

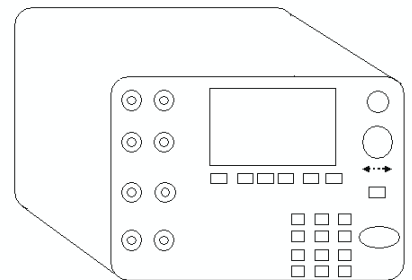
...our most versatile instrument



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B N C | m o d e l | 5 7 7



- 50pS Jitter Internal, 800pS External Trigger
- Programmable (Ethernet/USB/RS-232/GPIB)
- Separate Patterns for Each Channel Possible
- 250pS Delay & Width Resolution



NSCA Technologies & Tra-Cal Lab 7901 Beechcraft Ave., Ste. M & N, Gaithersburg, MD 20879
www.nscainc.com | info@nscainc.com | 1-888-280-6722 (toll-free #)

The Model 577 Digital Delay/ Pulse Generator represents the latest in timing capabilities. Eight outputs, each configurable with its own pattern, its own trigger, its own gate, its own delay and width settings, make the 577 our most versatile instrument. The 250 ps width and delay resolution and 200 ps internal jitter give gating, triggering, delaying, clocking and synchronizing a precision sufficient for nearly every application. Add to this performance: optical or electrical outputs and inputs, pulse picking capabilities, selectable external clocks and USB/RS232 programming.

New Features:

Illuminated Channel Enable Buttons

Each channel has a designated enable/disable button. When individual channels are active or enabled the buttons are illuminated. This allows for easy reference and avoids any confusion of output operability. The run/stop indicator on the front panel LCD display as well as an illuminated run/stop button further simplify setup.

Two Inputs to Use as Triggers and/or Gates

You may choose which channels use a particular trigger or a particular gate. You may select to have the inputs configured as a single trigger and a single gate, as two triggers or as two gates.

Optical and/or Electrical Inputs and Outputs

You may choose to have all electrical, all optical or a combination of both. In environments with EMI issues, optical signals become a necessity.

Selectable External Clock Frequency

For synchronizing using your external clock, you may select from a number of frequencies between 10 MHz and 100 MHz in 1 MHz increments. As an example, pulse picking at 80 MHz allows one to select one pulse out of a 80 MHz pulse stream.

Individual Synchronized Patterns

Each channel may have patterns that may be continuous, a single burst, a series of repetitive bursts, a sub-harmonic of a previous channel, a single timed pulse. All the while the pulses have their own delay and widths. A typical application is to have a channel issue series of pulses to trigger flashlamps or laser diodes. Other channels can trigger Q-switches, detectors and cameras with single timed pulses synchronized to the pulse series in the first channel. Gates can be inserted to further control whether devices are activated.

Auto-Save

Forgot to save your settings? The Model 577 stores your setup configurations while powering down. Recall is automatic on power-up.

Front Panel Optical

Many applications benefit from optical signals. For noisy environments, or communications applications, we offer an LED output stage at the front panel. This modular option can be configured for 2, 4, 6 or 8 outputs at 820nm or 1300nm



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High Voltage and 50 Ohm Load Output Modules

The inputs and outputs for the 577 consist of modules that may be changed at the factory. The standard 577 electrical output module provides adjustable amplitudes of 4V and 20V from a 50 ohm source impedance. On occasions that one may need a higher voltage into 50 ohms, we offer a 35V signal into 50 ohms output module as well as a TTL/CMOS into 50 ohms output module.

Electrical and Optical Outputs Simultaneously

Again, the inputs and outputs for the 577 consist of modules that may be changed at the factory. Thus one may select optical, standard electrical or high voltage electrical in pairs for their instrument. For example, a 8 channel unit may have optical, standard electrical and high voltage outputs all on one instrument. Custom or additional output modules may be added as the need arises.

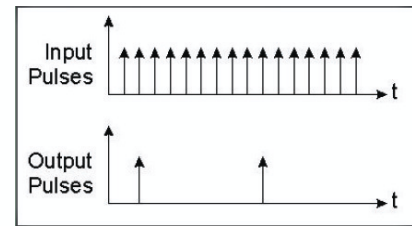
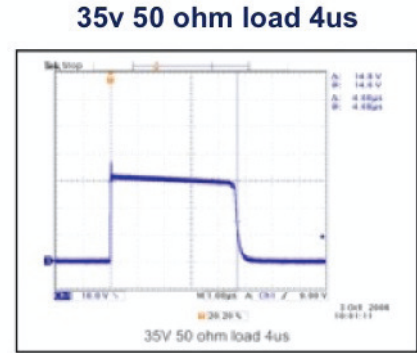
Field Programmability:

Field Programmability

The instrument can now have functions upgraded in the field, such as a special or custom feature upgrade via a fully programmable FPGA.

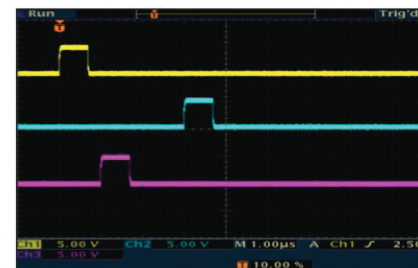
Pulse Picking

You select the external clock frequency value and insert that frequency into the external clock input of the 577. Now you may set the delay and width of a channel to select a single pulse out of this pulse train. You may select other channels to have differing delays to have them control devices that are synchronized to this single pulse. Also you may try using a second channel identically timed with the first to be a trigger for some of the remaining channels. Many timing options to consider here.



Negative Delay

Use the handy negative delay feature to reference one channel with respect to another channel in positive or negative time increments. By allowing a channel to reference another channel as its trigger, you can synchronize the channels with respect to each other.



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DELAYS	
Range	0-1000 s
Resolution	250 ps
Timebase	25 ppm
RMS Jitter	200 ps
Pulse Inhibit Delay	120 ns
Output Inhibit Delay	50 ns
SYSTEM EXTERNAL TRIGGER INPUT(S)	
Number	2 1
Rate	DC to 1/(200ns + longest delay); maximum of 5MHz
Threshold	0.2 to 15 VDC
Max Input Voltage	60 V Peak
Resolution	10 mV
Slope	Rising or Falling
Impedance	1 M ohm + 40 pF or 50 ohm
Jitter	800 ps RMS
Insertion Delay	100 ns
GATE INPUT(S)	
Number	0 1
Threshold	0.2 to 15 VDC
Max Input Voltage	60 V Peak
Resolution	10 mV
Polarity	Active High/Active Low
Function	Pulse Inhibit or Output Inhibit
Channel Behavior	Global w/ Individual Channel Enables
INTERNAL RATE GENERATOR	
Number	0.0002 Hz to 10.000 Mhz
Resolution	5 us
Accuracy	Same as timebase
Jitter	50 ps
Setting	1 cycle
Burst Mode	1 to 10,000,000
TTL/ADJUSTABLE OUTPUTS	
Number	4 or 8 Channel Outputs
Impedance	50 ohm
Pulse Width Range (TTL)	10 ns - 1000 s
Rise Time (TTL)	3 ns typ
Slew rate (Adjustable)	0.1 V/ns
Overshoot	< 100 mV +10% of pulse amplitude
Levels	TTL 0 to 4 VDC into high impedance *VAR adjustable amplitude, 2.0 to 20.0 VDC with 10 mV res, 20.0 VDC max transition into high impedance

ELECTRICAL INPUTS	
Number	0 or 2
Rate	DC to 1(0.2 us + longest delay)
Threshold	0.2 to 15 VDC
Max Input Voltage	60 V Peak
Resolution	10 mV
Impedance	1 M ohm + 40 pF or 50 ohm
Function(s)	Individual Channel Trigger Gate/Follower
Trigger Slope	Rising or Falling
Gate Polarity	Active High or Active Low
Trigger Jitter	< 2 ns
OPTICAL OUTPUTS	
Number	4, 8
Wavelength	820 nm or 1300 nm
Max Signal Rate	5 M Bd
Max Link Distance	1.5 km
Connector Type	ST
Resolution	500 ps
Accuracy	1 ns + .0001 x delay
OPTICAL INPUTS	
Number	0 or 2
Wavelength	820 nm or 1300 nm
Max Signal Rate	5 Mbd
Max Link Distance	1.5 km
Connector Type	ST
Resolution	500 ps
Accuracy	2 ns + .001 x delay
Optical Trigger	2412
Trigger Delay	< 300 ns
Jitter	< 15 ns
STANDARD FEATURES/FUNCTIONS	
Communications	USB/RS232
Global Gates/Triggers	2 Global Gate/Trigger Inputs
Channel Gates/Triggers	Optical/Electrical available (5 ns Jitter)
External Clock in	10 MHz - 100 MHz User Selectable in 1 MHz Steps
External Clock out	10 MHz - 100 Mhz User Selectable To, Ext Clock, & Sub Multiples of each
Command Set Compatibility	Backwards Compatible