PICOSECOND PULSE LABS®

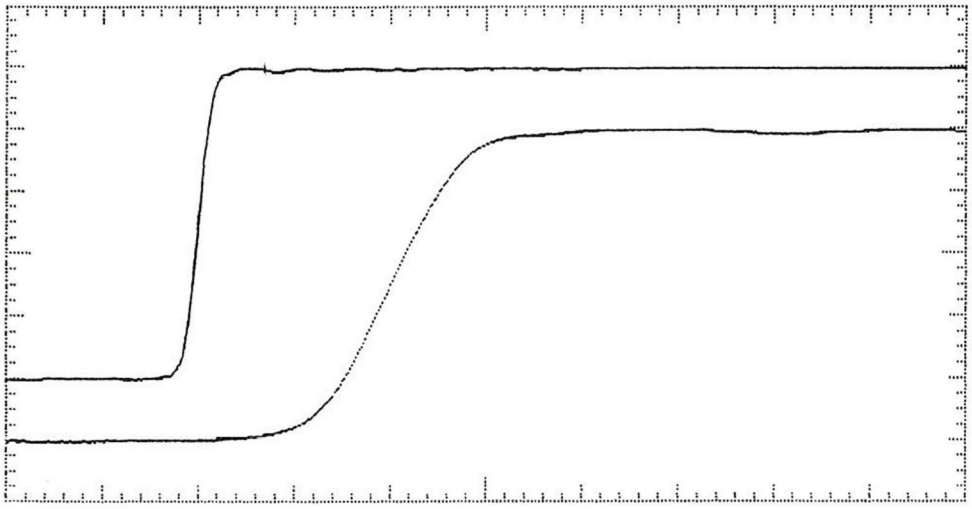
MODEL 2700C

STEP GENERATOR

CALIBRATION	STANDARD
FAST RISE	300 PS
HIGH AMPLITUDE	50 V
LOW JITTER	3.5 PS

The PSPL model 2700C Step Generator produces fast, clean, flat, 50V, 200 ns, step function pulses. The transition duration time (10%-90% risetime) is 300 ps. The topline perturbations are less than +-1%. The amplitude can be adjusted over a 69 dB range in 1 dB steps. This is a complete instrument with built-in power supplies, rep. rate clock and trigger circuits. The trigger delay is adjustable from 0 to 110 ns in 10 ns steps with an extremely low jitter of 3.5 ps rms. The 2700C is in a rack mount cabinent.

There are many applications for the 2700C. The most popular is as a Calibration Standard for determining the step response of oscilloscopes. Other applications include: semiconductor switching time testing, coaxial cable testing, driver for laser diodes, and EMP simulators.



10 V/div. 1 ns/div. & 200 ps/div.

PSPL model 2700C, 50 V pulse waveform as measured by HP-54121A, 17.5ps rise, digital sampling oscilloscope. Pulse was attenuated by 46 dB using PSPL model 5510-6dB, & (2) 5510-20dB SMA attenuators.

P.O. BOX 44, BOULDER, COLORADO 80306, USA (303)443-1249 1/89

P I C O S E C O N D P U L S E L A B S , I n c .

M O D E L 2 7 0 0 C S T E P G E N E R A T O R

PARAMETERS: (see notes 1,2 & 3)	Nominal	Limits
AMPLITUDE (into 50 Ohms):	50 V	+- 2 V
POLARITY:	Positive	
BASELINE:	0 V	
1st TRANSITION DURATION: <3> (10%-90% risetime)	300 ps	350 ps max.
STEP DURATION:	200 ns	+- 5 ns
PRECURSOR:	< +- 0.3 %	+- 0.5 % max.
OVERSHOOT:	0.5 %	1 % max.
TOPLINE PERTURBATIONS: (t < 2 ns)	+- 0.5%	+- 1 % max.
TOPLINE FLATNESS: <2>		
(2ns < t < 150 ns)	+- 0.5%	+- 1 % max.
(150ns < t < 200ns)	- 1 % sag	- 2 % sag
2ed TRANSITION DURATION: (90%-10% falltime)	30 ns	no limit
SOURCE IMPEDANCE:	50 Ohms nominal	
REFLECTION COEFFICIENT:	- 25% (vswr= 1.7:1)(during pulse)	
note: vswr improves with attn.	+ 50% (vswr= 3.0:1) (after pulse)	

ATTENUATOR: 0 to 69dB in 1dB steps, DC-4GHz, 50 Ohms, vswr < 1.2, 2W. Accuracy: +-0.3dB for 1-10dB to +-0.8dB at 60dB. Waveform does not change with attenuation.

NOTE <1>: Measured with HP-54121A (17.5ps rise) digital sampling scope and (2) PSPL model 551020dB SMA attenuators. 2700C PRR = 10 kHz.
NOTE <2>: The topline flatness is measured by comparing the transient responses of the test HP-54121A scope when measuring an attenuated (40dB) model 2700C, 200 ns step and a 0.5 V, 200 ns step from a PSPL model 6110, NBS type Reference Flat Pulse Generator.
NOTE <3>: Calibrations valid only for std. lab. temperature of 20-25°C.

TRIGGER OUTPUT & TIMING:
Amplitude: 10 V into 50 Ohms.
Waveform: Exponential.
1st Trans. (rise): 1.5 ns
Duration: 9 ns
Delay (trig in/out): 15 ns
(trig out/step): 0 to 110 ns
adjustable in 10 ns steps.
Jitter: 3.5 ps rms max.
Rep. Rate: 10 kHz to 1 Hz in 4 ranges with 0.1 to 1 vernier.
Ext. Trig. Input: >1.5V, + slope.

GENERAL:
Power Req.: 100, 115 or 230 Vac 50/60 Hz,21W (50Hz), 15W (60Hz)
Controls: Power, Rep. Rate/ Ext. Trig., Rep.Rate Vernier, Single Pulse, Delay & Attenuation.
Connectors:
50 V Step Pulse Out -- SMA
Trig. In/Out -- BNC
Dimensions: 3.5" x 17" x 13"
Weight: 13 lbs.,18 lbs. shipping.

ACCESSORIES: Power cord, manual, front handles & rack mount brackets.
CALIBRATION: Test report with waveforms is furnished. NBS traceable. Calibrations are also available directly by NBS,Boulder,CO.
WARRANTY: One year. See PSPL Terms of Sale for details.

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