

▪ **Fast Switching Pockels Cell Driver for SLR Laser System** ▪

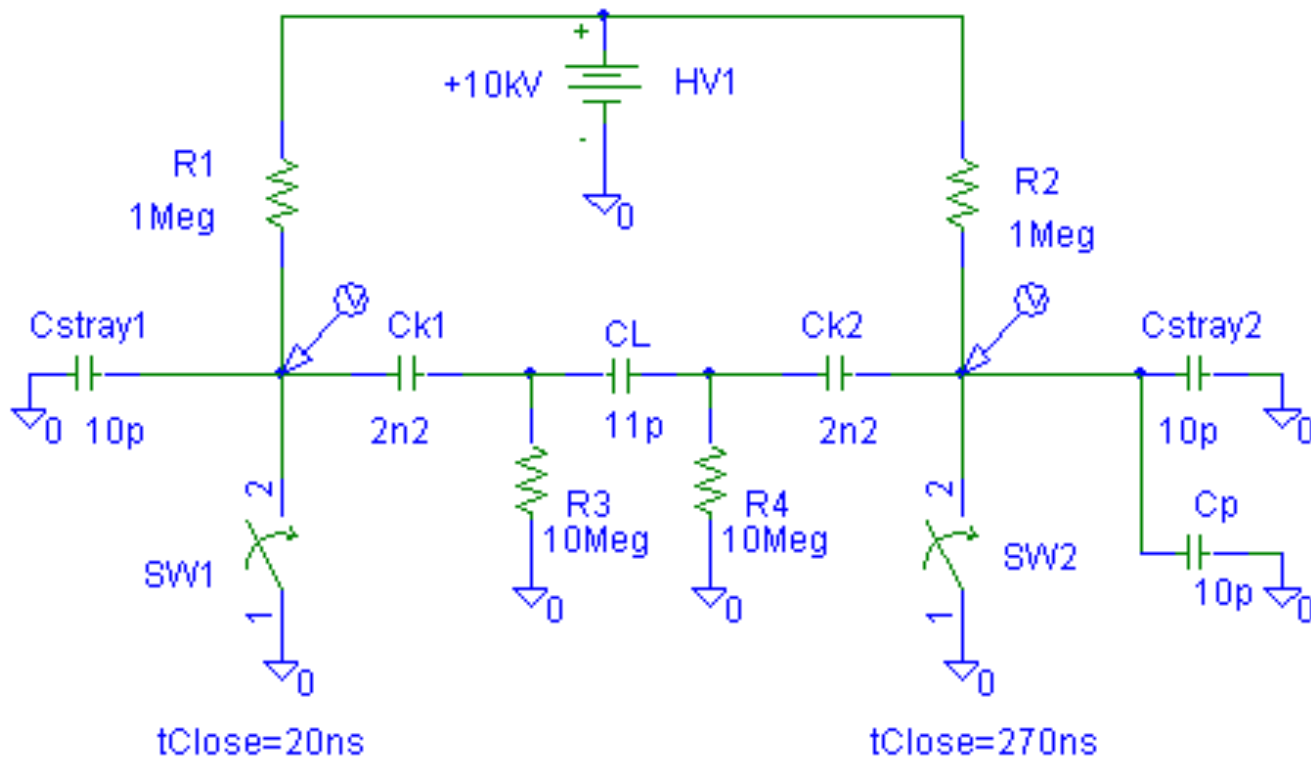
16th International Workshop on Laser Ranging
Wednesday, 15 October 2008
Session 8: “Lasers, Detectors, and Timers”

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▪ Requirements ▪

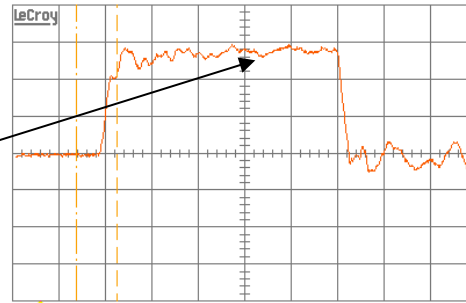
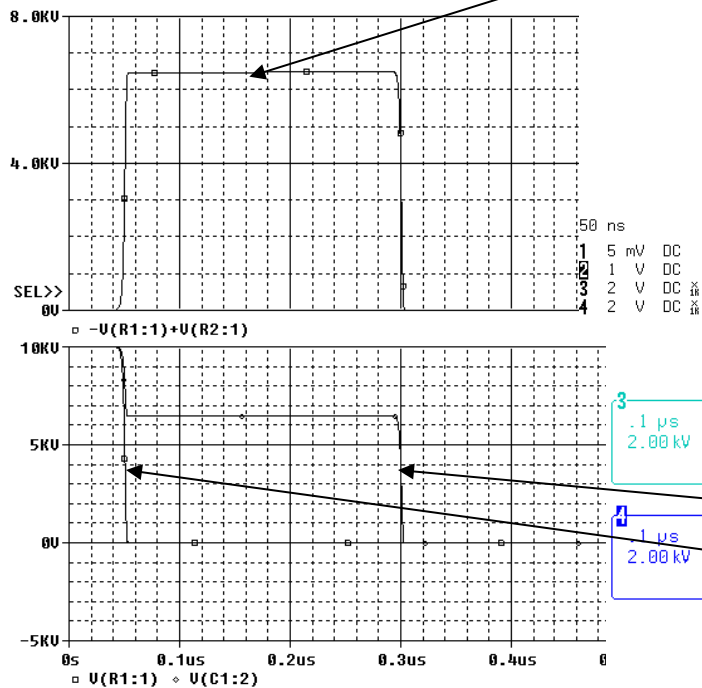
- Fast switching/transition (≤ 11 ns) of high voltage (10 kV) for Pockels cells with larger load capacitance (≤ 12 pF)
- Hence, more than one Pockels cell can be driven simultaneously
- Variable pulse width from 80 ns – 2.3 μ s
- Max. repetition rate of > 2 kHz, triggered by TTL input pulse
- RMS Jitter < 500 ps
- Typical quarter wave voltage of Pockels cell ≈ 9 kV

▪ Basic Circuit Topology ▪



• Circuit Analysis •

Spice Simulation



	average	low	high	sigma
F@level(4)	11.26 ns	6.07	18.20	5.50
Δt@lv(1,4)	--	--	--	--
Fall(3)	7.88 ns	7.63	8.21	0.14
rise(1)	--	--	--	--
rise(A)	8.68 ns	8.08	9.20	0.25

MEASURE

Parameters

mode

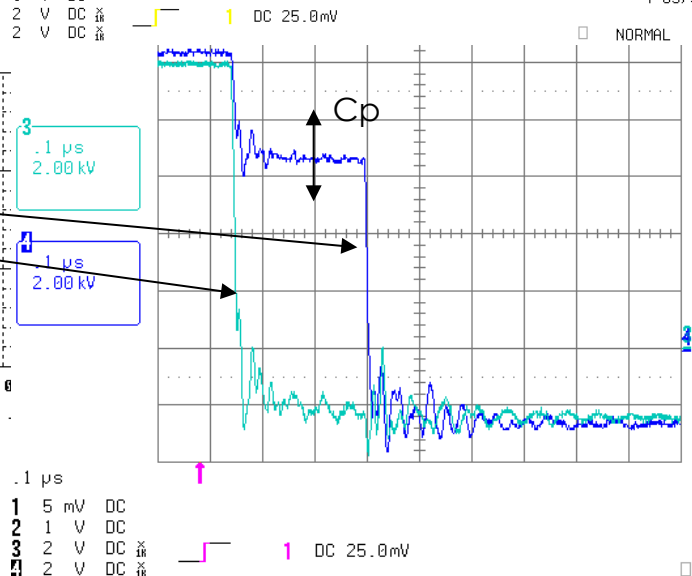
Std Voltage
Std Time
Custom
Pass
Fail

statistics
OFF On

CHANGE PARAMETERS

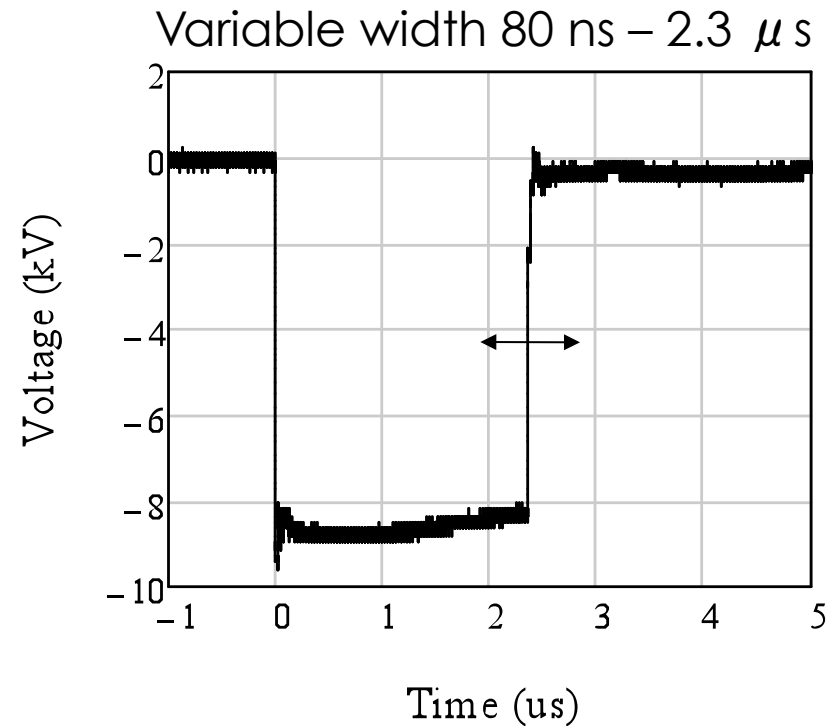
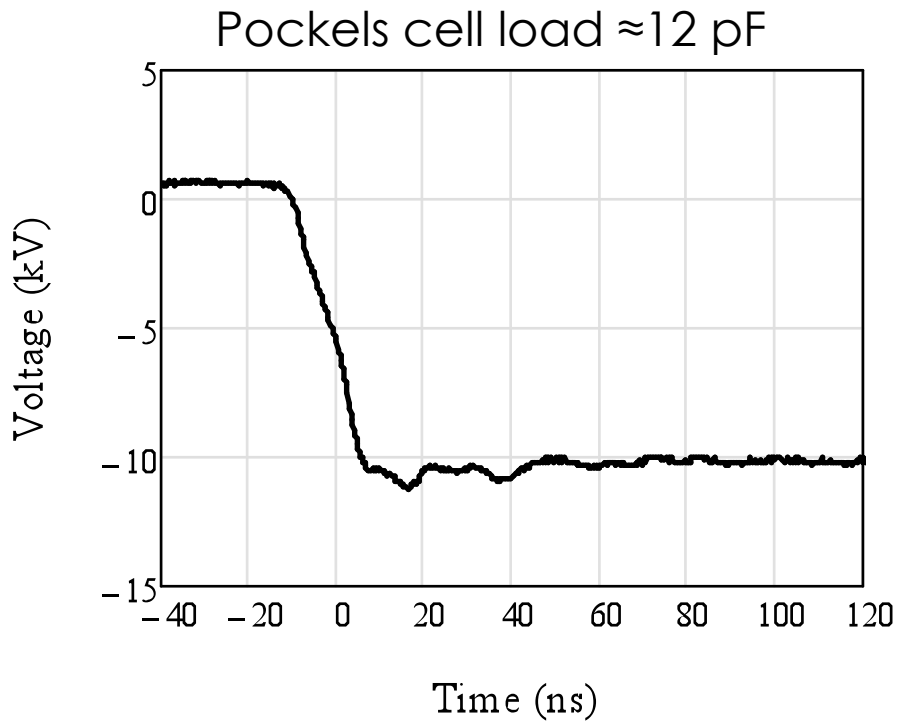
From
1.38 div
Track OFF On

to
2.24 div



Measurement

▪ Achievement ▪



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