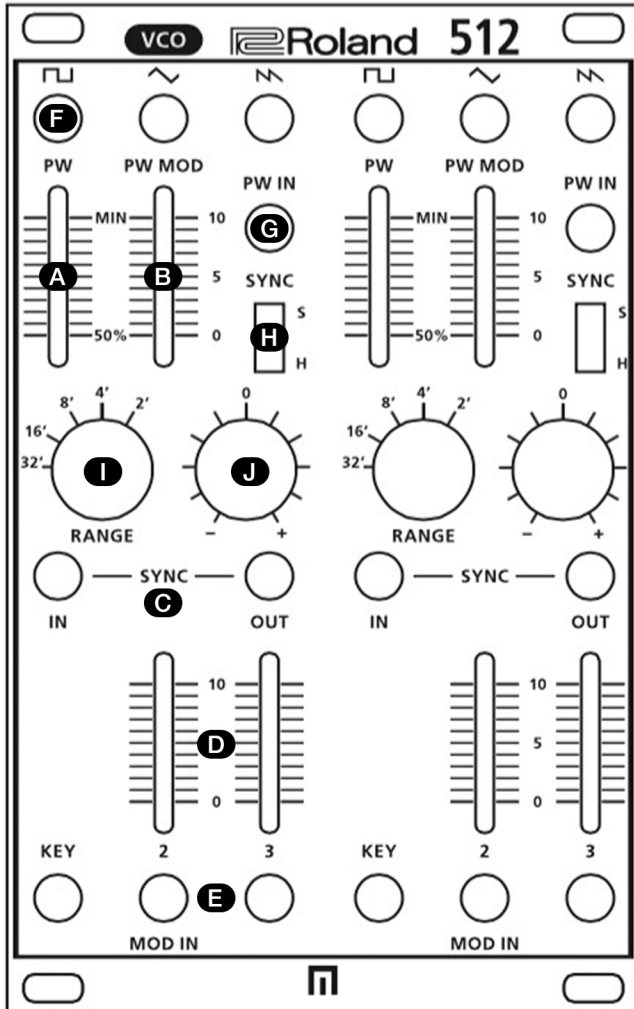


ROLAND SYSTEM-500 MODULE 512

DUAL VOLTAGE CONTROL OSCILLATOR

The 512 Dual VCO (voltage controlled oscillator) is a single module consisting of two voltage controlled oscillators. Each independent VCO produces frequencies across a wide range with 1V/octave tracking and dedicated pulse, triangle, and saw wave outputs. Variable pulse width is available via panel control or CV modulation. Each oscillator's frequency can also be synchronized to the other in weak or strong modes to achieve a unique "sync" sound.



A PULSE WIDTH CONTROL
Specifies the pulse width (the ratio between the upper and lower portions of the pulse wave).

* To produce a square wave (symmetrical pulse wave), set the slider to 50%.

B PW MOD
Adjusts the depth of pulse width modulation based on the voltage that is input from the PW IN jack.

C SYNC IN/OUT
These jacks input or output synchronization signals.

D CV INPUT ATTENUATOR
Adjust the level of the voltage that is input from the MOD IN jacks.

E MOD IN KEY/2/3
These jacks input voltages that control the VCO.

F VCO OUT
These jacks output the signal from each VCO (pulse wave, triangle wave, sawtooth wave).

G PW IN (PULSE WIDTH IN)
This jack inputs a voltage used to control the pulse width (PWM) from an external source.

H SYNC
Switches the accuracy of synchronization (S: Soft, H: Hard).

I RANGE
Switches the pitch range of the VCO. You can switch the range up or down in one-octave steps in a five-octave range from 32' to 2'.

* If this is set to 8' and a voltage of 2V is applied, the middle C pitch is sounded.

J PITCH CONTROL
Fine tune adjustment.

SPECIFICATIONS

CONTROLLERS	PULSE WIDTH SLIDER PWM SLIDER MODULATION IN 2 SLIDER MODULATION IN 3 SLIDER SYNC SWITCH RANGE KNOB PITCH KNOB
CONNECTORS	SQUARE WAVE JACK TRIANGLE WAVE JACK SAW WAVE JACK PULSE WIDTH IN JACK SYNC IN, OUT JACKS KEY IN JACK MODULATION IN 2 JACK MODULATION IN 3 JACK

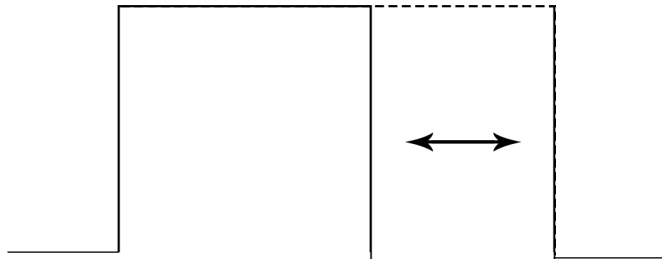
POWER SUPPLY
CURRENT DRAW

ACCESSORIES

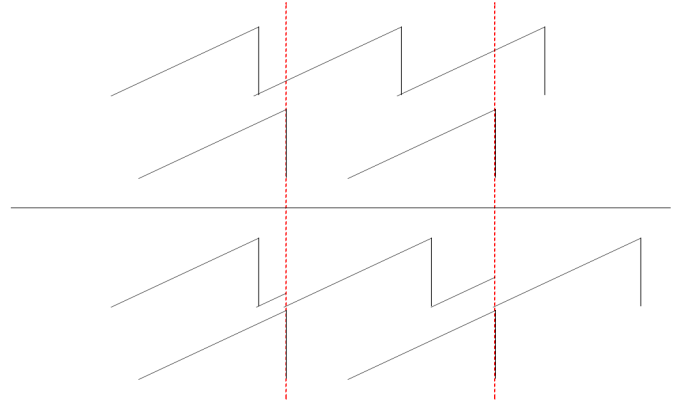
EURORACK POWER
70 MA (+12 V)
50 MA (-12 V)
OWNER'S MANUAL
LEAFLET "USING THE UNIT SAFELY"
EURORACK INSTALLATION SCREWS
EURORACK POWER CABLE

ROLAND SYSTEM-500 MODULE 512

ABOUT PULSE WIDTH



ABOUT SYNC



ABOUT PULSE WIDTH

A pulse wave in which the upper and lower portions of the waveform have unequal width is called an asymmetrical pulse wave, and the numerical ratio of the upper and lower widths (to be precise, the portion of one cycle occupied by the upper portion) is called the pulse width. The pulse width value significantly changes the overtone structure, modifying the tonal character of the sound.

* If the pulse width is $1/n$, the harmonics at multiples of 'n' are missing. For example, if the pulse width is $1/3$ (33%), the 3rd, 6th, 9th, . . . harmonics are missing.

The technique of using a control voltage (such as LFO or ENV) to control the pulse width is called pulse width modulation (PWM).

ABOUT SYNC (SYNCHRONIZATION)

SYNC synchronizes the frequency of a VCO with the frequency of another VCO. By synchronizing two VCOs you can create waveforms that cannot be produced by a single VCO.

If the SYNC switch is set to S: Soft, the VCO of the 512 module synchronizes perfectly to the frequency that is input from the SYNC IN jack. If the SYNC switch is set to H: Hard, the VCO of the 512 module synchronizes to integer ratios of that frequency, such as $1/2$, $2/3$, $3/4$, $1/1$, $4/3$, $3/2$, or $2/1$.