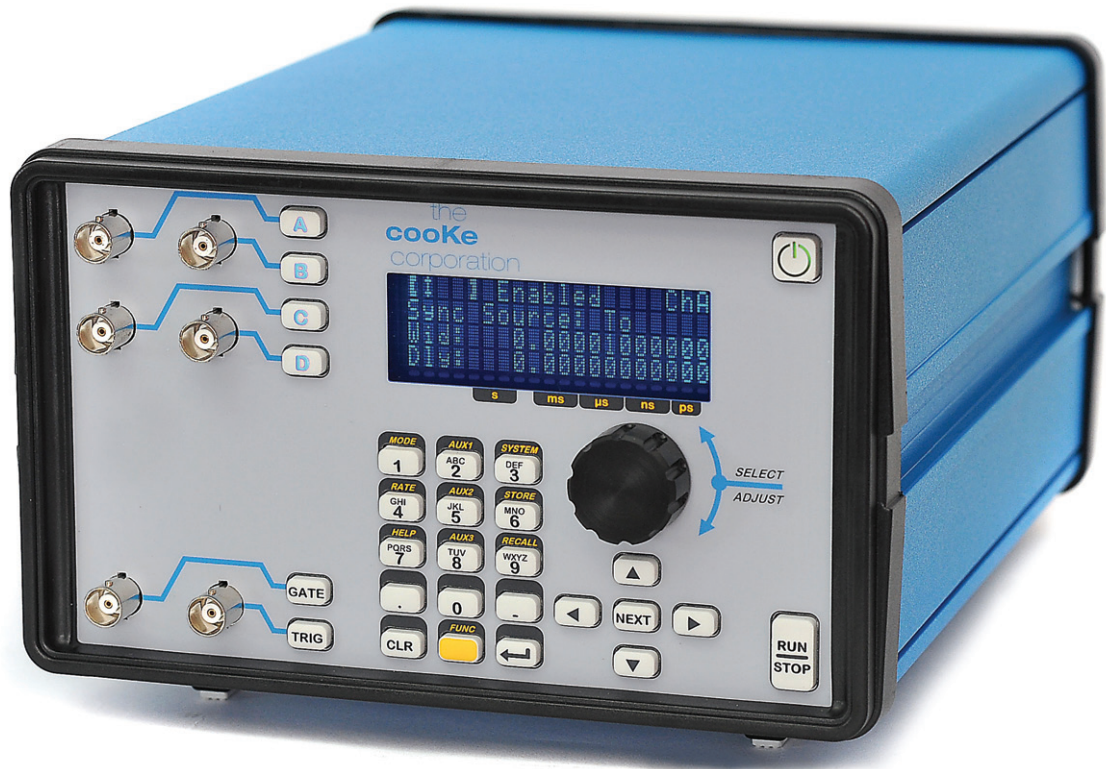


# PALSEQ model 504

## precision pulse generator/ sequencer

- 4-channel TTL/CMOS & adjustable outputs
- range: delay 0 – 1000s, width 10ns – 1000s
- 250ps timing resolution with 50ps jitter
- configuration storages – 12 memory slots
- RS232 serial & USB interfaces
- dual inputs, 1 trigger / 1 gate
- external clock In/Out 10 – 100 MHz
- complimentary LabVIEW™ drivers



# PALSEQ model 504

## precision pulse generator/ sequencer

The PALSEQ Model 504 is a 4-channel precision pulse generator/sequencer providing pulse generation & synchronization of multiple pulses & triggers. Although specifically designed for use with the PALFLASH 501 Flash Light Source & the pco line of high speed imaging camera systems the Model 504 is versatile enough for a wide variety of applications requiring the generation and synchronization of multiple pulses and triggers. The Model 504 provides four independent digitally controlled channels with width, delay, rate, amplitude and mode programming that are able to integrate different devices such as high speed cameras with illumination.

The Model 504 precision pulse generator/sequencer offers dual inputs, functioning as trigger/gating or optional dual triggers through BNC connectors and is equipped with USB and RS-232 connectivity for remote programmability. Complimentary NI certified LabVIEW™ drivers included.

Additional features include an Increment option that provides incrementing delay times and pulse widths after each trigger or internal burst count; Internal Clock-Divider functions allow differing rates on all four channels; Illuminated On - backlight illumination on each enabled channel; and Clock-In functionality providing synchronization using a master clock from 10 MHz - 100 MHz.



Palseq Model 504 Rear Panel showing USB/RS232 and Clock In/Out

# system specifications

## internal rate generator

rate	0.0002 Hz to 10,000 MHz
resolution	10ns
accuracy	same as time base
jitter	50ps
settling	1 period
burst mode	1 to 9,999,999 pulses
timebase	100 MHz, low jitter PLL
oscillator	50 MHz, 25ppm
output modes	single pulse, burst, duty cycle,
system	continuous
control modes	internal rate generator, external trigger, external gate

## programmable timing generator

output modes	single shot, burst, duty cycle,
channel	continuous
control modes	internally triggered, externally triggered and external gate each channel may be independently set to any of the modes
output multiplexer	any/all channels may be multiplexed to any/all outputs
delayed output	0 to 9,999,999 pulses
timebase	same as internal rate generator
delays	
range	0 – 1000s
accuracy	1ns + 0.0001 x delay
resolution	250ps

## system external trigger/gate input

trigger input	
function	generate individual pulses, start a burst or continuous stream
rate	DC to 1/(200ns + longest active pulse)
slope	rising or falling
behaviour	used to control the internal rate generator
insertion delay	< 200ns
gate input	
function	pulse inhibit or output inhibit
polarity	active high/active low
behaviour	used to control the internal rate generator or any of the individual channels
pulse inhibit	120ns
output inhibit delay	50ns

# module specifications

## TTL/adjustable dual channel output module

output Impedance 50 $\Omega$

## TTL/CMOS mode

output level 4.0V typ into 1 k $\Omega$

rise time 3ns typ TTL

slew rate > 0.5 V/ns TTL

jitter 50ps RMS

## adjustable mode

output Level 2.0 to 20 VDC into 1k $\Omega$

1.0 to 10VDC into 50 $\Omega$

output resolution 10mV

current 200mA typical, 400 mA max  
(short pulses)

overshoot <100mV + 10% of pulse

## standard features/functions

communication USB/RS232

external clock in/out 10 MHz – 100 MHz  
user selectable in  
discrete values

configuration storage 12 configurations.  
automatically saves  
current configuration on  
front panel power down.

## optional feature

optical output for use with dicam pro &  
hsfc pro cameras

## ordering Information

PALSEQ model 504, 4-channel pulse generator/  
sequencer, 100 – 240VAC, 50/60Hz, 3A max., complete.

## contact

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