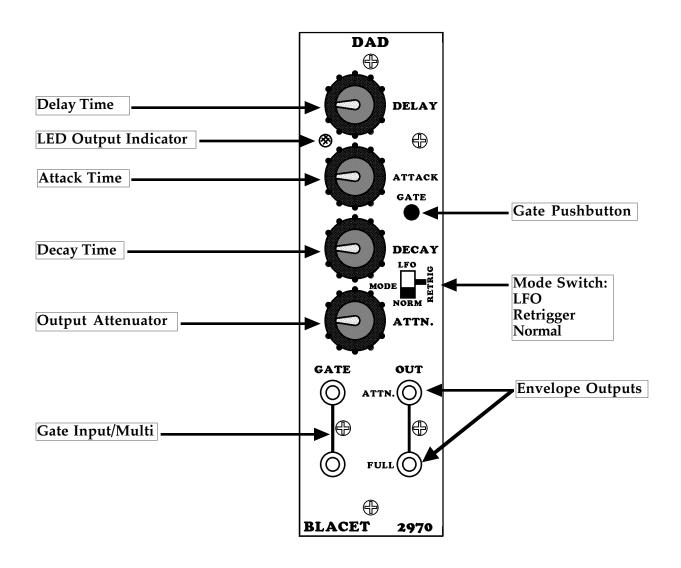# Introduction

The Blacet DAD2970 is an event generator with Delay, Attack, and Decay segments. The DAD may also be looped, yielding an LFO.

Logic timing is handled by a small microcontroller to minimize component count. The actual analog output signal is generated using a transconductance amplifier and analog switches to charge and discharge a capacitor.

The two Gate inputs are connected together multi fashion so that gate signal can also be routed to another module.

Two envelope outputs are available, one with an attenuator and one full output.

Delay Time

LED Output Indicator

Attack Time

Gate Pushbutton

Decay Time

Mode Switch:
LFO
Retrigger
Normal

Output Attenuator

Envelope Outputs

Gate Input/Multi

DAD

DELAY

ATTACK

GATE

DECAY

LFO

RETRIG

MODE

NORM

ATTN.

GATE

OUT

ATTN.

FULL

BLACET   2970

Controls and Operation

Operation of the DAD is fairly straight forward. If you are used to a standard ADSR, then this module is similar except that it has a Delay segment and does not have a Sustain segment.

Input a Gate signal; typically a 5 to 10V square or pulse, to trigger the envelope. You can also use the push button switch.

Slide switch S2 enables the module to respond in three different ways to a Gate signal.

In the Norm position, the complete envelope runs without interruption. This would typically be thought of as a trigger function.

In the Retrig position, the envelope can be restarted at any time by the Gate.

In the Loop position, the envelope will loop as long as the Gate is active.

Outputs can be connected to any voltage controlled device, such as a filter, VCO or VCA. One output has an attenuator while the other is full swing and may be used as is or attenuated via another module such as a Mixer.

Segment Timing is as follows:
Delay Time: 0 to 10S
Attack Time: 1 mS to 7S
Decay Time: 1 mS to 8S
Maximum Audio Rate: 500 Hz

Although the module can be used at audio rates, you will notice a bit of waveform uncertainty or jitter at these frequencies. This is due to the use of a uC for the timing functions and the looping, multi tasking nature of the program. This feature can be used to add a bit of digital noise to spice up patches.

The 10V output of the module can be changed to 5V by changing R9 to 100K; see schematic.

Power

Power Input Connector PWR: This PCB connector requires a source of regulated +15Vdc and -15Vdc power to run the module. Use a Blacet PS505 supply or the equivalent.

Connections to this connector should be made only when the power supply is OFF and the connector must be positioned correctly on the pins. As using the wrong supply can cause damage to the unit, please contact us if you have any questions! Do not attempt to use "wall warts" to power the module.

Specifications

Delay Time: 0 to 10S
Attack Time: 1 mS to 8S
Decay Time: 1 mS to 8S
Maximum Audio Rate: 500 Hz
Front Panel Size: 5.25" H x 1.5" W
Module Depth: 3.5"
Input/Output Jacks: 3.5 mm
Power: +15 Vdc @ 35mA, -15 Vdc @ 22mA