

synthesis technology MOTM analog modular synthesizers

Controls

INITIAL: initial VCA gain **LIN CV**: reversing attenuator for linear CV **GAIN**: overall gain of the VCA (volume)

Jacks

EXP CV: exponential response control voltage **LIN CV**: linear response control voltage **IN**: input signal (DC coupled) **OUT**: output of VCA (DC coupled)

Connecting power to the module

MOTM-1190 Dual VCA Frac Rack Edition



The MOTM-1190 comes with a 20in, 4-conductor power cable. This power cable is compatible with Blacet, PAiA and other Frac Rack power supplies. The module requires +-15VDC at 33ma. The power cord has a red wire (+15V), 2 black wires (ground) and a white wire (-15V). Be absolutely sure the red wire is on the +15V pin (it is clearly marked on the pc board) and the white wire is on the -15V pin (near the ribbon cable). **Note**: the color scheme of this power cord may not correspond to the colors used by other manufacturers.

Using the MOTM-1190

This module has 2 independent voltage-controlled amplifiers (VCAs). Each VCA has 2 CV inputs: exponential and linear. For normal operation, the output from an envelope generator (like the MOTM-1800) is patched to the LIN CV jack. The audio signal (from VCO, VCF, etc) is patched into IN. The LIN CV reversing attenuator sets the "depth" of the effect of the LIN CV input. Setting to the '-' scale means an *increase* of CV makes the output amplitude *decrease*.

The exponential CV input allows the VCA to have an extremely "snappy" response (perfect for drum patches). The VCA's gain rapidly increases as the exponential CV is between 3 and 5V.

The INITIAL gain pot controls the "static" gain of the VCA (when the CVs are 0V). This is different from the GAIN control, which is a maximum overall setting for the VCA output. The MOTM-1190 contains a "soft clipper" that begins when the output exceeds 10V peak-peak. This circuit will slowly add even harmonics to the output. Since the VCAs are DC coupled, the MOTM-1190 can control LFOs, EGs and other slowly-changing signals.

Calibration

Each VCA has a trim for control voltage feedthrough. This will reduce "thumps" that occur due to a DC shift in the output during fast envelopes. These should never need adjusting.