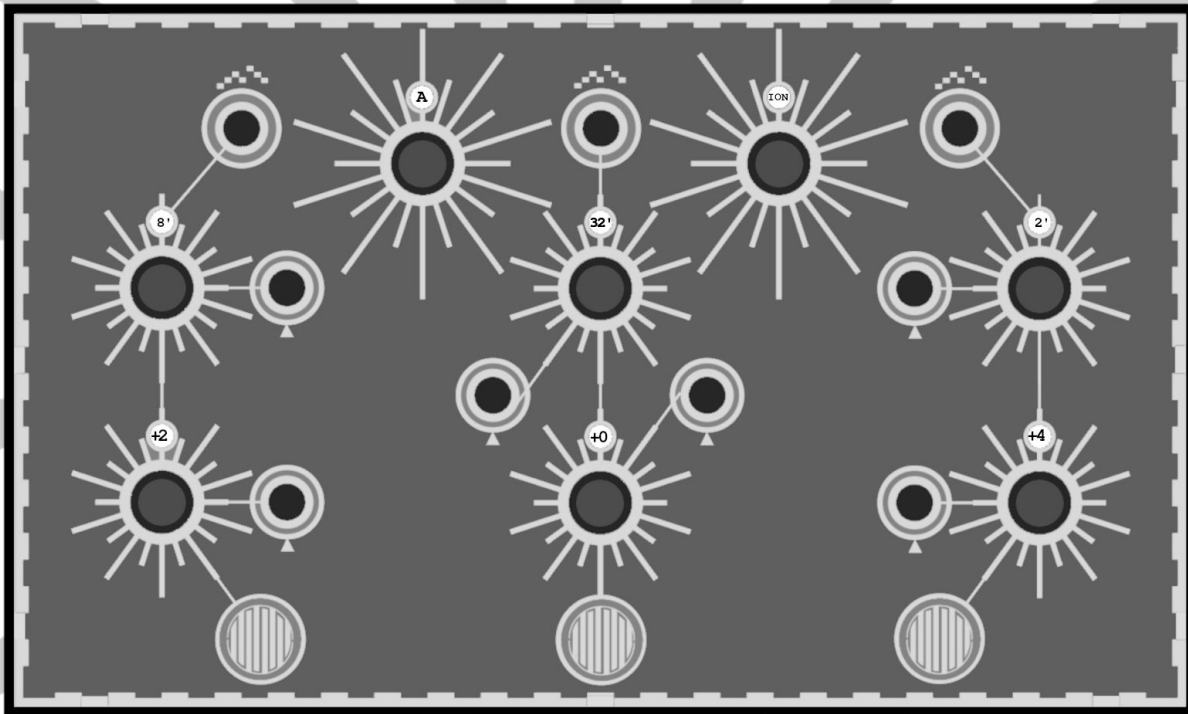


# ***HARMONIC CONSTELLATION***

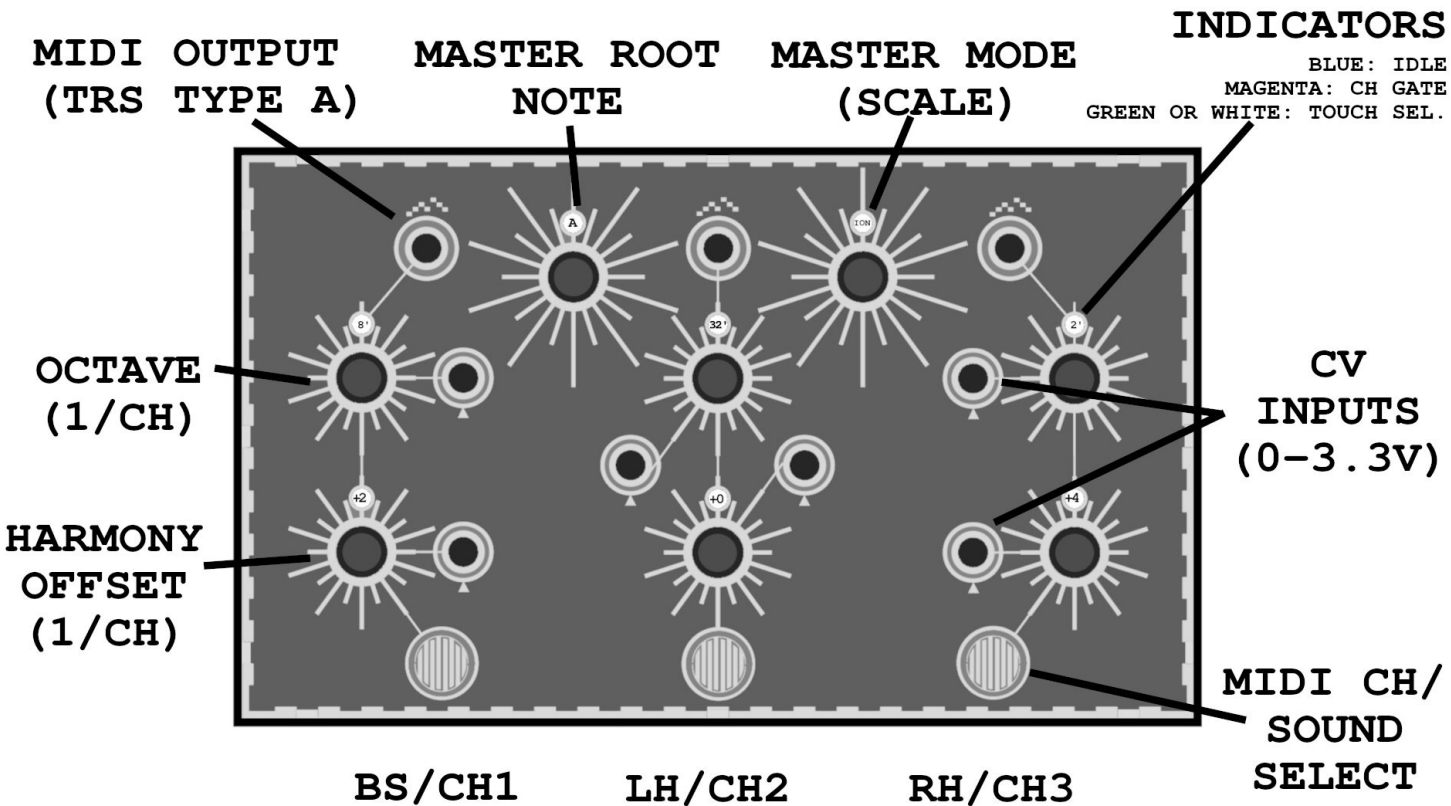


***THREE CHANNEL MIDI EXPANDER, HARMONY COMPUTER,  
AND PRESET SYNTHESIZER FOR AMP DEVICES***





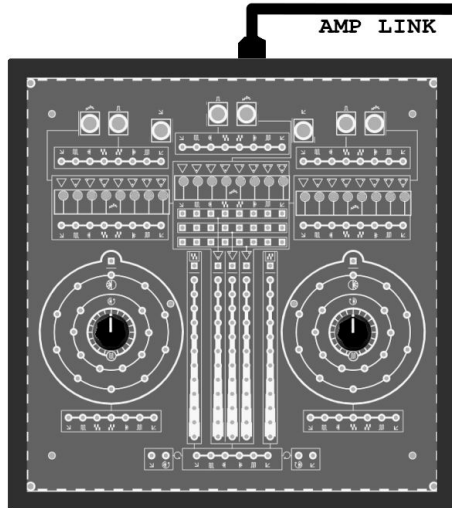
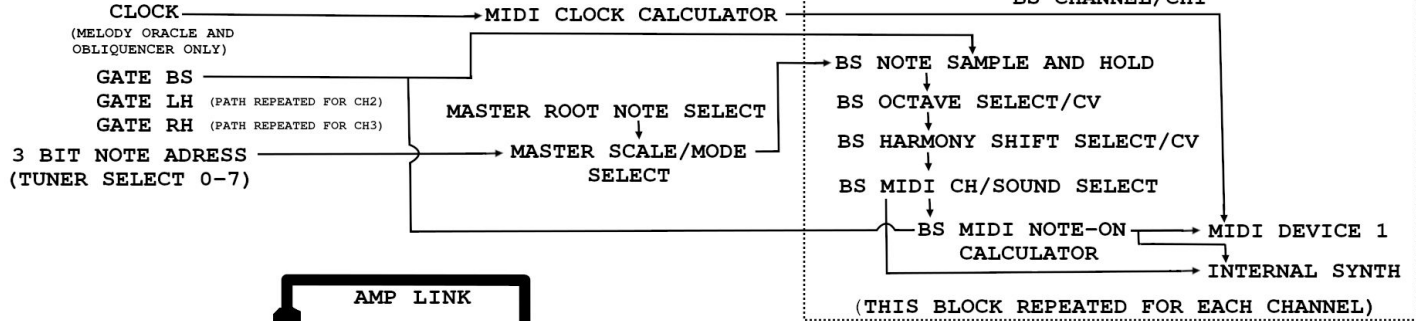
# FRONT PANEL



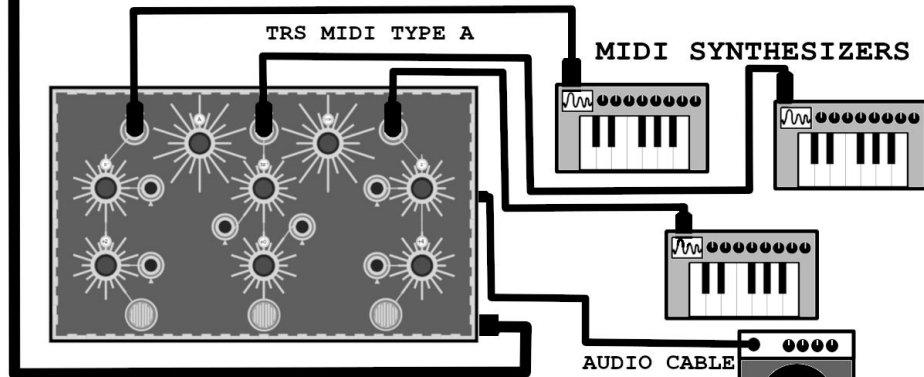
# CONNECTIONS

## INTERNAL STRUCTURE

### AMP LINK INPUT



(OBLIQUENCER, MELODY ORACLE, TOUCH TONES, STAR SONG)



SHIELDED CAT 5E/CAT 6 CABLE

## CABLE PATCHING

# DESCRIPTIONS

## MASTER CONTROLS:

MASTER ROOT SELECTOR: Sets base note from which the scale starts.

MASTER MODE/SCALE (two functions):

- 1) Used to set the series of intervals from which MIDI notes will be chosen. Each mode/scale has a particular flavor.
- 2) Used to select one of two mode banks: Major & Harmonic Minor.
  - Harmonic Minor: Start fully CCW, then bring fully CW within 1 second. You will hear a minor arpeggio chime.
  - Major: Start fully CW, then bring fully CCW within 1 second to select. You will hear a major arpeggio chime.

## PER-CHANNEL CONTROLS/FUNCTIONS:

INDICATOR LEDS: BLUE = idle, MAGENTA = gate indicator, GREEN OR WHITE = touch indicator.

OCTAVE: Sets root octave for the MIDI output or built-in synthesizer voice.

Becomes attenuator for CV when CV is patched.

HARMONY OFFSET: Sets the number of scale intervals (not whole or half tones) the MIDI voice will be shifted, relative to the scale set with the master controls. See the HARMONY page for an example. Becomes attenuator for CV when CV is patched.

MIDI CHANNEL/SOUND SELECT TOUCH CONTROLS: Each press of the control advances the MIDI channel and internal sound preset by one position. There are 16 selections in all. Pressing all three simultaneously resets all channels to 1. Green/white light indicator.

## IN/OUT:

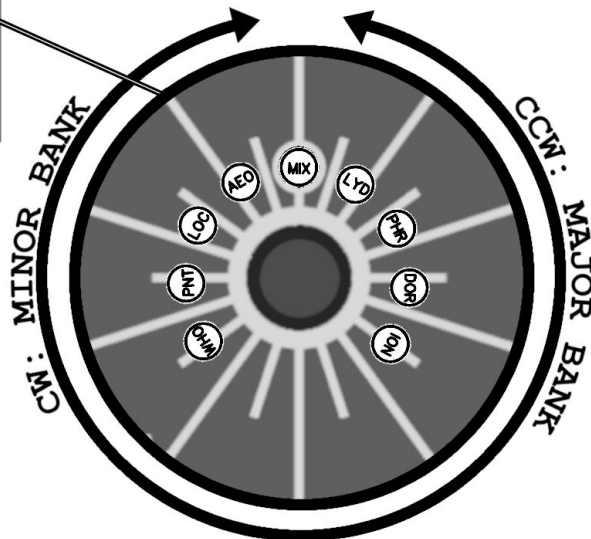
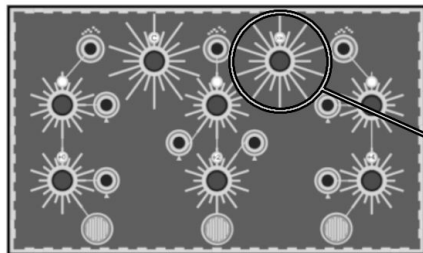
AMP LINK: Either jack can be an input or through port, but do not plug more than one input device in at once, or damage may occur. Multiple expansion units may be chained. Also provides unit power.

MIDI OUTPUTS: Each output carries a duplicate stream of the MIDI notes generated for all three channels. Make sure to set your MIDI devices to correspond with your selected MIDI channels.

CONTROL VOLTAGE INPUTS: Allow external devices to set Octave and Harmony Offset values. 0 to 3.3V. Unipolar, diode protected. See CONTROL VOLTAGE page.

AUDIO JACK: Audio output of internal 3 voice synthesizer (mono).

# SCALES & MODES



IONIAN  
DORIAN  
PHRYGIAN  
LYDIAN  
MIXOLYDIAN  
AEOLIAN  
LOCRIAN  
PENTATONIC  
WHOLE TONE

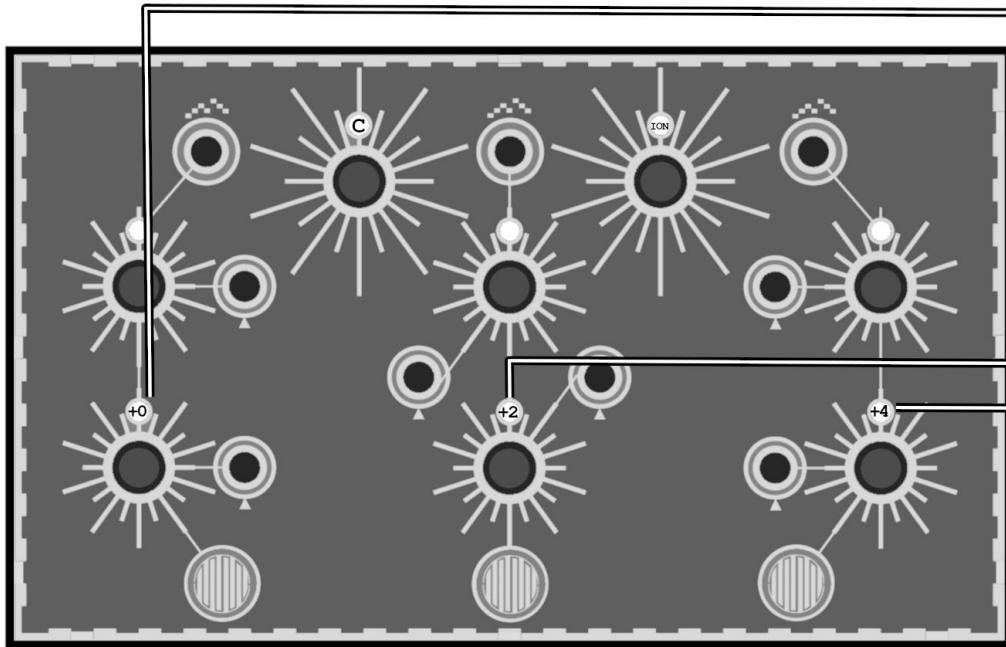
(ALL MODES HAVE  
MAJOR & MINOR VERSIONS  
EXCEPT WHOLE TONE)

TO CHANGE SCALE BANK  
ROTATE SCALE/MODE SELECTOR  
FROM END TO END

# HARMONY

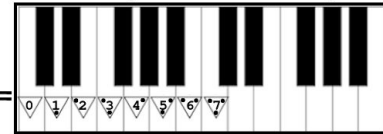
## EXAMPLE: C IONIAN (C MAJOR SCALE)

WITH THIS SETUP, EACH INCOMING NOTE STATE PRODUCES ONE OF THE SEVEN MAIN TRIADS (ROOT, 3RD 5TH) WITHIN THE C MAJOR SCALE



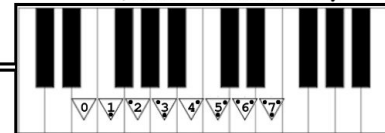
MASTER ROOT SET TO "C," MASTER MODE SET TO MAJOR "ION" (IONIAN)

+0 (NO OFFSET)



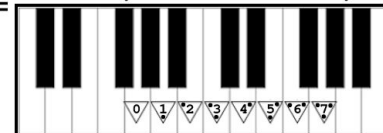
(BASE SCALE)

+2 (3RD OFFSET)



+0 +1 +2

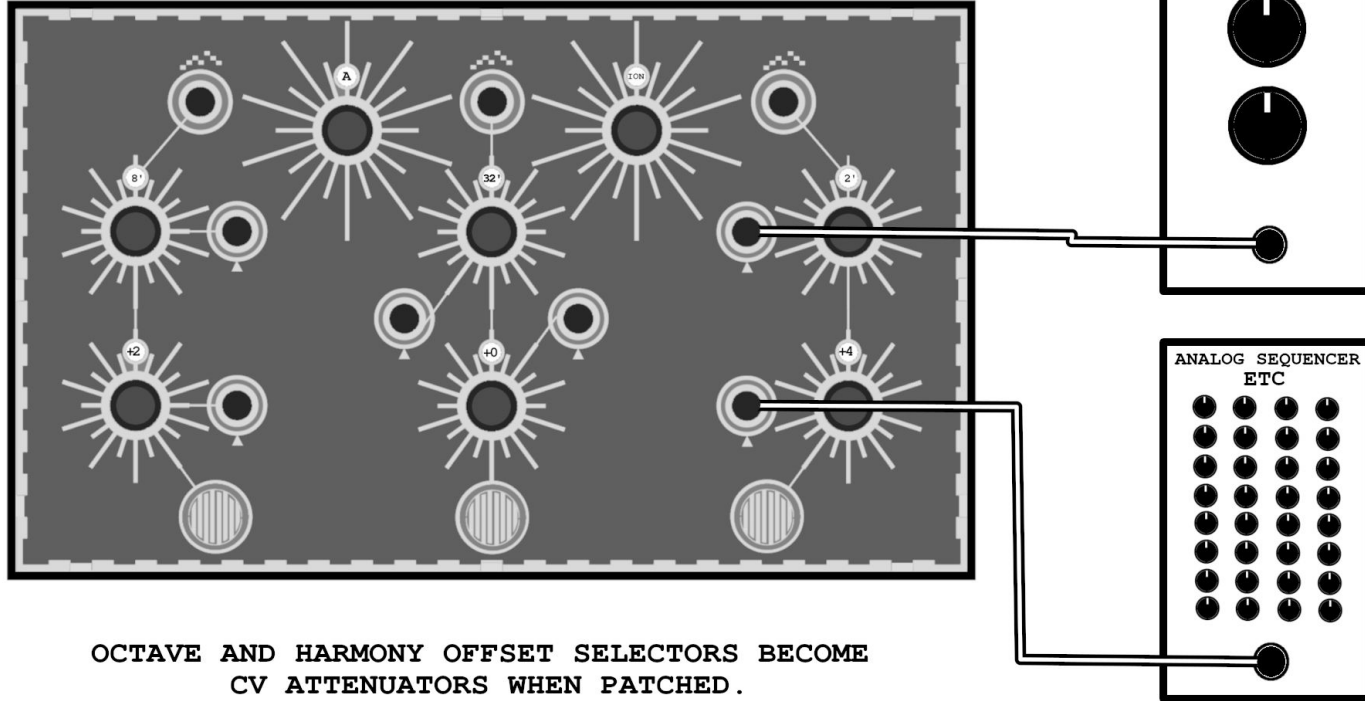
+4 (5TH OFFSET)



+0 +1 +2 +3 +4

# CONTROL VOLTAGE



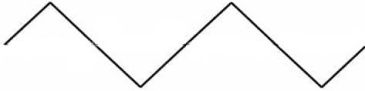




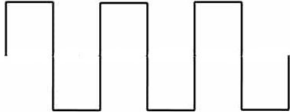




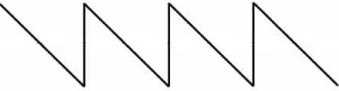







CV INPUTS ARE 0 TO +3.3V UNIPOLAR, DIODE CLAMPED.



OCTAVE AND HARMONY OFFSET SELECTORS BECOME  
CV ATTENUATORS WHEN PATCHED.

# SYNTHESIZER

## PRESET ENVELOPE WAVEFORM

1		
2		 <b>TRIANGLE</b>
3		
4		
5		
6		 <b>SQUARE</b>
7		
8		
9		
10		 <b>SAWTOOTH</b>
11		
12		
13		
14		 <b>RESO-NOISE</b>
15		
16		



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