EPG-LAB

EPG-LAB-30ps

Electrical Pulse Generator

The EPG-LAB-30ps is a triggerable Electrical Pulse Generator with adjustable output power delivering adjustable pulses. It comes in a compact and robust enclosure for stable operation over time.
The EPG-LAB-30ps is designed to generate short, high quality electrical pulses that are precisely adjustable from 30 ps to 100 ps. A high bandwidth RF amplifier is embedded with this module to deliver output pulse voltages suitable for driving $LiNbO_3$ modulators. Both the width of the pulses and the output peak power are controlled by means of a provided Graphical User Interface.
The EPG-LAB-30ps is externally triggerable for single pulse generation up to a maximum operating pulse repetition frequency of more than 3.5 GHz.

The Exail LAB modules are the LAZ-LAB, Mod-LAB, OPP-LAB, MBC-LAB and the EPG-LAB.
Our family of reliable matching modules each offer a functionality that can be used in your lab.
Our aim is to provide a cost effective and versatile solution with ease of assembly to answer your complex signal generation requierements.

FEATURES

- Fast rise and fall times
- Embedded RF amplifier
- Fully controllable through GUI
- OEM integrated module

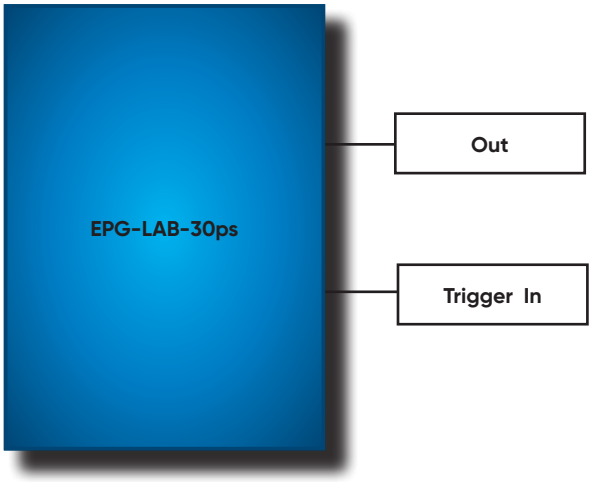
APPLICATIONS

- Single photon source
- Short and programmable pulse laser

PERFORMANCE HIGHLIGHTS

Parameter	Nominal
Pulse width	30 ps - 100 ps
Frequency repetition rate	Single shot to 3.5 GHz
Pulse amplitude	Up to 6.5 V
Rise & fall times	15 ps

FUNCTIONAL BLOCK DIAGRAM



The EPG-LAB-30ps integrates:

- an electronic circuitry to generate clean and fast electrical pulse from 30 ps to 100 ps
- an RF amplifier to deliver pulse peak output voltage up to 6.5 V_{pp}

Both the width of the pulses and the output peak power are controlled by means of a provided Graphical User Interface.
Using the trigger input port, the EPG-LAB-30ps is externally triggerable for single pulse generation up to a maximum operating pulse repetition frequency of more than 3.5 GHz.

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ELECTRICAL INPUT SPECIFICATIONS

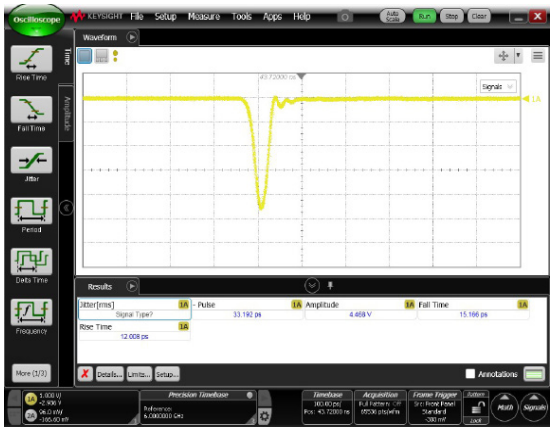
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Trigger impedance	-	-	-	50	-	Ω
Trigger voltage	-	TTL	0	-	2	V
Trigger frequency	-	-	Single shot	-	3.5	GHz
Trigger slew rate [1]	-	-	100	-	-	V/µs
Power supply	DC	-	9	12	15	V

[1] For lower slew rate, the added jitter will increase.

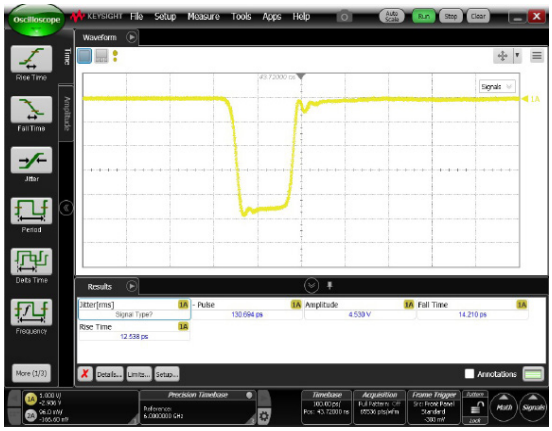
ELECTRICAL OUTPUT SPECIFICATIONS

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Pulse type	-	-	Negative gaussian to square pulse			
Pulse width	-	-	30	-	100	ps
Rise/Fall time (20%-80%)	-	-	-	-	15/15	ps
Added RMS jitter	-	-	-	-	1	ps
Repetition rate	-	-	Single shot	-	3.5	GHz
Output impedance	Ω	-	-	50	-	Ohms
Amplitude [2]	MO	Adjustable	3	-	5	V
	HO	Adjustable	5	-	6.5	V

[2] Negative pulse.



30 ps output electrical pulse



130 ps output electrical pulse

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EPG-LAB-30ps

INTERFACES AND DIMENSIONS

	FRONT PANEL
RF input connector	Trigger IN - SMA Female - 50 Ω
RF output connector	OUT - «2.92 mm (K and SMA compatible)»
	REAR PANEL
Power supply (12V - 2A)	DC In - Jack male 2 mm
USB	USB - B type
Dimensions	220 mm x 220 mm x 52 mm

ENVIRONMENT

Parameter	Min	Typ	Max	Unit
Operating temperature	+15	-	+35	°C
Storage temperature	-20	-	+50	°C

ABSOLUTE MAXIMUM RATINGS

Parameter	Min	Typ	Max	Unit
Trigger input level	-	-	2	V
Power supply	-	-	18	V

ORDERING INFORMATION

MO: Middle Output pulse
HO: High Output pulse amplitude

EPG-LAB-30ps-□

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