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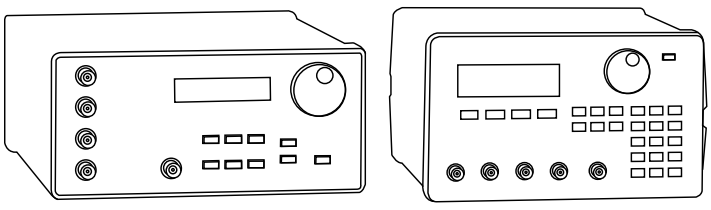
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FAST

BNC

Low Jitter Digital Delay & Pulse Generators





The 505 + 565 Performance • Versatility • Affordability

BNC models 505/565

THE 505 + 565 LOW JITTER DIGITAL DELAY & PULSE GENERATORS

The Models 565 and 505 expands the boundaries of pulse generator and digital delay capabilities. They provide up to 8 independent pulse generator outputs or up to 16 digital delay generator edges in one instrument. As a pulse generator, it provides rate, delay, width and output adjustability with each of the channels. As a digital delay generator, with fine resolution timing, it provides multiple pulses from an external, internal or software trigger.

The outputs are synchronized to one another with a coherence of 250 ps and 5 ns respectively. A channel's timing can be referenced to any other channel or to T_o, the zero delay point. These edges are adjustable in 500 ps steps or 100 ns respectively. Channels can be selectively gated and enabled/disabled. Any channel can be a submultiple (divide by n) of any other channel. The burst mode allows an independent number of bursts for any channel. Each channel possesses separate output level and polarity characteristics. The units comes with USB, GPIB and/or RS232 programming and the ability to store several complete sets of parameter settings for future recall. The 565 allows combining the timing of several channels onto any other channel so one can generate complex patterns such as barcodes and complex control signals.

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505 & 565 > SOME OF THE MANY FEATURES

- Single cycle by pushbutton or trigger >>> One pulse with each pushbutton, internal, external or software trigger
- Iinternal rate generator >>> Period adjustment provides finer resolution than pure rate
- Delay and width with each channel >>> No longer need to combine two channels to generate widths
- Store inside the instrument –complete setups >>> Recall – for recurrent testing configurations
- Programmability with RS232, GPIB and USB >>> The 505 has RS232; the 565 has RS232, GPIB and USB

CHANNEL PROPERTIES > PROVIDES ADDITIONAL TIMING MODES

- Burst – each channel can have a separate number >>> Burst is selectable on a channel-by-channel basis
- Duty cycle -N pulses on, M pulses off >>> Duty cycle is selectable on a channel-by-channel basis
- Divide by n – a pulse every n master pulses >>> By using the duty cycle mode
- Gate – an external signal enables pulses >>> Channels can be selected to respond to or ignore the gate
- Combine - several channels >>> Selectively sum the timing of several channels onto one channel



MODEL 505

100NS RESOLUTION • 5 NS CHANNEL-TO-CHANNEL JITTER

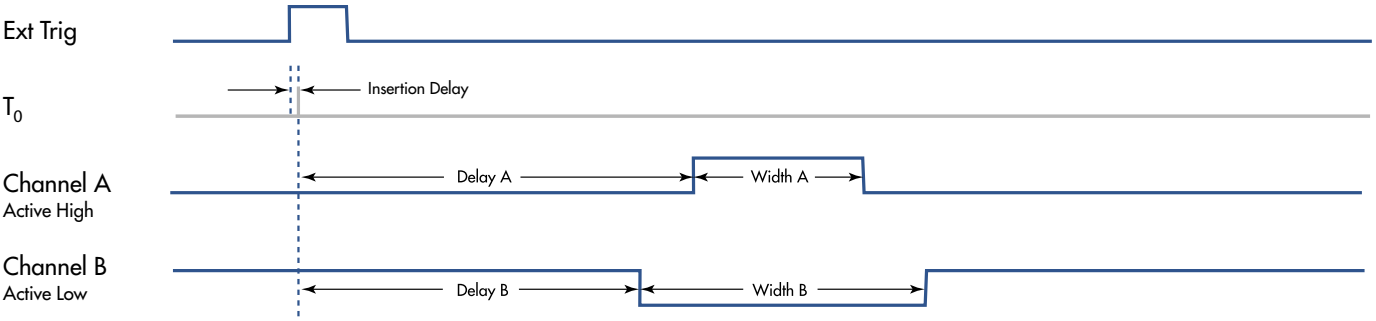


MODEL 565

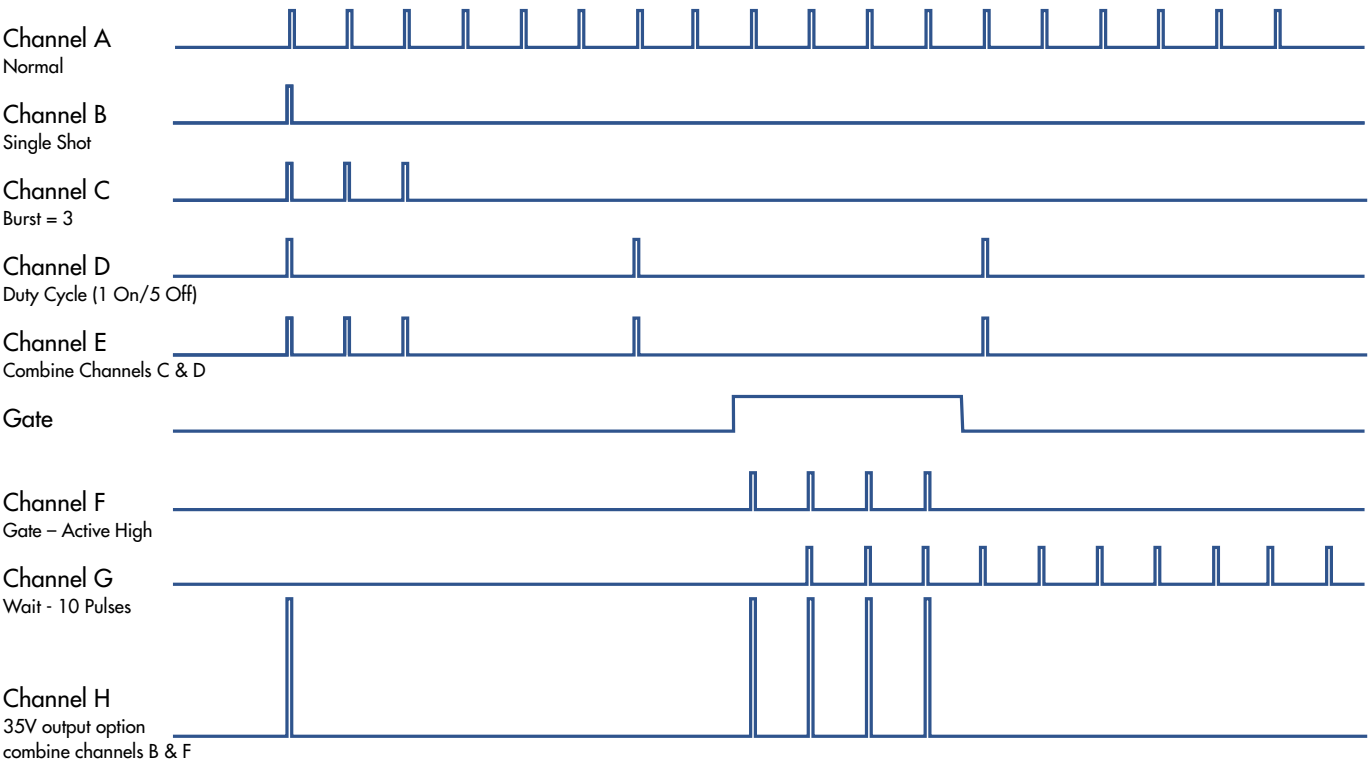
500PS RESOLUTION • 250 PS CHANNEL-TO-CHANNEL JITTER

- SYNCHRONIZE, TRIGGER, DELAY AND GATE MULTIPLE EVENTS
- MULTIPLE CHANNELS WITH INDEPENDENT CHANNEL PROPERTIES
- INDEPENDENT BURST, GATE, OUTPUT CHARACTERISTICS
- EACH CHANNEL WITH BOTH DELAY AND WIDTH CONTROL

DIGITAL DELAY USING EXT TRIG



CONTINUOUS RATE CHANNELS IN SEPARATE MODES



Low Jitter Digital Delay & Pulse Generators

BNC

	MODEL 565	MODEL 505
CONFIGURATION	2, 4 or 8 channels of delays and widths per instrument	4 or 8 channels of delays and widths per instrument

TIMING DELAYS AND WIDTHS

delay	0 to 1000 seconds with 500 ps resolution	0 to 1000 seconds with 100 ns resolution
width	10 ns to 1000 seconds with 500 ps resolution	100 ns to 1000 seconds with 100 ns resolution
accuracy	1 ns + 0.0001 x time	10 ns + .0001 delay
time base	100 MHz, 25 ppm crystal oscillator	50 MHz, 50 ppm crystal oscillator
RMS Jitter	250 ps	< 5 ns
TRIGGER MODES	Continous, External Trigger, External Gate, Single Shot, Burst, Duty Cycle	

EXTERNAL TRIGGER/GATE

rate	0 to 5 MHz	0 to 2 MHz
insertion delay	< 150ns	< 250ns
threshold	200 mV - 15 V	200 mV - 15 V
trigger slope	Rising or falling edge, selectable	Rising or falling edge, selectable
gate	Active low or active high, selectable	Active low or active high, selectable
impedance	1000 ohms	1000 ohms

INTERNAL REP RATE GENERATOR

rate	0.01 Hz to 5 MHz	0.01 Hz to 2 MHz
accuracy	1 ns + 0.0001 x period	5 ns + 0.0001 x period
RMS jitter	250 ps	< 500 ps
burst mode	1 to 1000000 pulses	1 to 1000000 Pulses
SINGLE SHOT	Pushbutton provides a single trigger	Pushbutton provides a single trigger
BURST	Any channel may provide a burst of pulses at the internal rate. The number of pulses may differ from channel to channel.	
DUTY CYCLE	This mode allows the timing events to be ON for M pulses and then OFF for N pulses. Divide by n can be achieved by setting M to 1 and N to (n-1).	
OUTPUTS	Selectable, a fixed amplitude TTL/CMOS or adjustable level to 12 V, Optional 35 V output	Adjustable to 20 V
IMPEDANCE	50 ohm	50 ohm

ADJUSTABLE AMPLITUDE

slew rate	>.2 V/ns	>.2 V/ns
amplitude	1 V - 6 V into 50 ohm load 2 V - 12 V into high impedance	1 V - 10 V into 50 ohm load 2 V - 20 V into high impedance
peak current	150 mA per channel	150 mA per channel
average current	200 mA ave.(total for all channels)	200 mA ave.(total for all channels)
polarity	Positive (active high) or Negative (active low)	Positive (active high) or Negative (active low)

TTL / CMOS

transition time	< 5 ns	n/a
amplitude	4 V nominal	n/a

COMPUTER INTERFACE

RS232	4800, 9600, 19200 & 38400	4800, 9600, 19200 & 38400
IEEE 488	Standard	n/a
USB	Standard	n/a

MODEL SELECTION

model 565-2C	2 Channels	n/a
model 565-4/505-4C	4 Channels	4 Channels
model 565-8/505-8C	8 Channels	8 Channels
OPTIONS	35 V High Voltage Outputs	n/a
ACCESSORIES	19" Rack Mount Extended service/calibration agreements available	19" Rack Mount Extended service/calibration agreements available

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