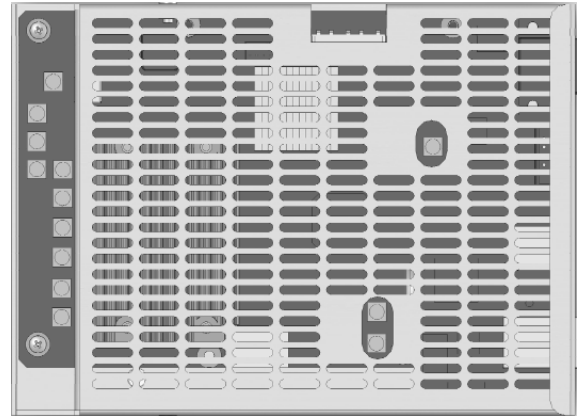


## Model 745-OEM

# Compact Digital Delay Generator

### FEATURES

- Four high resolution delay channels  
0.25ps resolution  
< 25ps rms jitter (5ps rms jitter for short delay)  
20 seconds delay range
- Option: Four auxiliary delay channels with 1.25ns resolution
- Trigger sources: External, two Internal timers or Software
- Triggers modes: Single, repetitive, burst with gate and trigger prescaler features
- Compact packaging
- All parameters may be controlled via Ethernet or USB



### APPLICATIONS

- Embedded OEM application
- ATE application
- System laser timing control
- Precision pulse
- Components test
- Instrument triggering
- Synchronization with selectable external clock frequency - Mode locked lasers

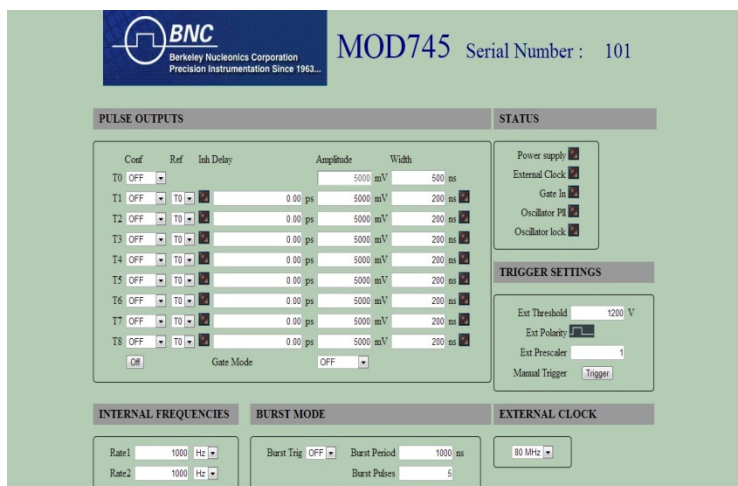
### DESCRIPTION

The Model 745-OEM is a compact digital delay generator intended for use in embedded OEM applications. The delay generator provides four independent delay channels (T1 to T4). The delay resolution is 0.25 ps, and external trigger to channel jitter is less than 25 ps rms. MCX outputs deliver up to 5 V, 2 ns rise time, under 50  $\Omega$ . Amplitude and width are adjustable on each output pulse.

A T0 output pulse is also available. It gives a time reference for each generated delayed output. The device can be triggered by different ways: either with an external trigger via a MCX input or with 2 internal timers or with a software command trigger, each one with repetitive, single shot and burst trigger modes.

The Model 745-OEM also provides (in option) four auxiliary delays channels T5 to T8. The delay resolution is 1.25 ns and trigger to channel jitter is less than 50 ps rms.

All the Model 745-OEM parameters can be controlled via Ethernet, Internet (Web page) or USB.



*Model 745-OEM Web page*

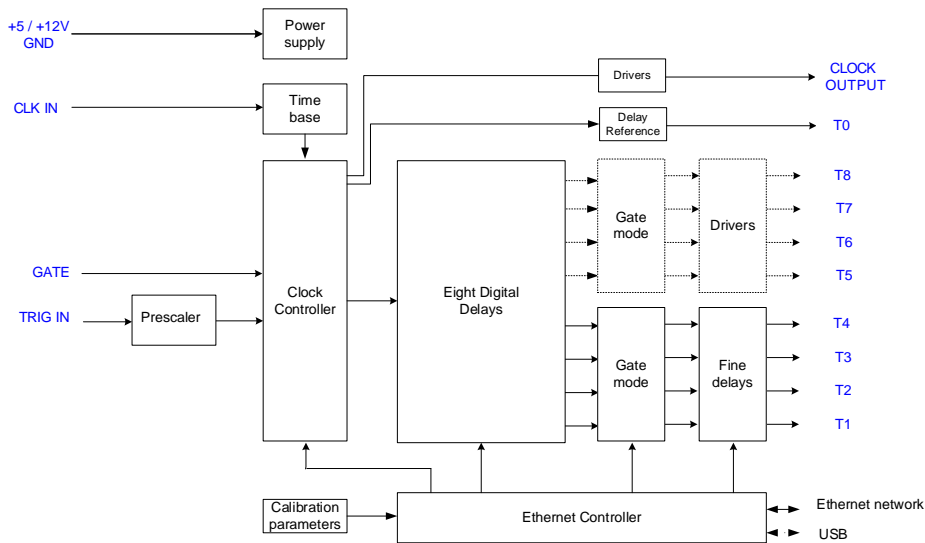
### Control panel Web page:

This web page, from embedded Web server, provides a simple method to configure settings for each channel (delay, output amplitude, output width), trigger source, trigger mode, and to control operation and status of the instrument.

The configuration information of the instrument are stored and saved in the unit (Up to 4 different sets of units' configuration can be stored/recalled).

# Model 745-OEM

## Compact Digital Delay Generator



*Block diagram*

### SPECIFICATIONS

#### Delays

Channels	4 independent delay outputs
Range	0 to 20 seconds
Resolution	0.25 ps
RMS Jitter	25 ps + delay x $10^{-7}$ (external trigger to any output)
	5ps for short delay (channel to channel)
Accuracy	< 250 ps + delay x $10^{-7}$
Time base	0.5 ppm stability

#### Trigger source

Internal	Two tunable Timers in Hz / ns 1 Hz to 1 MHz, 1Hz resolution 1 $\mu$ s to 4 seconds, 5ns resolution
External	Repetition rate < 1 MHz Trigger Prescaler: 1 to $2^{16}-1$ Trigger level, from 0.1 to 5V / 50 $\Omega$ Trigger slope: Positive or negative Minimum trigger delay < 60 ns

Software Command (From interface control)

<b>Trigger mode</b>	Single, repetitive or burst
Burst specs.	Pulse number: 2 to $2^{16}-1$ Period: 1 $\mu$ s to 1s, 5ns resolution

**Output T0** 5 V / 50  $\Omega$ , 200ns to 10 $\mu$ s width

#### Output T1 to T4

Amplitude	2 to 5 V, 0.1 V resolution / 50 $\Omega$
Width	100 ns to 10 $\mu$ s, 5 ns resolution
Rise / fall time	< 2 ns / 5 ns
Connector	MCX on board

#### External time base (CLK IN)

Frequency 10 or 80 MHz

#### Clock output

Frequency 10 MHz, +/- 1 V, square

#### Gate input

Threshold 1.5 V

2 settings: Global or individual channel

Gate source Active high, Rep rate < 100KHz

#### Store/Recall Mode

Up to 4 sets of parameters can be stored or recalled

#### General specifications

Size 176 x 128 x 35 mm

Power 50W (+12V, +5V)

#### Interface control

Ethernet, Internet or USB.

**Option 1:** 4 auxiliary delay channels (T5 to T8)

#### Delay

Channels: 4 independent delay outputs

Range: 0 to 20 seconds

Resolution: 1.25 ns

Jitter < 50 ps rms + delay x  $10^{-7}$  (external trigger to any output)

Accuracy: 1 ns + delay x  $10^{-7}$

#### Output

Amplitude: 2 V to 5 V (common tuning)/ 50  $\Omega$

Width: 100 ns to 10ms

Rise and fall time < 5 ns

**Option 2:** External Time base = 80MHz