

Test Report of PMP9387

(Buck with LM46002)

23 Apr. 2014



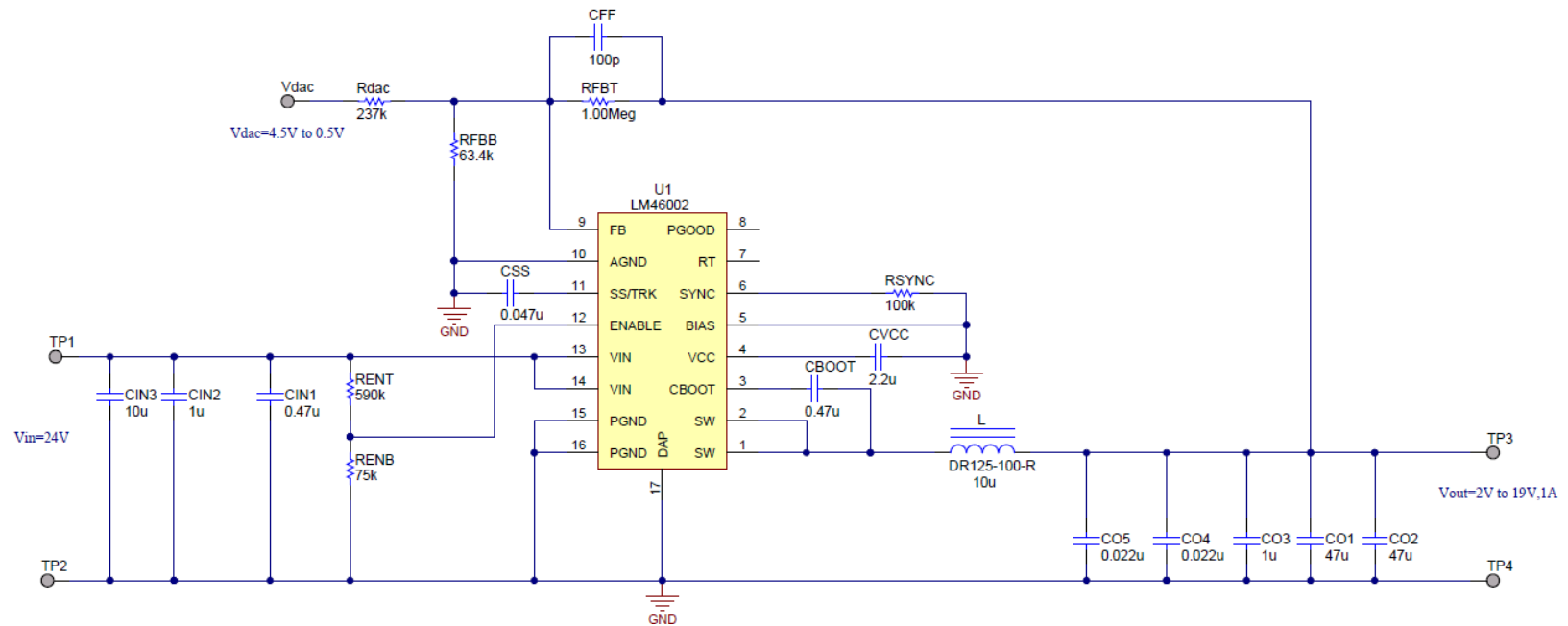
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1) Design Specifications

Vin	24Vdc
Vout_1	2Vdc, (Vdac=4.5V)
Iout_1	1A
Vout_2	10Vdc, (Vdac=2.5V)
Iout_2	1A
Vout_3	19Vdc, (Vdac=0.5V)
Iout_3	1A
Switching frequency	500k

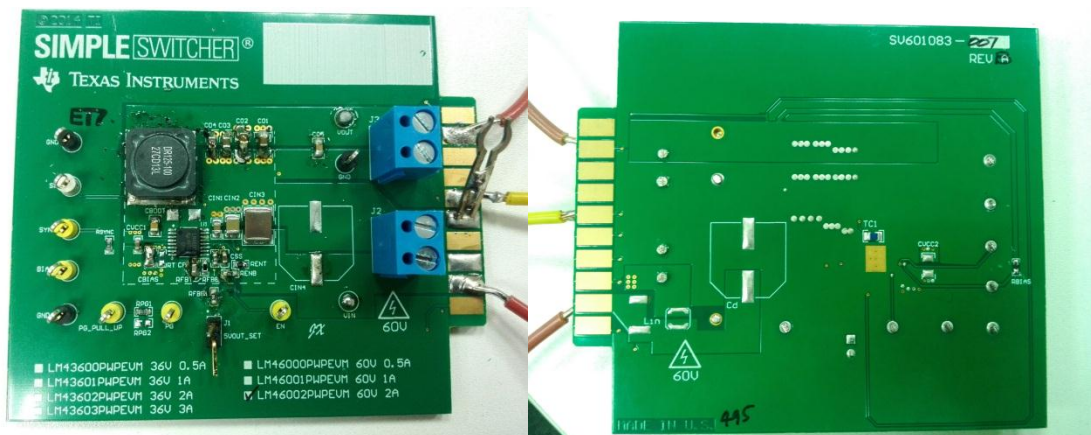
2) Circuit Schematic



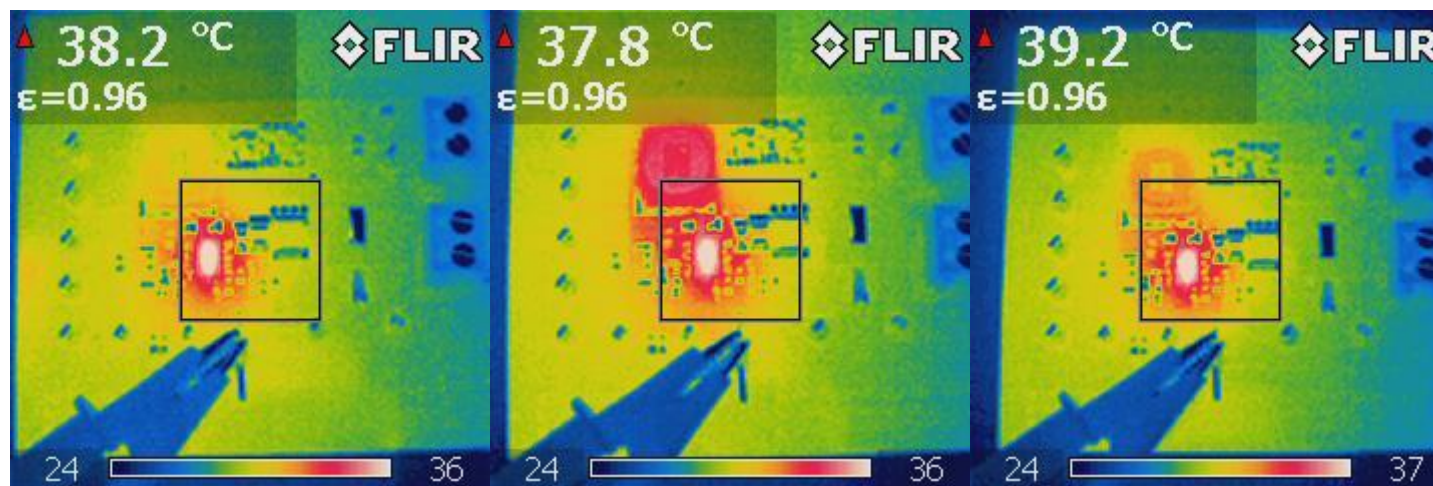
3) Typical Performances

3.1) Board and Thermal

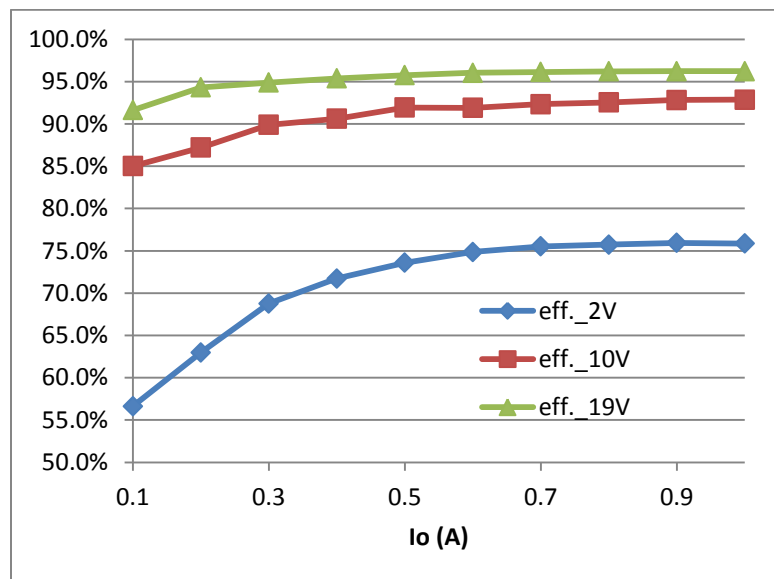
Board Dimensions: 80mm x 75mm

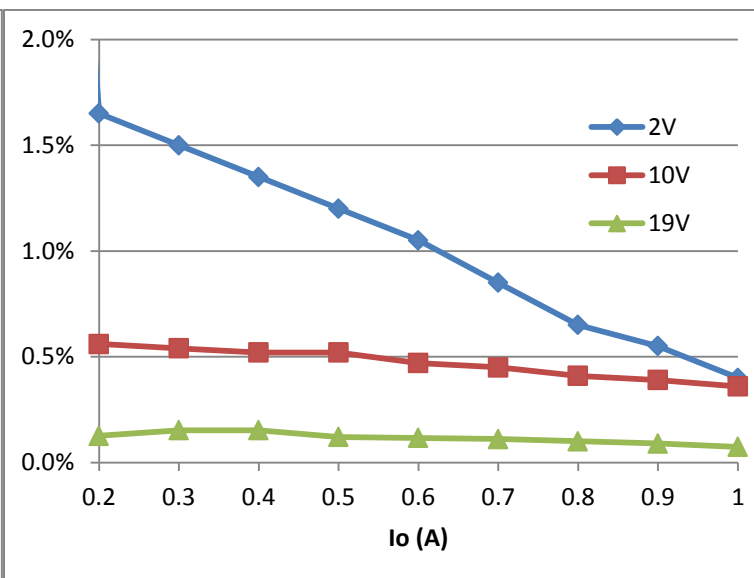
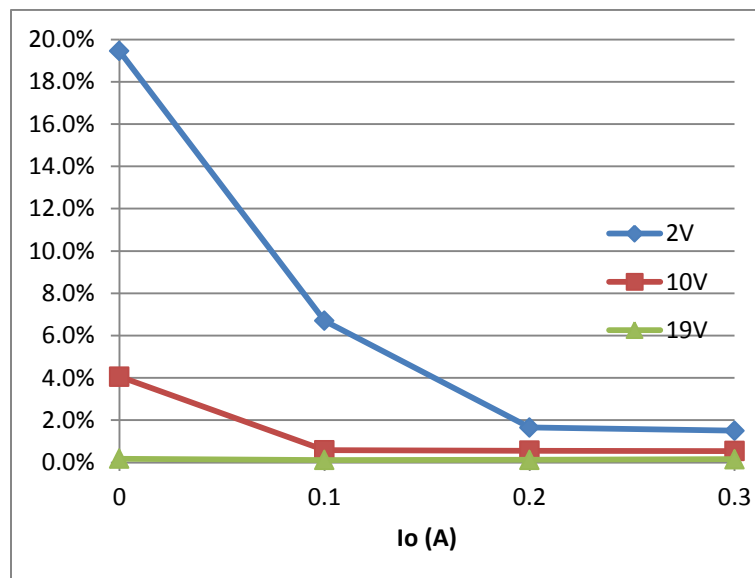


$V_{in} = 24V$, $V_{o_1}=2V$, $I_{o_1}=1A$ // $V_{o_2}=10V$, $I_{o_2}=1A$ // $V_{o_3}=19V$, $I_{o_3}=1A$



3.2) Efficiency and Output Voltage Regulation

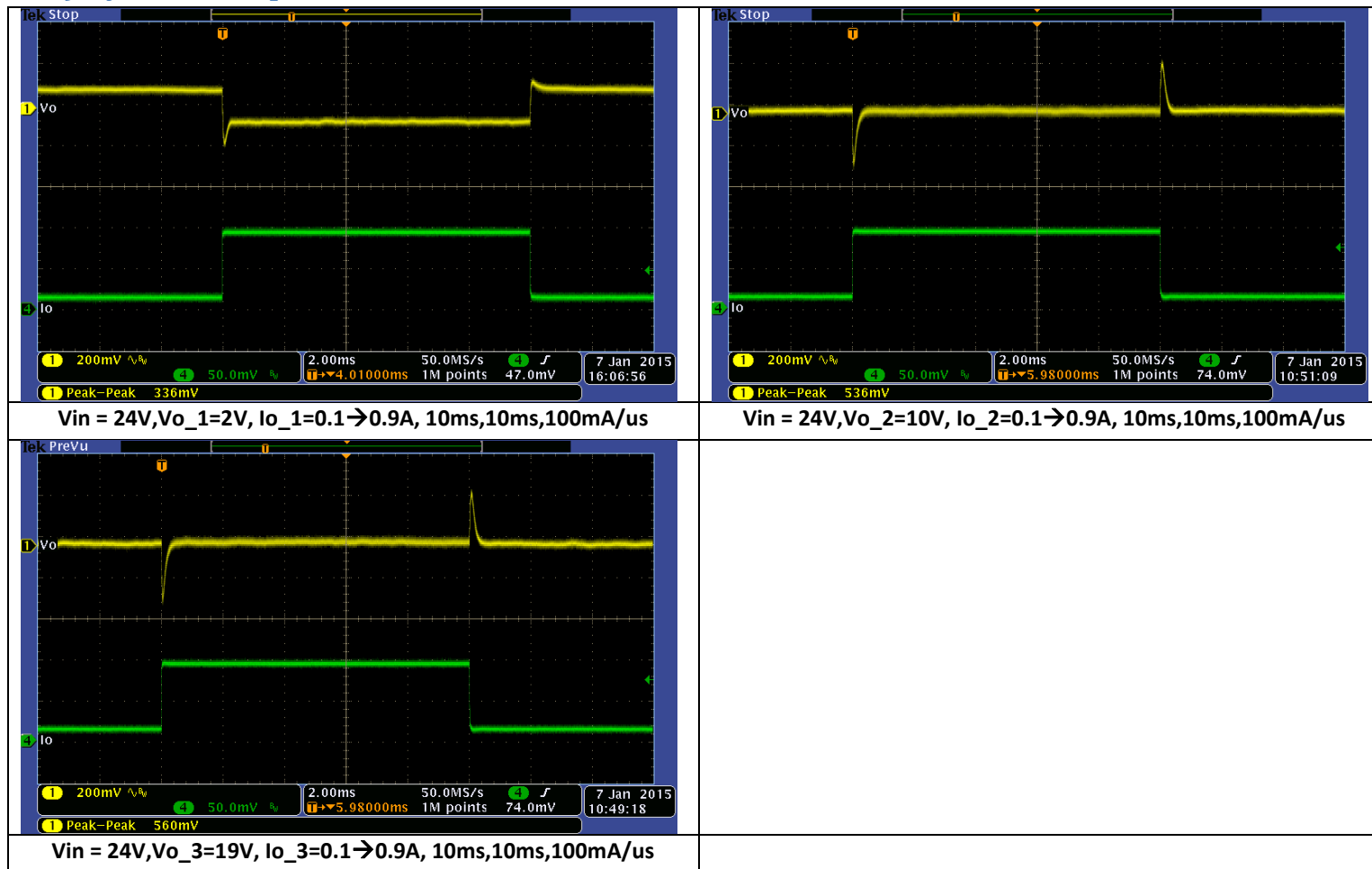




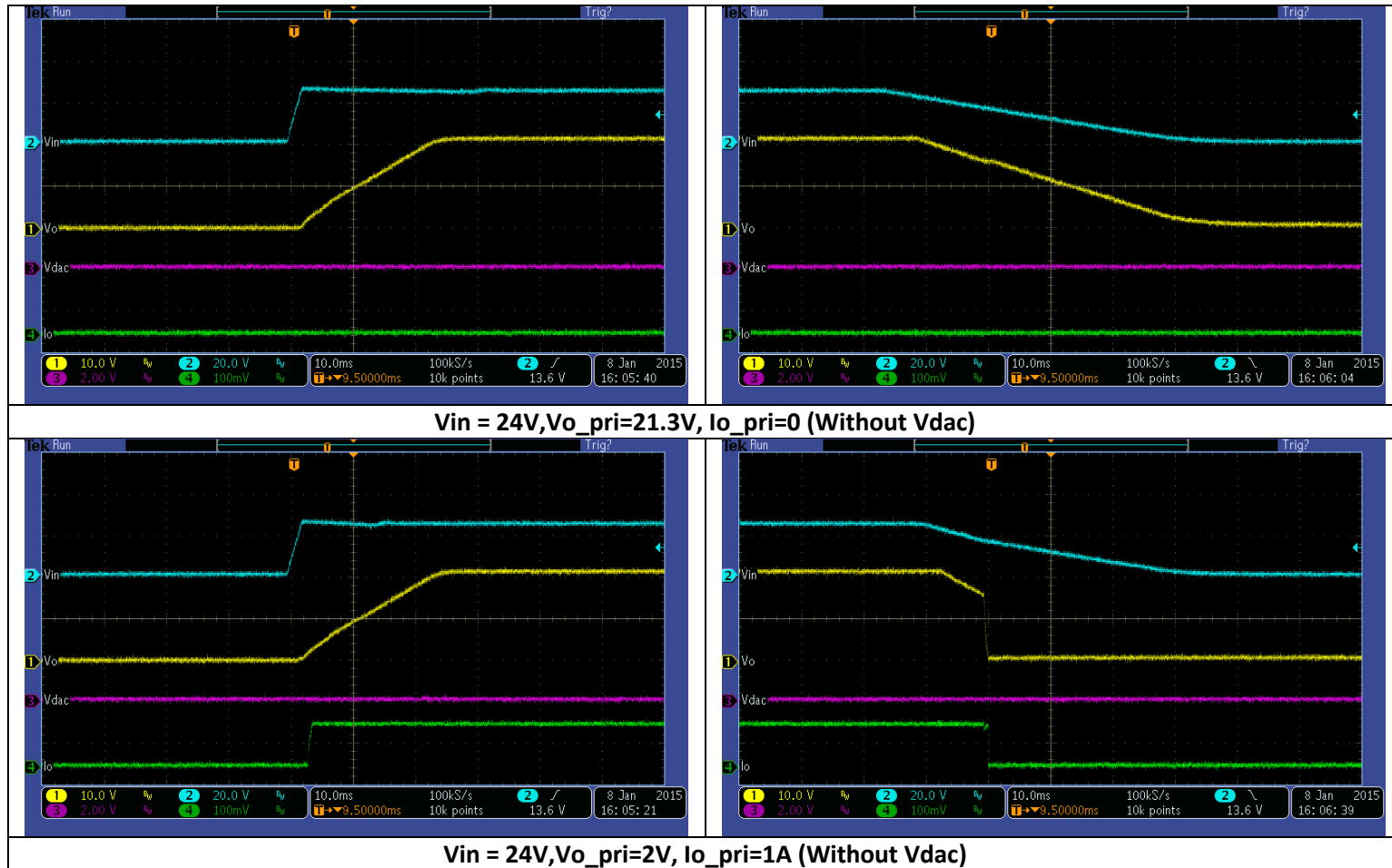
Vin	lin	Vo	Io	eff	Vo%
24	0.11m	2.389	0		19.5%
24	0.016	2.134	0.1	56.6%	6.7%
24	0.027	2.033	0.2	63.0%	1.7%
24	0.037	2.030	0.3	68.8%	1.5%
24	0.047	2.027	0.4	71.7%	1.4%
24	0.057	2.024	0.5	73.6%	1.2%
24	0.068	2.021	0.6	74.9%	1.1%
24	0.078	2.017	0.7	75.5%	0.8%
24	0.089	2.013	0.8	75.7%	0.6%
24	0.099	2.011	0.9	75.9%	0.6%
24	0.110	2.008	1	75.9%	0.4%

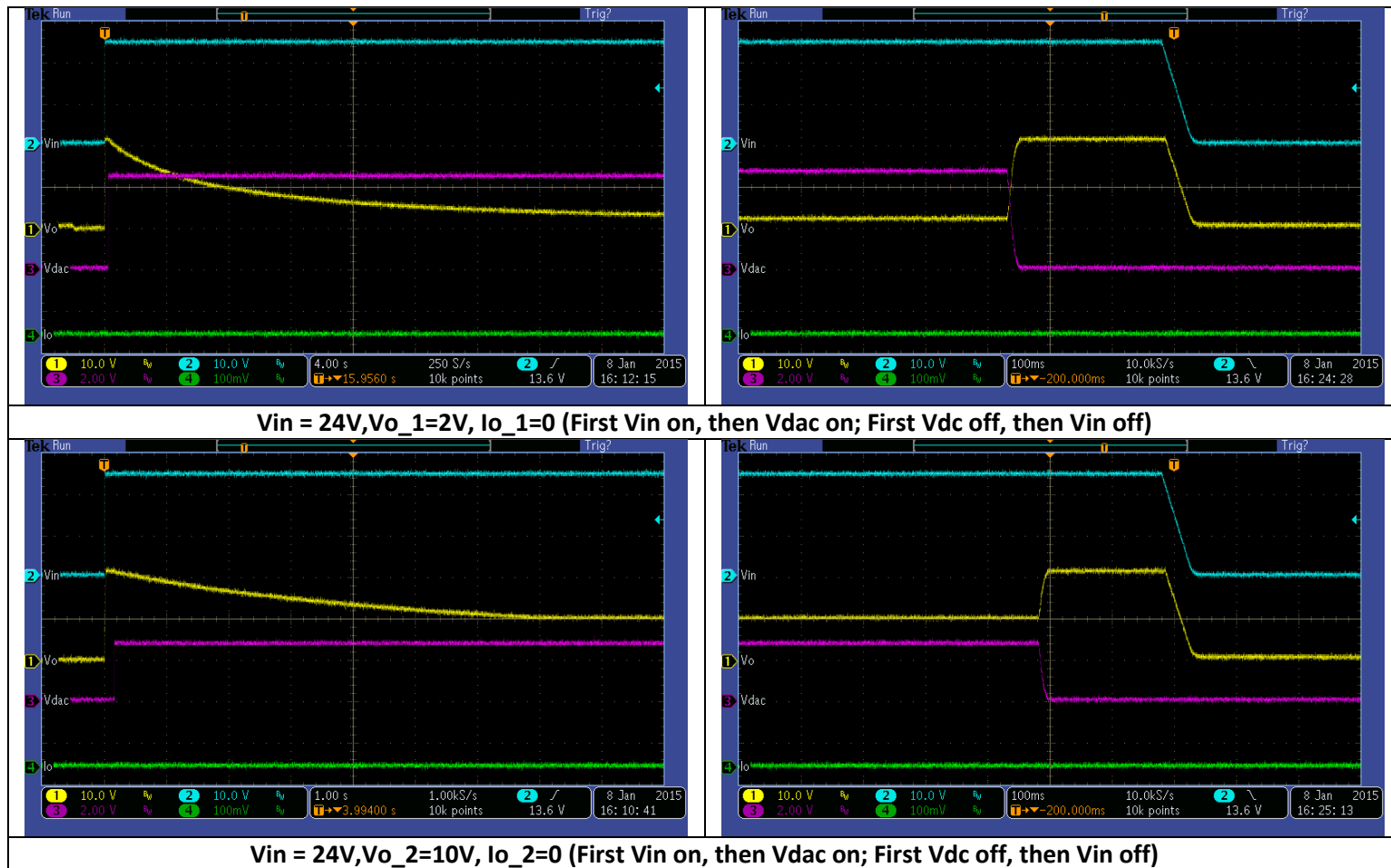
24	0.12m	10.406	0		4.1%
24	0.049	10.058	0.1	85.0%	0.6%
24	0.096	10.056	0.2	87.2%	0.6%
24	0.140	10.054	0.3	89.9%	0.5%
24	0.185	10.052	0.4	90.6%	0.5%
24	0.228	10.052	0.5	91.9%	0.5%
24	0.273	10.047	0.6	91.9%	0.5%
24	0.317	10.045	0.7	92.3%	0.4%
24	0.362	10.041	0.8	92.5%	0.4%
24	0.406	10.039	0.9	92.8%	0.4%
24	0.450	10.036	1	92.9%	0.4%
24	0.16m	19.034	0		0.2%
24	0.087	19.023	0.1	91.6%	0.1%
24	0.168	19.024	0.2	94.3%	0.1%
24	0.251	19.029	0.3	94.9%	0.2%
24	0.333	19.029	0.4	95.4%	0.2%
24	0.414	19.023	0.5	95.8%	0.1%
24	0.495	19.022	0.6	96.0%	0.1%
24	0.577	19.021	0.7	96.1%	0.1%
24	0.659	19.019	0.8	96.2%	0.1%
24	0.741	19.017	0.9	96.2%	0.1%
24	0.823	19.014	1	96.2%	0.1%

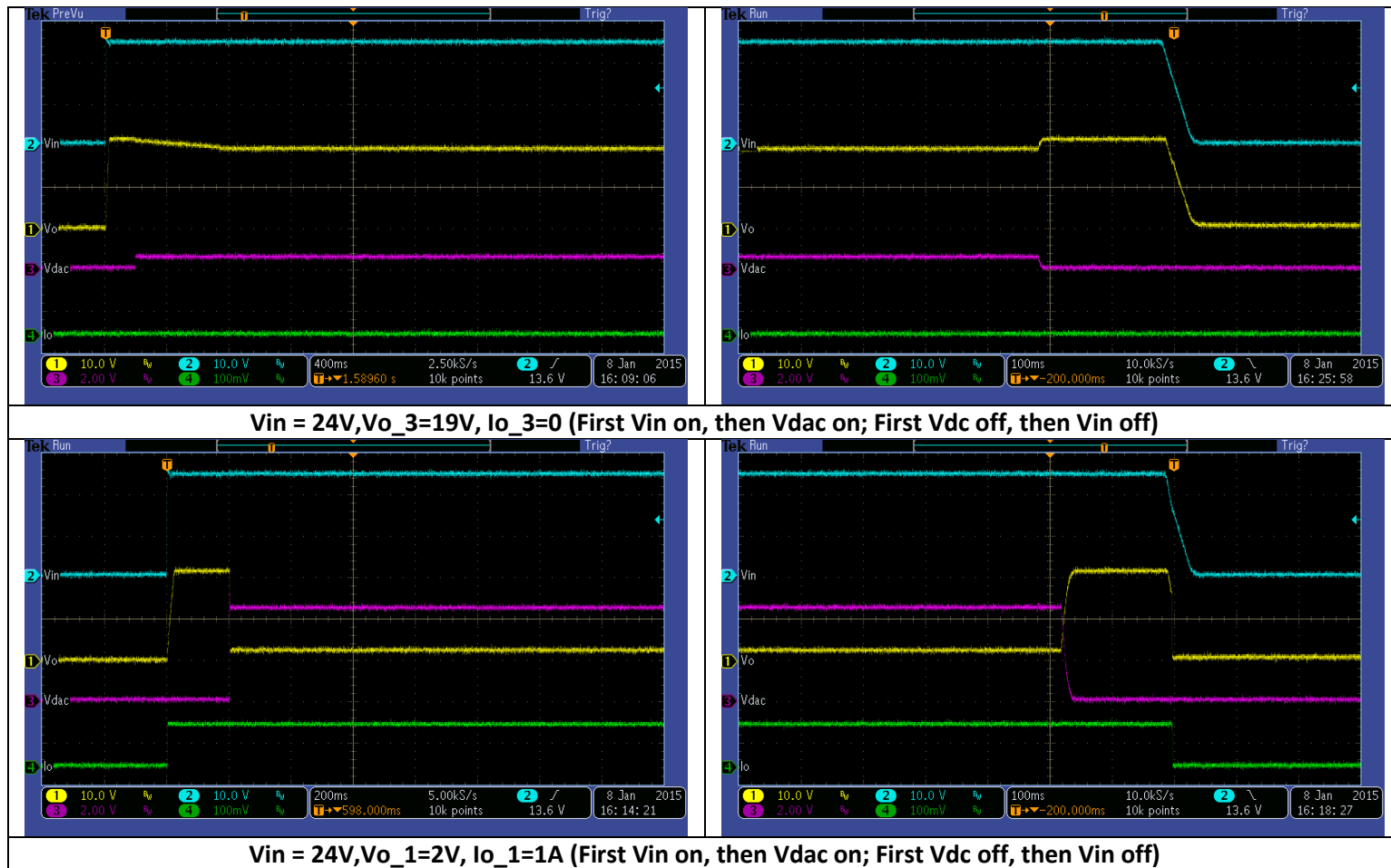
3.3) Dynamic Response

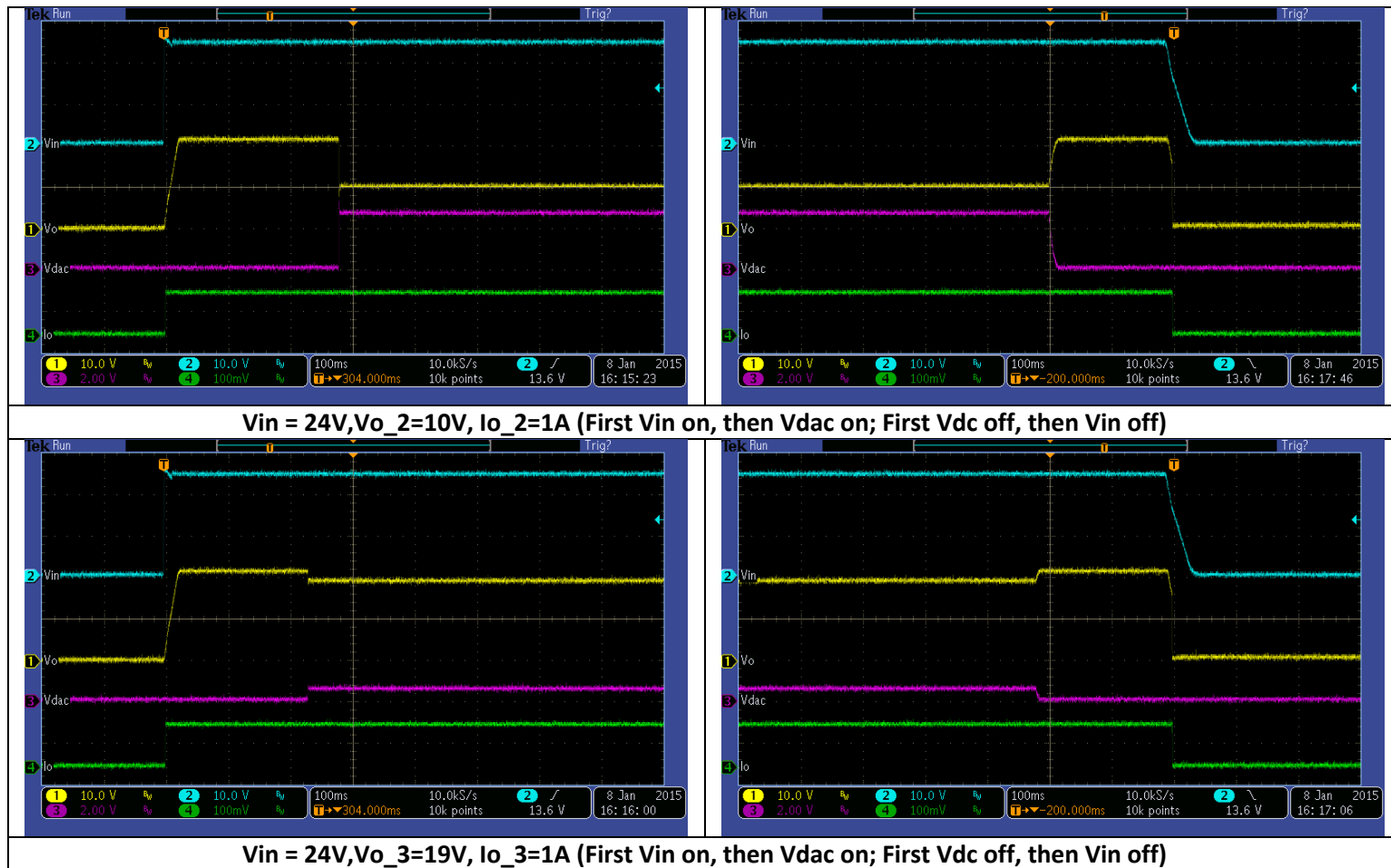


3.4) Start up and Shutdown

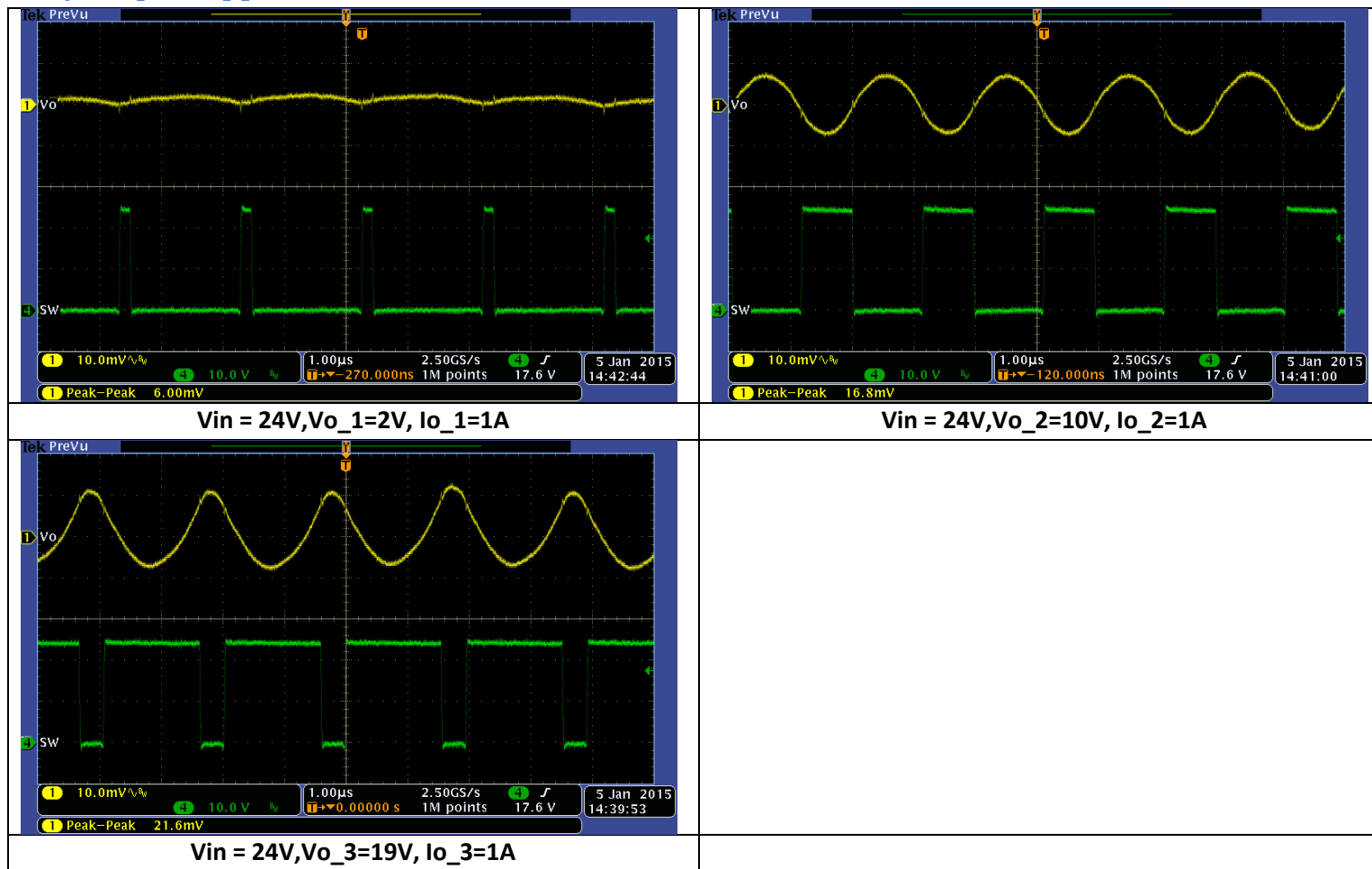




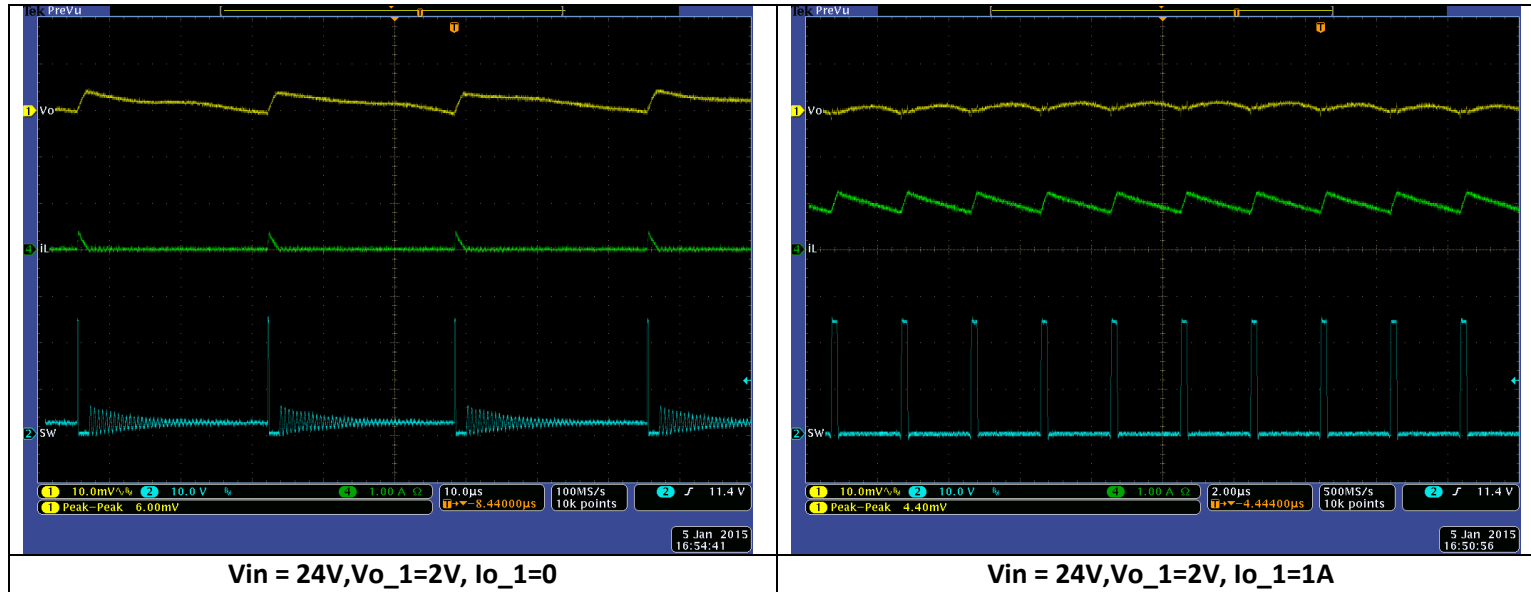


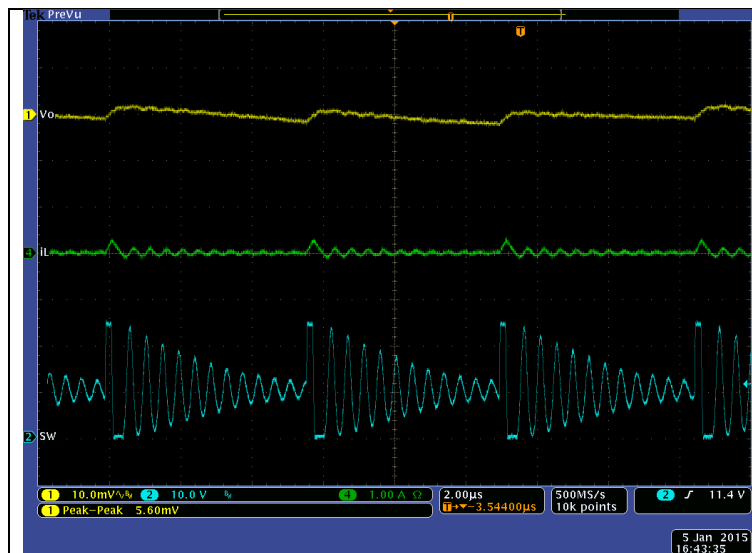


3.5) Output Ripple

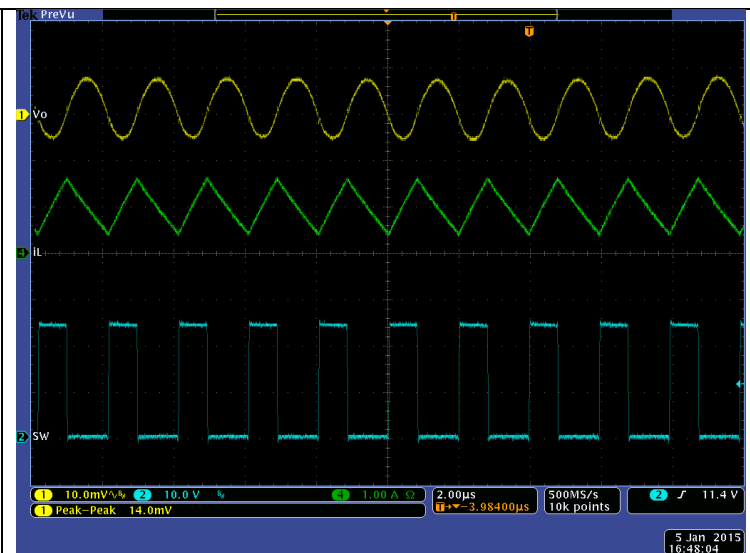


3.6) Inductor Current and SW waveform

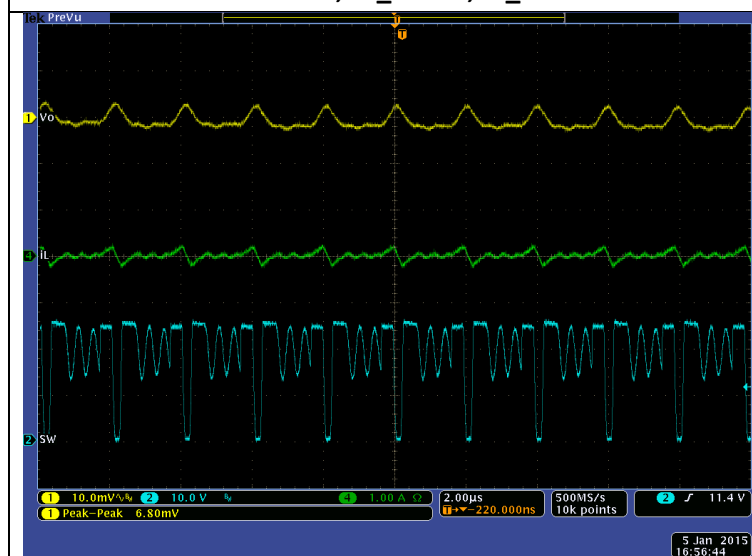




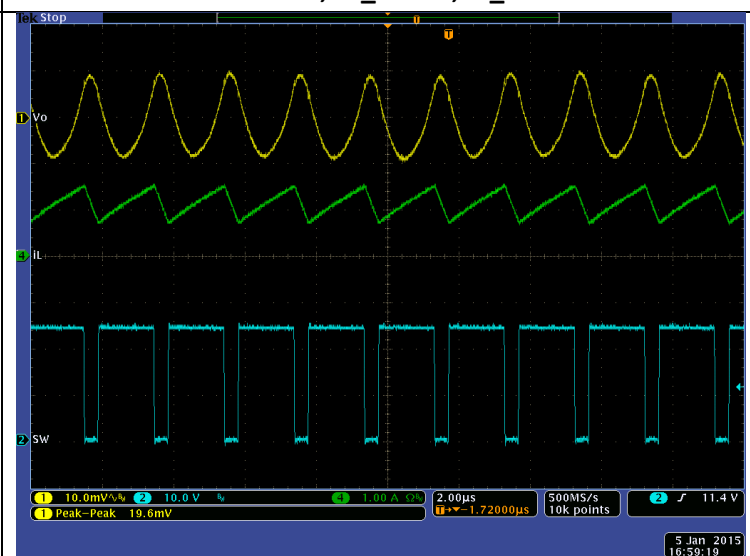
Vin = 24V,Vo_2=10V, Io_2=0



Vin = 24V,Vo_2=10V, Io_2=1A



Vin = 24V,Vo_3=19V, Io_3=0



Vin = 24V,Vo_3=19V, Io_3=1A

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