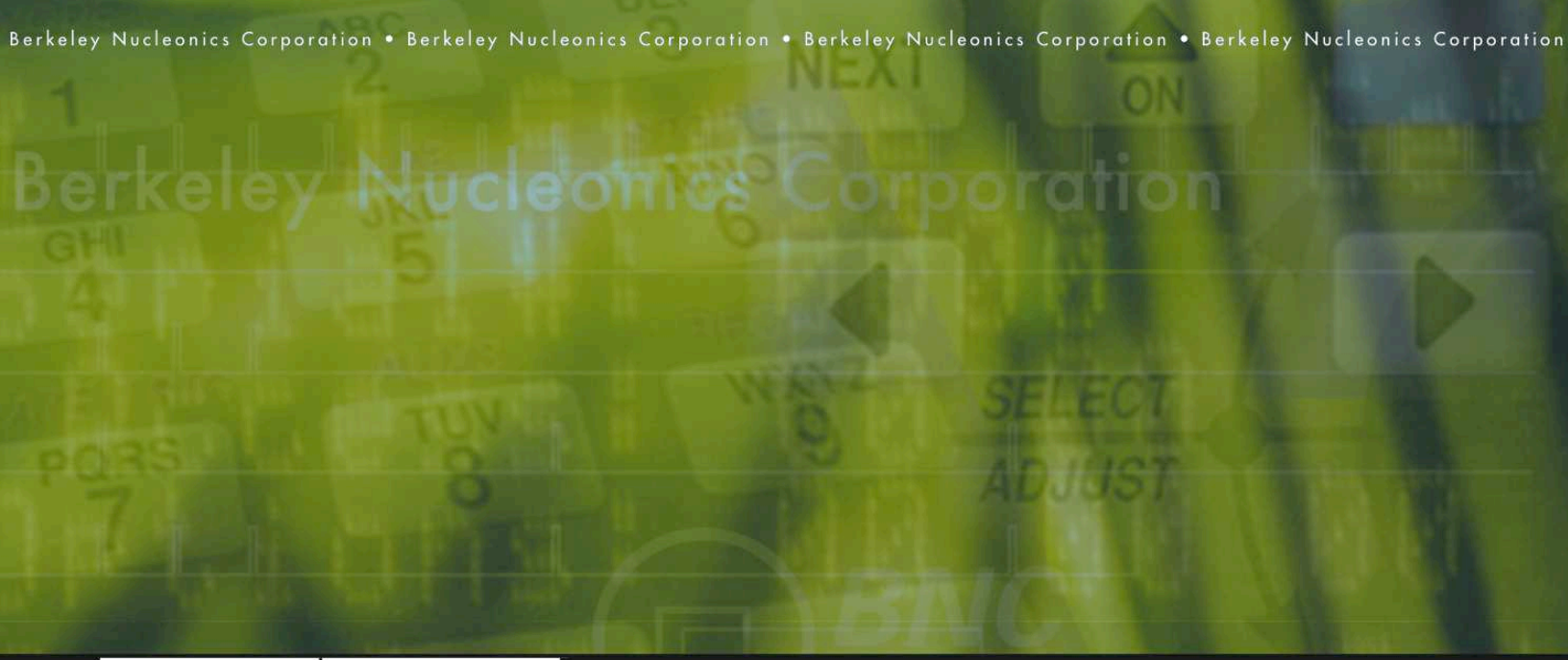


NIM Random Pulse Generator



B N C | m o d e l | D B - 2



M O D E L | D B - 2

- Random and Repetitive Modes
- Count Rate 10 Hz to 1 MHz
- Amplitude Shift With Count Rate Less Than +/- 0.05%
- Independently Adjustable Rise and Fall Times

SPECIFICATIONS

Count Rate 10 Hz to 1 MHz, continuously adjustable

Mode Random or Repetitive

Random Distribution Poisson for intervals greater than 1.4 μ s

Pulse Shape Tail pulse with independently adjustable rise and fall times

Pulse Amplitude (STEP) Characteristics

a) Amplitude Shift with Count Rate: Less than $\pm 0.05\%$ from 10 Hz to 100 KHz

b) Jitter (resolution): 0.01% RMS

c) Temperature Coefficient: $\pm 0.02\%/^{\circ}\text{C}$

Frequency Jitter (Repetitive Mode) Less than 0.1%

External Trigger Requires 1 V positive pulse. Input impedance 1 K.

Trigger Out Positive 3 V pulse, 20 ns rise time, 100 ns width, 50 Ω output impedance.

Rise Time of Output (10-90%) 0.1-20 μ s in 8 steps.

Decay Time Constant (100-37%) 5-1000 μ s, in 8 steps. Rise and Decay time independent of each other for Decay Time/Rise Time > 10.

Output Amplitude Ranges Repetitive only, ± 10 V max
Repetitive or Random, ± 10 V max, from 50 Ω source. Adjustable by ten-turn potentiometer from zero to maximum.

Normalize Ten-turn control varies amplitude by 60%

Output Impedance 50 Ω ; AC coupled.

Attenuation 4 step attenuators of X2, X5, X10 and X10 for a maximum of X1000

External Reference Input ± 10 V max; 10k input impedance

Power Requirements ± 24 V at 65 mA, +12V at 140 mA, -12 V at 40 mA

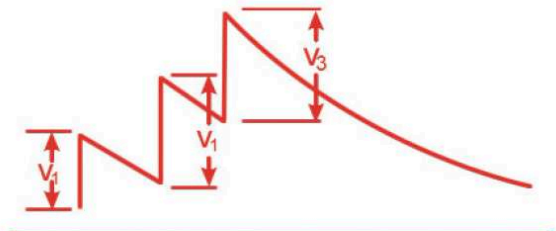
Mechanical Double-width NIM module; 2.70" wide by 8.70" high in accordance with TID-20893 (Rev. 3)

Weight 3.5 lbs. net; 7 lbs. shipping

The Model DB-2 is a pulse generator which accurately simulates the random and pileup characteristics of pulses from a radiation detector. It provides pulse which are mono-energetic over a broad range of average count rates.

Under high count rate conditions, the pulses will pile-up as shown in the diagram below. This characteristics is useful in determining pile-up or count-rate effects and in measuring the resolution of high count rate spectroscopy systems.

Besides random pulse, the Model DB-2 also provides mono-energetic repetitive pulses. In this mode, the DB-2 is an excellent general purpose pulser. When the EXT REF input is used with an external ramp, the DB-2 provides sliding pulses to quickly check system or component linearity.



Monoenergetic Piled-up Random Pulses
Mono-energetic Piled-up Random Pulses

