

IF112 – Double Deka - Ultrasonic VCO

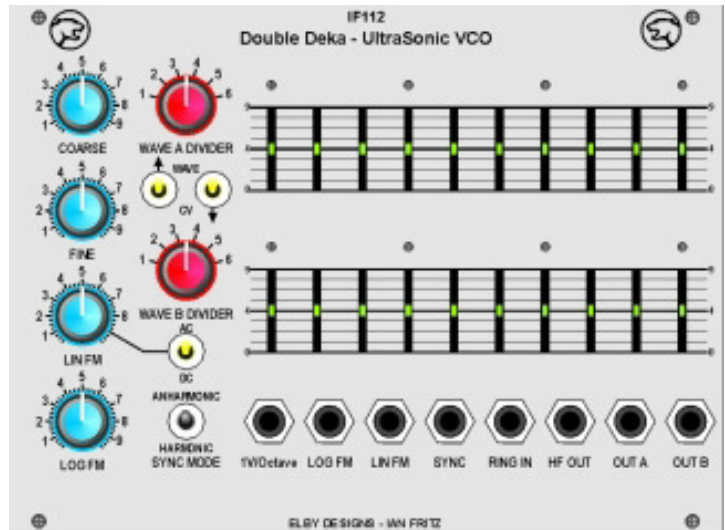


The Panther IFxxx Series is a collection of modules designed to fit the EuroRack module system.

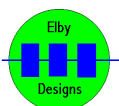
The Double Deka - Ultrasonic VCO

Innovator and designer extraordinaire Ian Fritz brings you one of the most useful and flexible VCOs on the market - the IF112 Double Deka VCO.

The Double Deka is a stable, wide range 1V/Octave VCO with incredible sonic versatility. Imagine "drawing" a 10 stage waveform using lighted front panel sliders. Now imagine two of these separate waveforms, each with a precisely stepped 6 octave range control that can also be externally voltage controlled. In addition, using a built in knob or external control voltage, you can cross-fade between the two waveforms. Add to this, two unique new types of sync, a funky digital ring modulator (DRM) type input, plus separate linear and exponential FM inputs, and you begin to see (and hear) the possibilities.



This unique VCO consists of an ultrasonic oscillator core followed by a parallel pair of waveform generators. Each waveform generator consists of a voltage controlled multi-octave divider, followed by circuitry to generate a 10-step waveform using a set of 10 slider potentiometers. Also included are a novel synchronization circuit with two different operating modes and a built-in "digital ring modulator" (DRM) for producing a wide variety of synchronized and anharmonic sounds. The oscillator core is highly stable (better than 20ppm/K) and features wide-range, accurate tracking (better than 0.05% over fifteen octaves). The variable waveform generator provides fine control over an enormous range of available timbres. The high frequency output of the "core" oscillator is provided for use in driving other frequency dividers.



Elby Designs – Laurie Biddulph
Kariang, NSW 2250, Australia

elby_designs@ozemail.com.au <http://www.elby-designs.com>

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The IF112 has 2 synchronous oscillators i.e. they have 1 core oscillator which is then divided in to the 2 output sections `A' and `B'. For each section you have an octave divider (OUTx DIVIDER) which allows you to divide by 2 for each position from right (6) to left (1).

COARSE and FINE work on the core oscillator so affect the frequency of both sections together. The master frequency of the IF112 can be measured at HF OUT.

The 3 outputs are:-

HF OUT - the core oscillator frequency

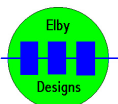
OUT A and OUT B - the outputs from the two sections.

All other connectors are inputs with most of their functions obvious from their labels:-

- 1V/Octave - this will double the oscillator frequencies for each 1V increase i.e. conventional voltage controlled input
- LOG FM - same as 1V/Octave but this time it is not scaled to 1V/Octave so the control range is less musical
- LIN FM - voltage input here modules the oscillator in a liner scale. Typically used for effects like tremolo. The AC/DC switch defines if the LIN FM input is DC or AC connected
- SYNC- a pulse here forces the oscillators to restart the waveform which effectively means is returns immediately to the output stage defined by the first sliders on the left
- RM IN - Ring Modulator. This allows for distortion of the waveform. Often used in conjunction with the SYNC input in which case the HARMONIC and ANHARMONIC switch is used to provide different forms of modulation.

The WAVE/CV switch is used to define if the output waveforms go from 0V to a positive only value (CV) or are centered around 0V and go both positive and negative (AC).

The output waveforms are defined by the position of the sliders. With all sliders at the bottom position the OUT (x) waveform will be permanently low, with all the sliders at the top the output will be permanently high. Slider settings in between these positions will define the magnitude of that step of the waveform (each OUT (x) waveform comprises 10 consecutive steps with the output voltage for each step defined by the respective slider).



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Controls and Connectors

- Coarse Tune control
- Fine Tune control
- Exponential FM Level control
- Linear FM Level control
- Octave controls (x 2)
- Waveform controls (10 x 2)
- Output coupling (AC/DC) switch
- Linear FM Coupling (AC/DC) switch
- Sync Type (Harmonic / Anharmonic) switch
- 1V/Octave input
- Exponential FM input
- Linear FM input
- Sync input
- Ring Modulator input
- High Frequency output
- Octaves A & B outputs

Frequency Range

~1 Hz to 10 KHz. (Core: ~10 Hz to 100 KHz)

Inputs

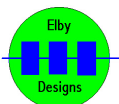
Nominally accept 10V PP.

Outputs

Waveforms: +/- 5V, 10V P-P.

HF Out: 0 to +5V. ~1 Microsecond positive pulse.

Power Consumption	+12V @ 40mA, -12V @ 30ma
Module Width	35HP
Module Depth	45mm



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