## Delays

In experiments involving several sources of analog and logic signals, the signals from different paths usually must be aligned to arrive simultaneously at the decision points. This is the function of delay modules. For analog signals the pulse amplitude information must be preserved. Consequently, coaxial cables or lumped-parameter delay lines are used to generate the delay.

With logic pulses, three methods can be used. For short delays, coaxial cables can be employed. A more compact solution uses lumped-parameter delays with logic gates acting as buffers between the many delay sections. These first two solutions minimize the dead time following each pulse. If dead time is not a problem, the simplest method of achieving long delays with logic pulses is to use a "gate and delay generator." In this case, the original logic signal triggers a "one-shot" circuit. The width of the one-shot pulse sets the delay, and the trailing edge of the one-shot signal triggers the output pulse. Typically, another one-shot is used to set the width of the output pulse.

## Logic Modules

In coincidence measurements, logic signals from various parts of the experiment must often be combined to determine which events are to be accepted for analysis. Logic modules provide a flexible means of making these decisions.

## Linear Gates

When some analog signals must be blocked, and some must be selected to pass on to a subsequent instrument, a linear gate is required. Linear gates usually provide a variety of ways to use a logic pulse in blocking or passing the analog signal.

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