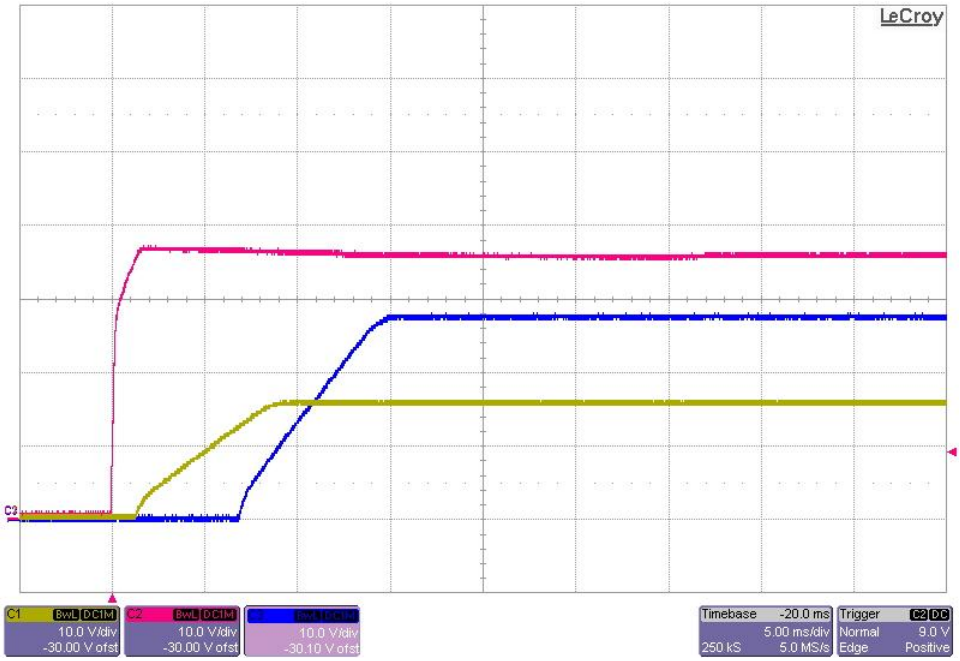
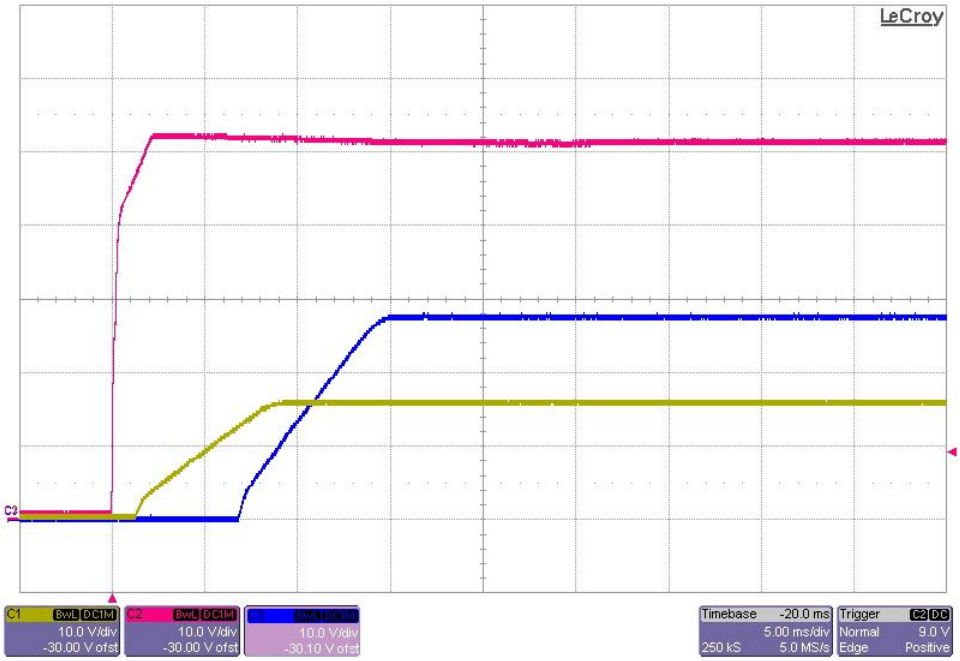
1 Startup

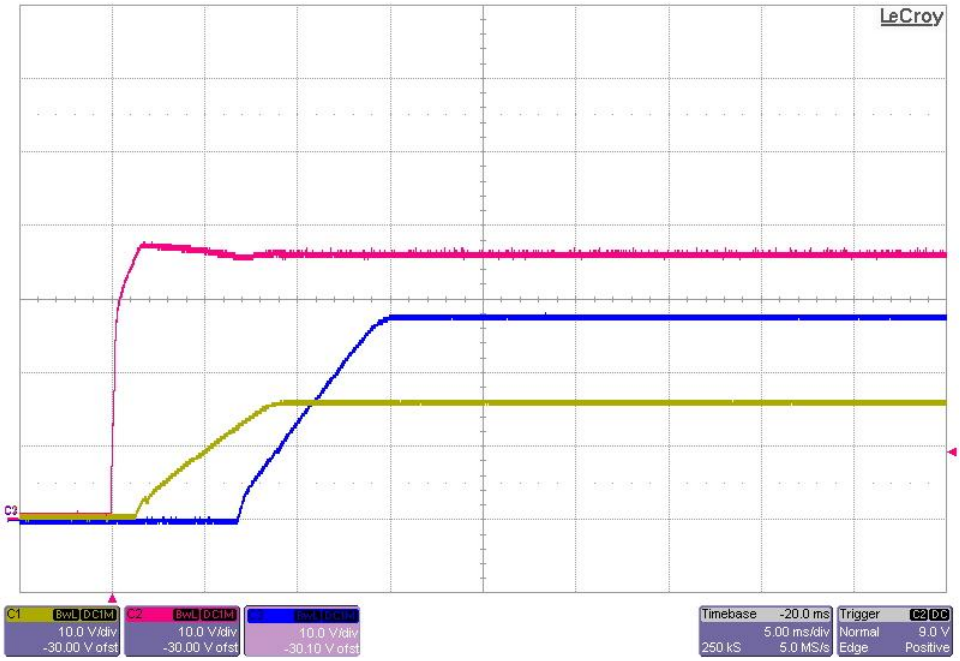
The photo below shows the output voltage startup waveform after the application of 36V in. The 16V and 28V outputs were loaded to 0A. (10V/DIV, 5mS/DIV)



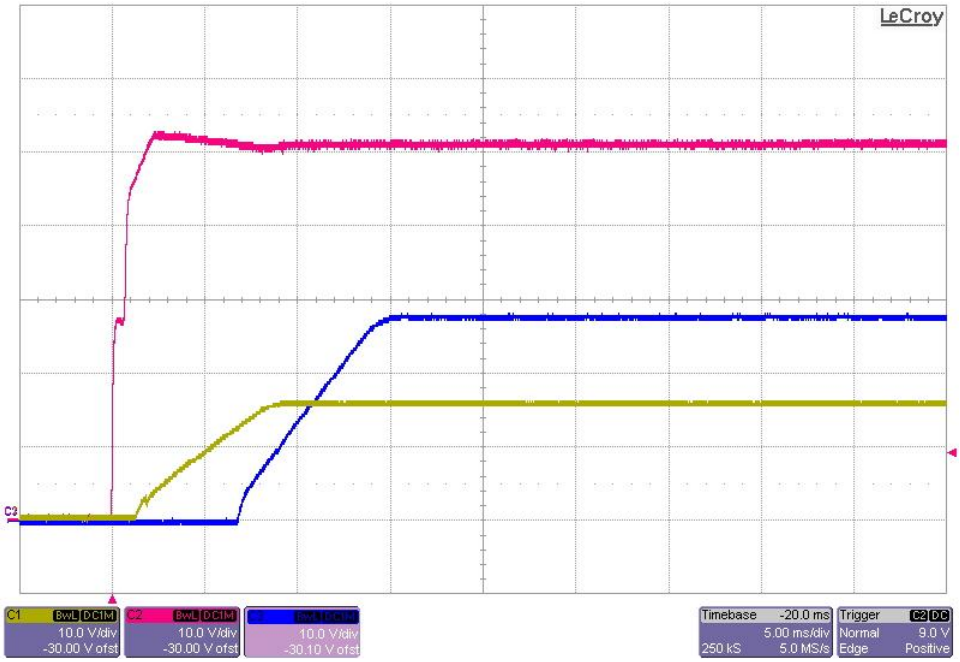
The photo below shows the output voltage startup waveform after the application of 51V in. The 16V and 28V outputs were loaded to 0A. (10V/DIV, 5mS/DIV)



The photo below shows the output voltage startup waveform after the application of 36V in. The 16V output was loaded to 4A and the 28V output was loaded to 2A. (10V/DIV, 5mS/DIV)

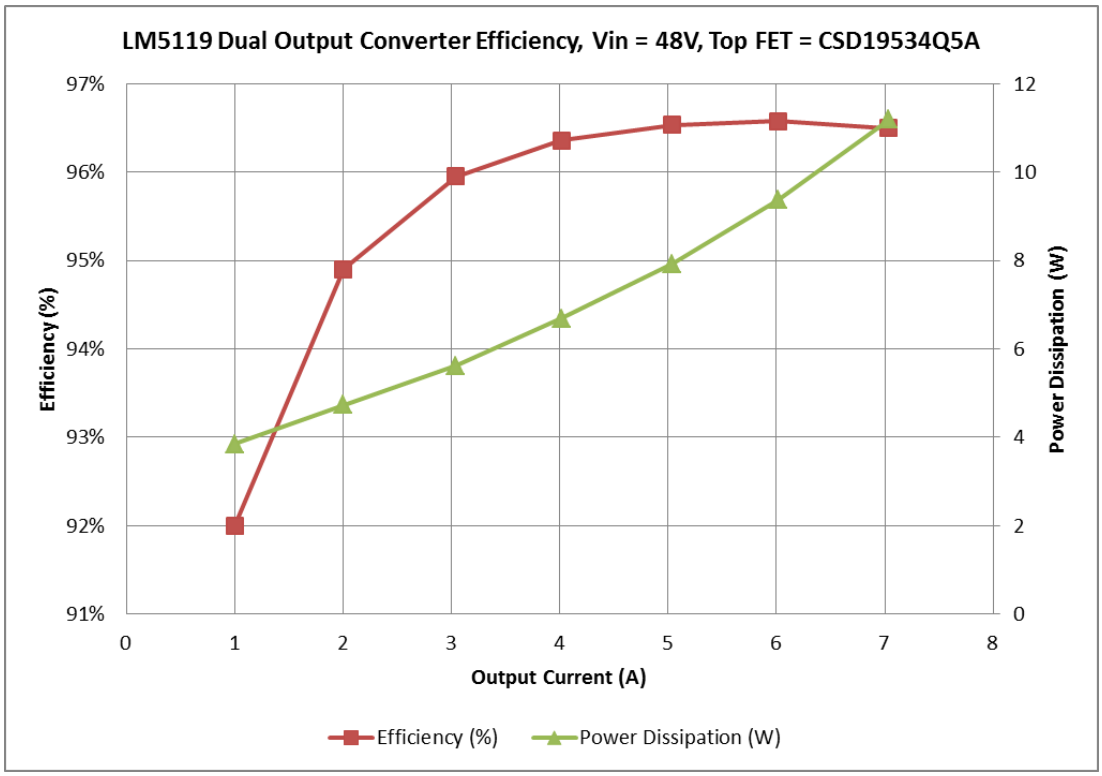


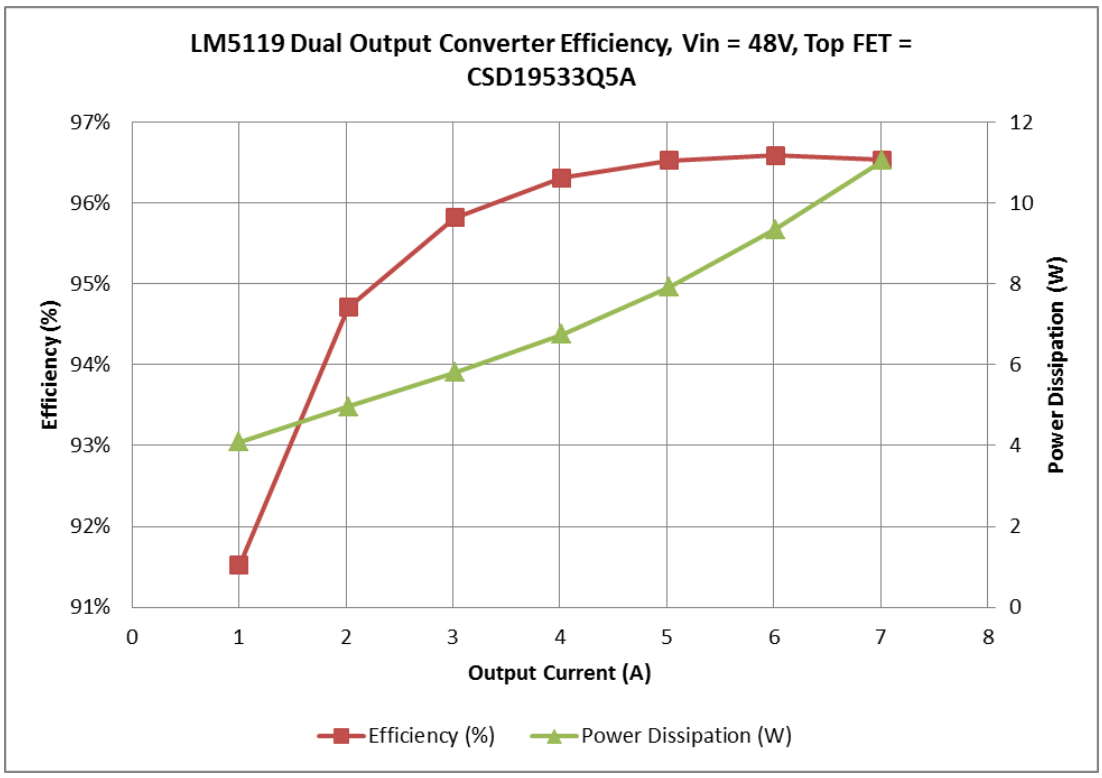
The photo below shows the output voltage startup waveform after the application of 51V in. The 16V output was loaded to 4A and the 28V output was loaded to 2A. (10V/DIV, 5mS/DIV)



2 Efficiency

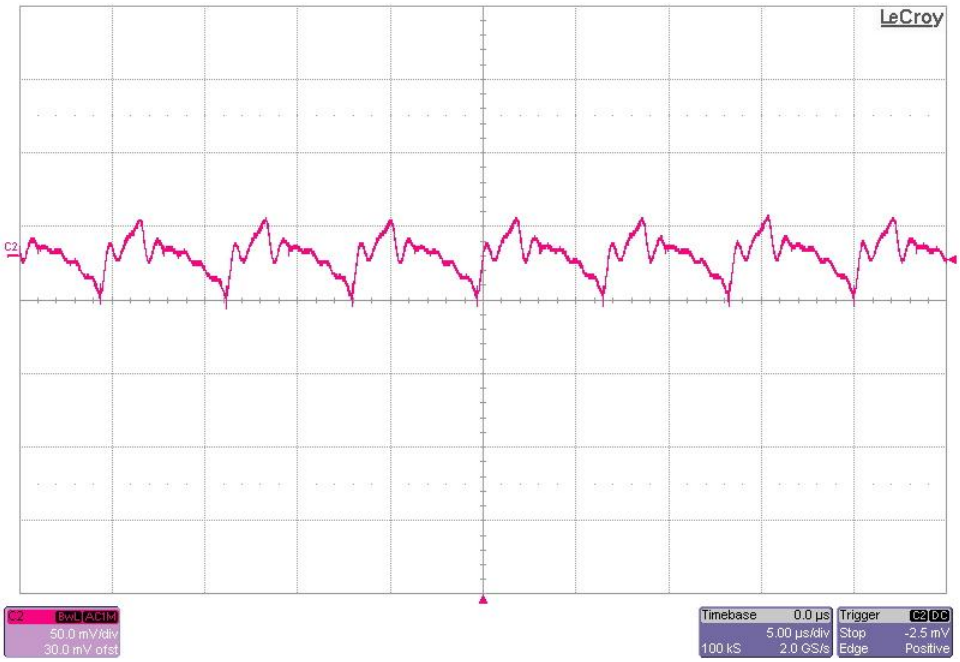
The LM5119 converter efficiency is shown below for two different top FETs. The outputs were loaded with equal currents.



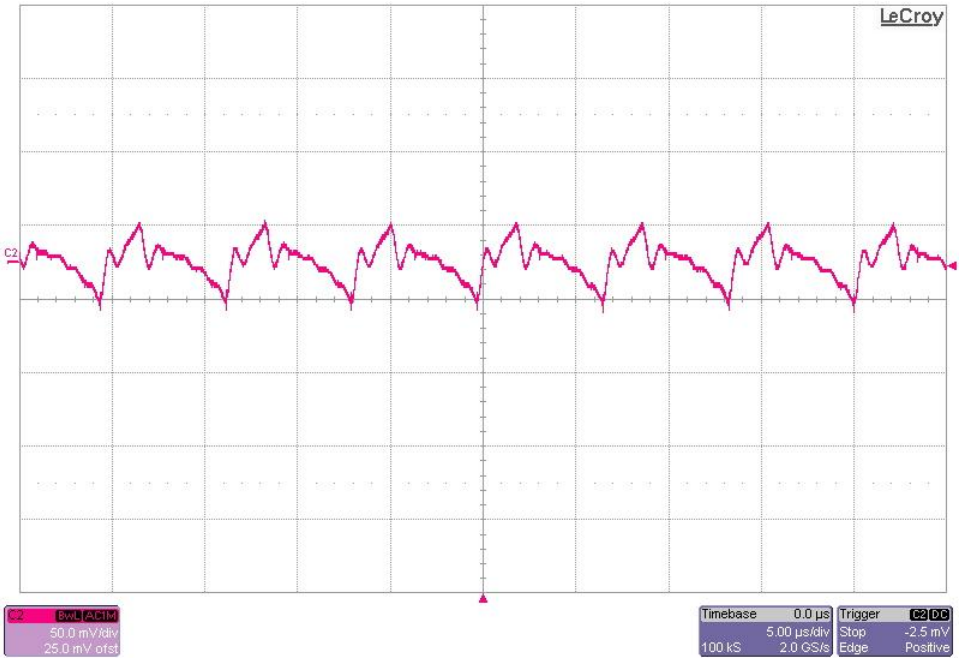


3 Output Ripple Voltage

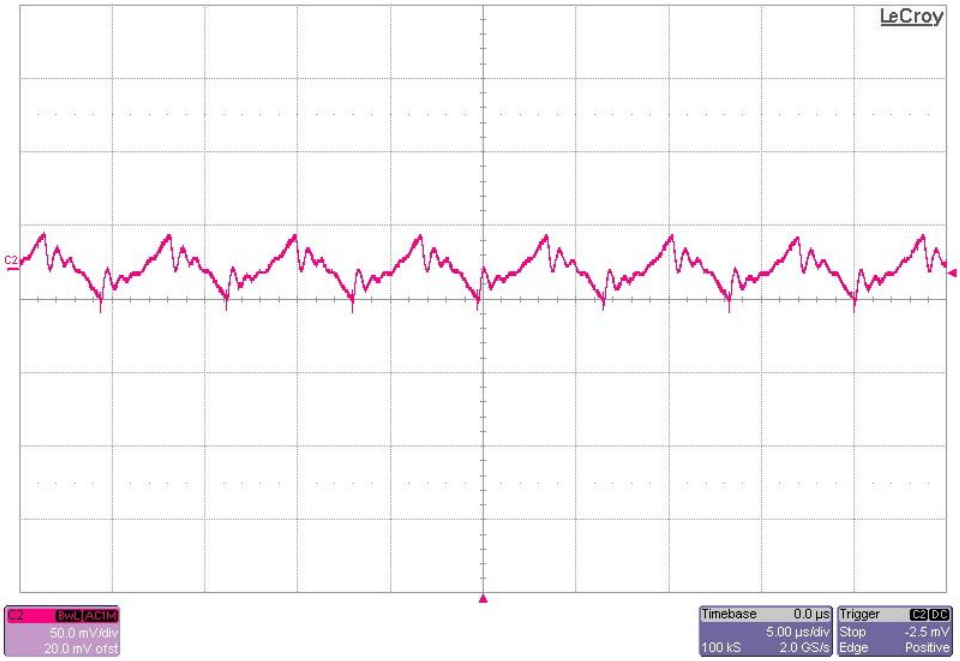
The 16V output ripple voltage (AC coupled) is shown below. The image was taken with the 16V output loaded to 4A, the 28V output loaded to 2A, and the input voltage set to 51V. (50mV/DIV, 5uS/DIV)



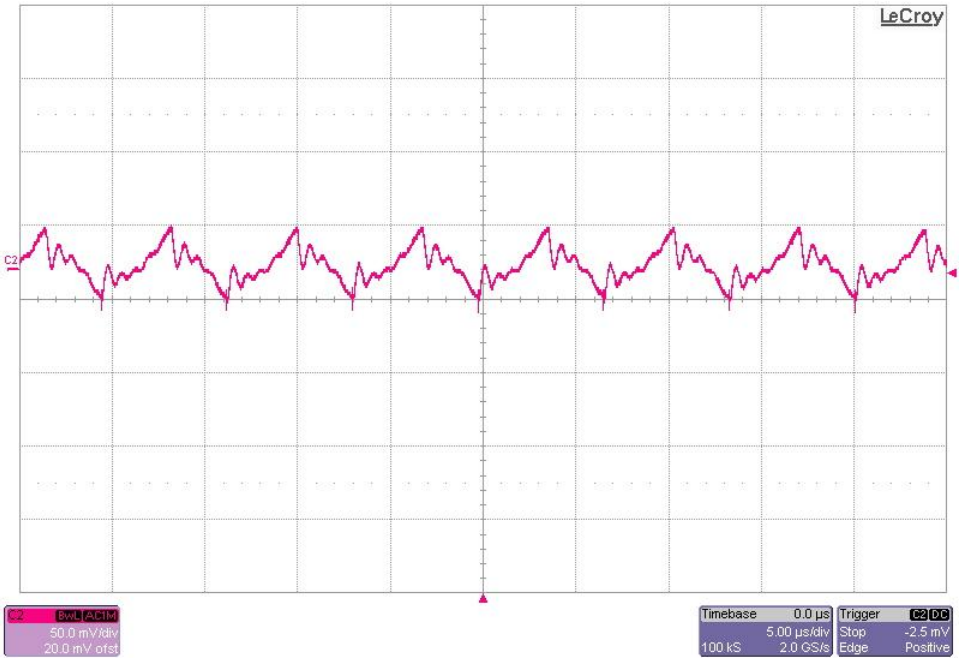
The 16V output ripple voltage (AC coupled) is shown below. The image was taken with the 16V output loaded to 6A, the 28V output loaded to 7A, and the input voltage set to 51V. (50mV/DIV, 5uS/DIV)



The 28V output ripple voltage (AC coupled) is shown below. The image was taken with the 16V output loaded to 4A, the 28V output loaded to 2A, and the input voltage set to 51V. (50mV/DIV, 5uS/DIV)

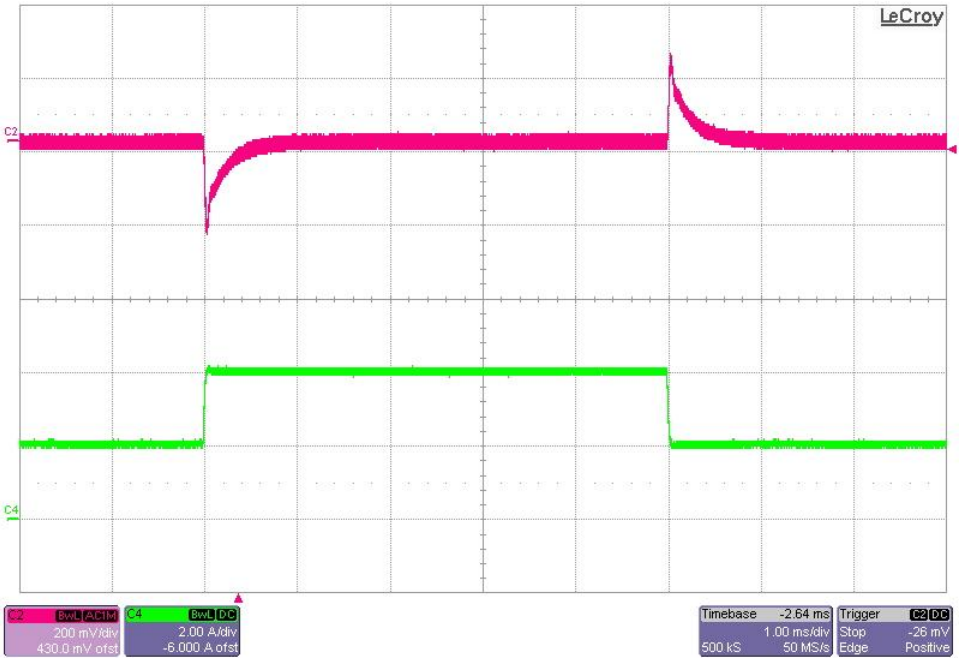


The 28V output ripple voltage (AC coupled) is shown below. The image was taken with the 16V output loaded to 6A, the 28V output loaded to 7A, and the input voltage set to 51V. (50mV/DIV, 5uS/DIV)

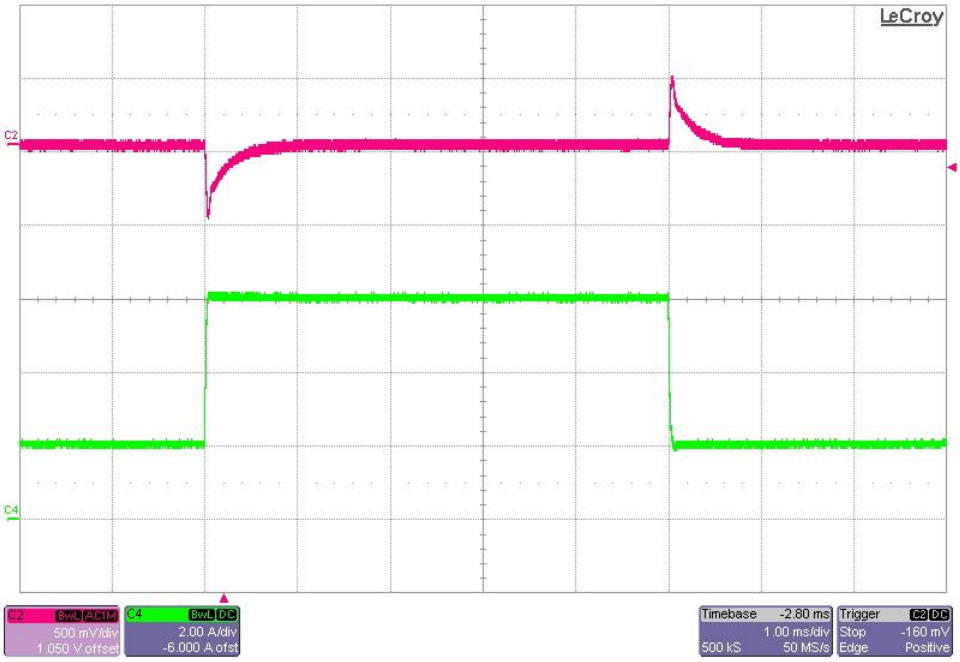


4 Load Transients

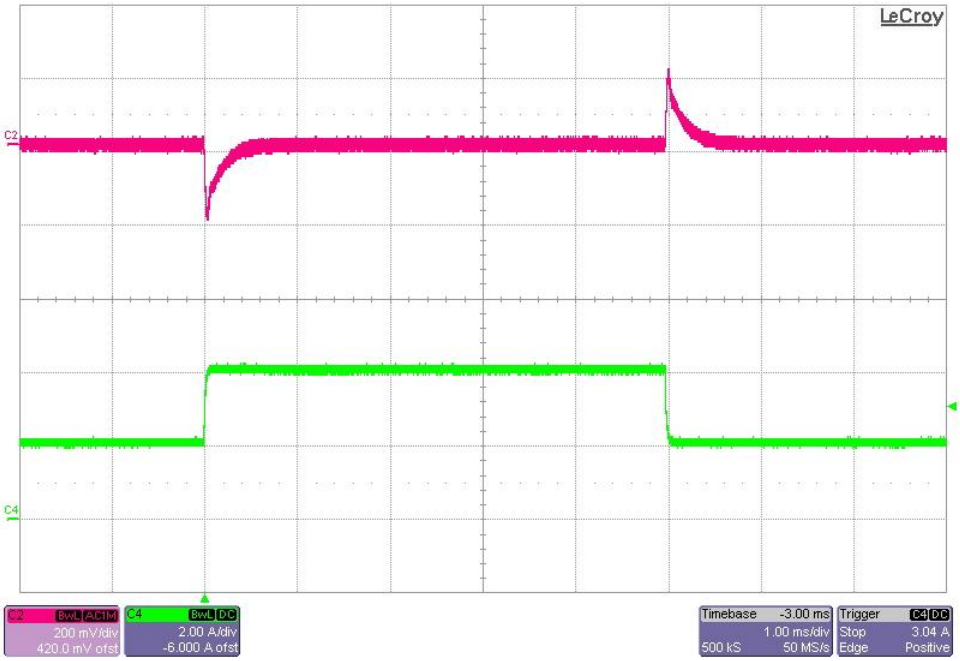
The photo below shows the 16V output voltage (ac coupled) when the load current is stepped between 2A and 4A. The 28V output was loaded to 2A and the input voltage was set to Vin = 48V.
(200mV/DIV, 2A/DIV, 1mS/DIV)



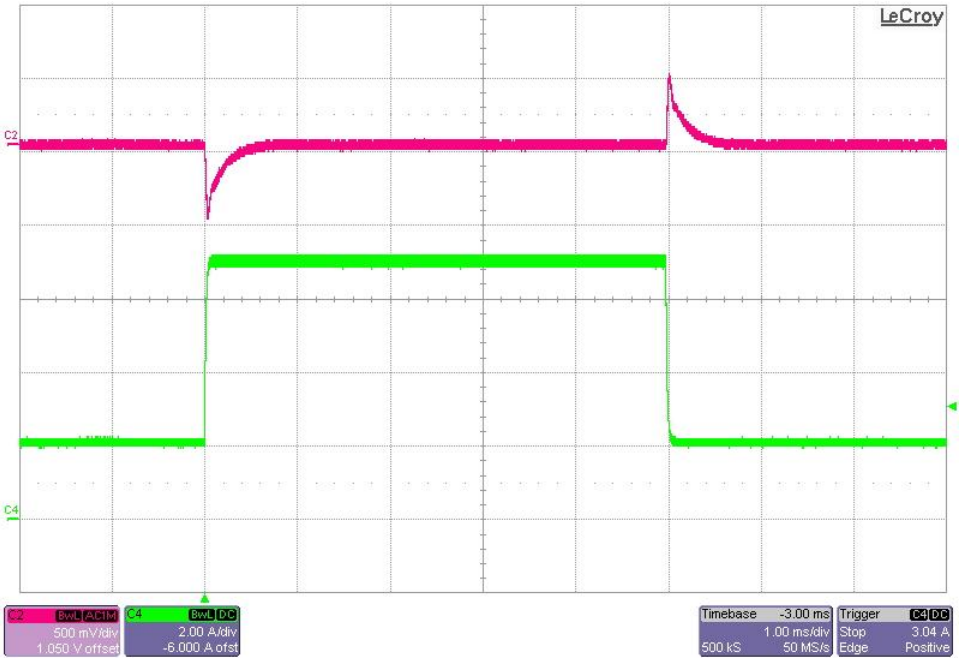
The photo below shows the 16V output voltage (ac coupled) when the load current is stepped between 2A and 6A. The 28V output was loaded to 2A and the input voltage was set to Vin = 48V.
(500mV/DIV, 2A/DIV, 1mS/DIV)



The photo below shows the 28V output voltage (ac coupled) when the load current is stepped between 2A and 4A. The 16V output was loaded to 4A and the input voltage was set to Vin = 48V.
(200mV/DIV, 2A/DIV, 1mS/DIV)

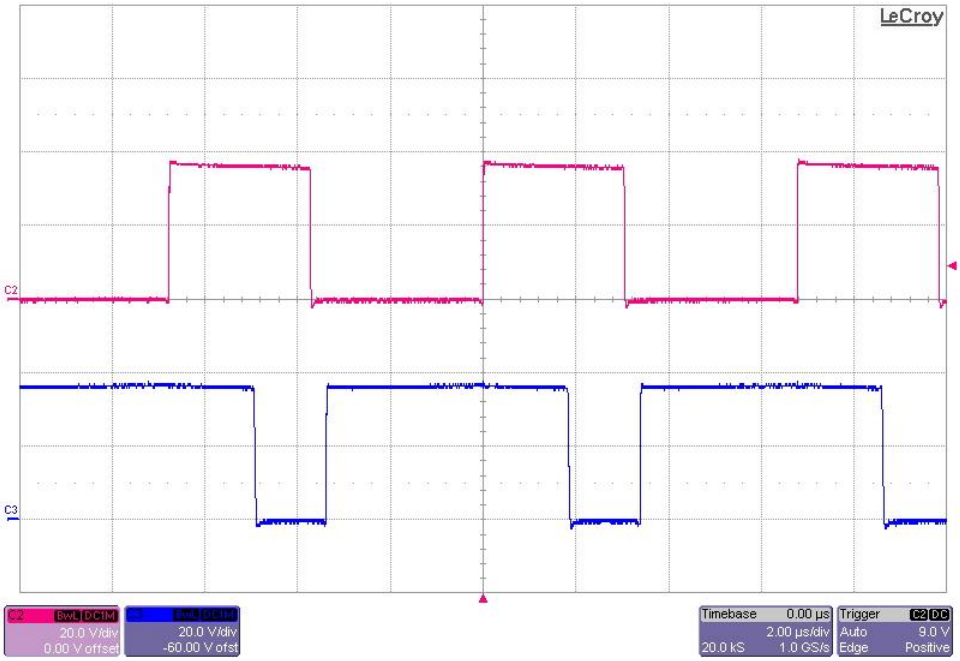


The photo below shows the 28V output voltage (ac coupled) when the load current is stepped between 2A and 7A. The 16V output was loaded to 4A and the input voltage was set to Vin = 48V.
(500mV/DIV, 2A/DIV, 1mS/DIV)

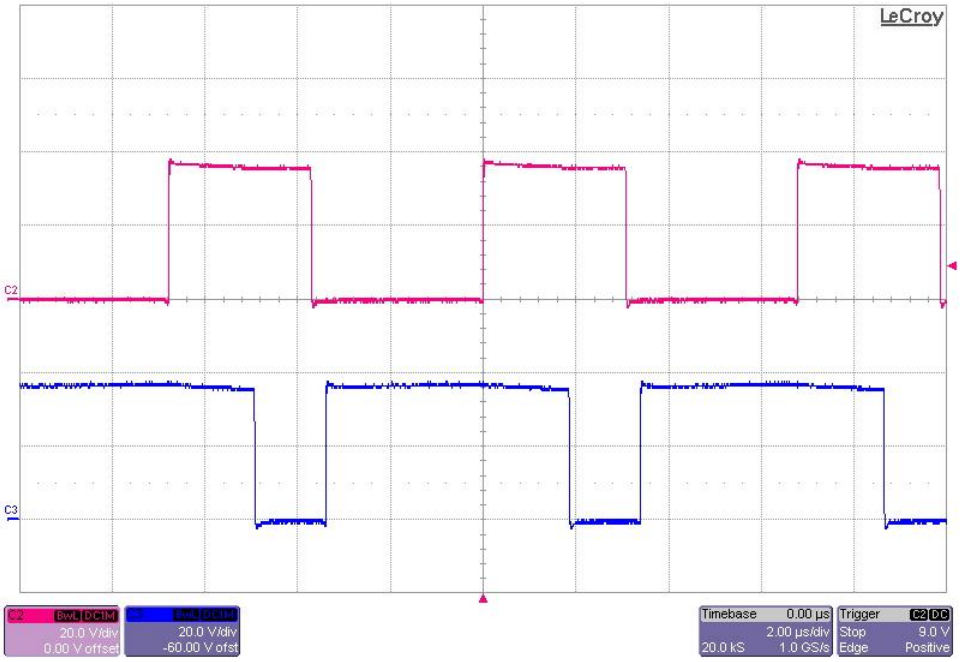


5 Switch Node Waveforms

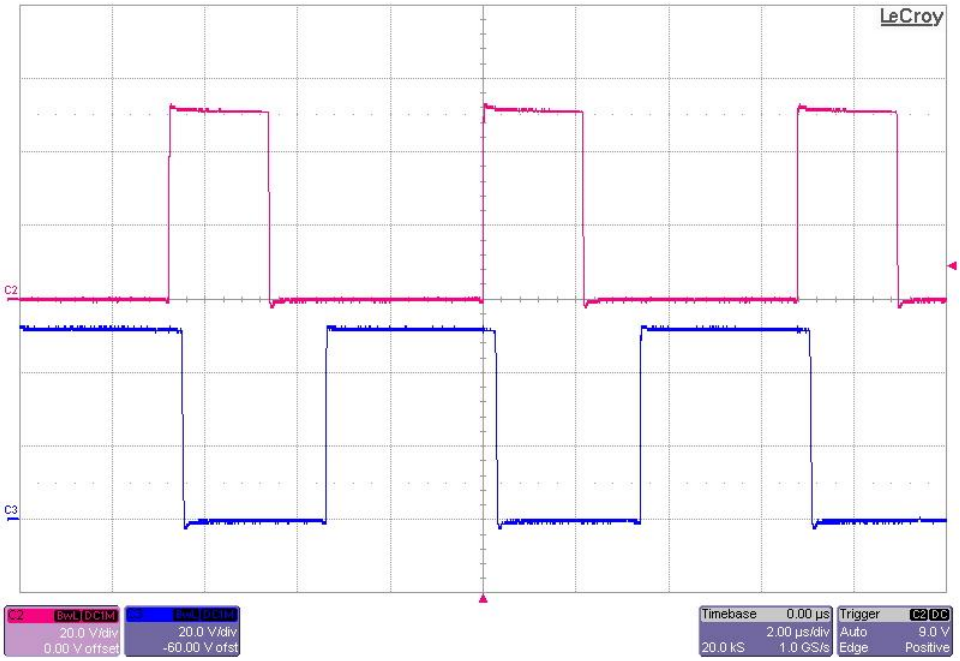
The photo below shows both the 16V and 28V switching voltage nodes. The image was taken with the 16V output loaded to 4A, the 28V output loaded to 2A, and the input voltage set to 36V.
(20V/DIV, 2uS/DIV)



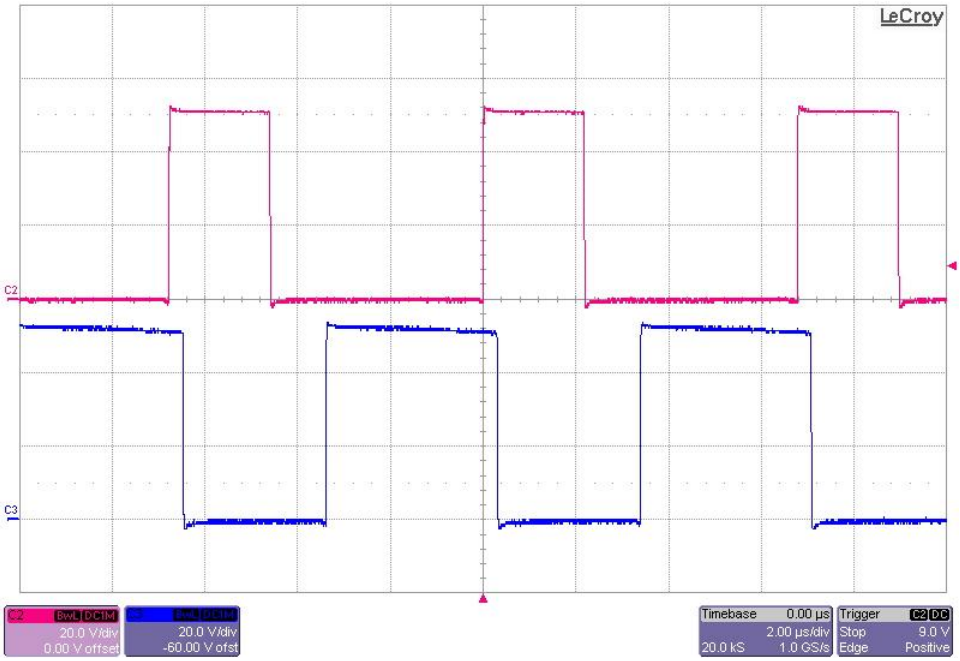
The photo below shows both the 16V and 28V switching voltage nodes. The image was taken with the 16V output loaded to 6A, the 28V output loaded to 7A, and the input voltage set to 36V.
(20V/DIV, 2uS/DIV)



The photo below shows both the 16V and 28V switching voltage nodes. The image was taken with the 16V output loaded to 4A, the 28V output loaded to 2A, and the input voltage set to 51V. (20V/DIV, 2uS/DIV)



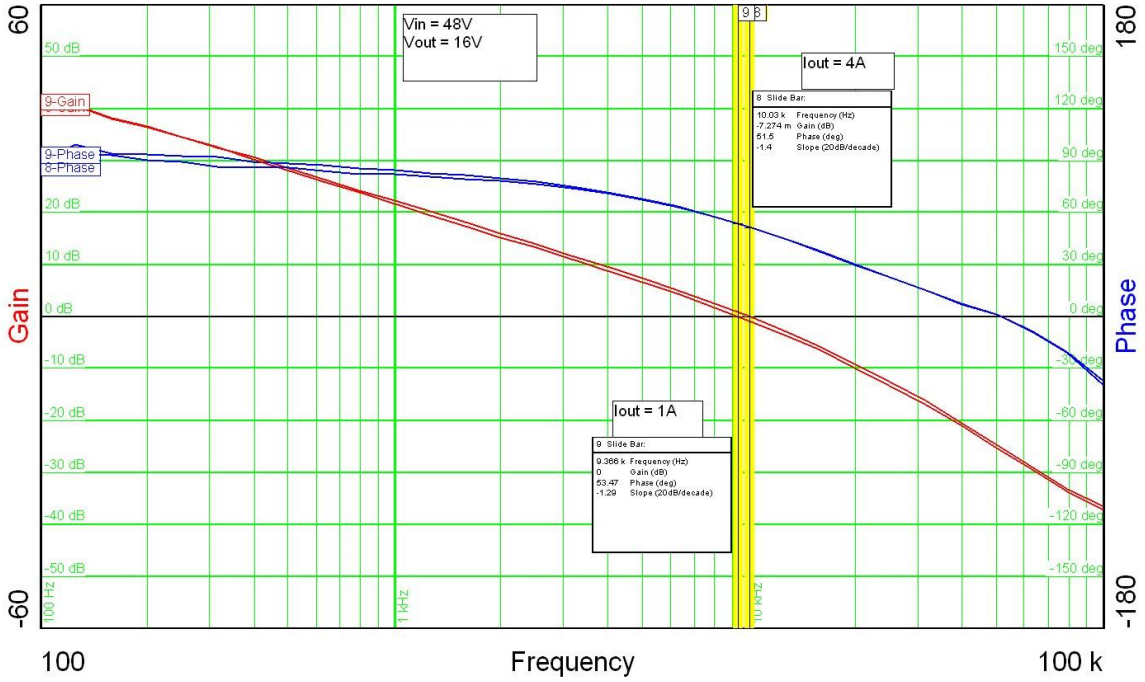
The photo below shows both the 16V and 28V switching voltage nodes. The image was taken with the 16V output loaded to 6A, the 28V output loaded to 7A, and the input voltage set to 51V. (20V/DIV, 2uS/DIV)



6 Loop Gain

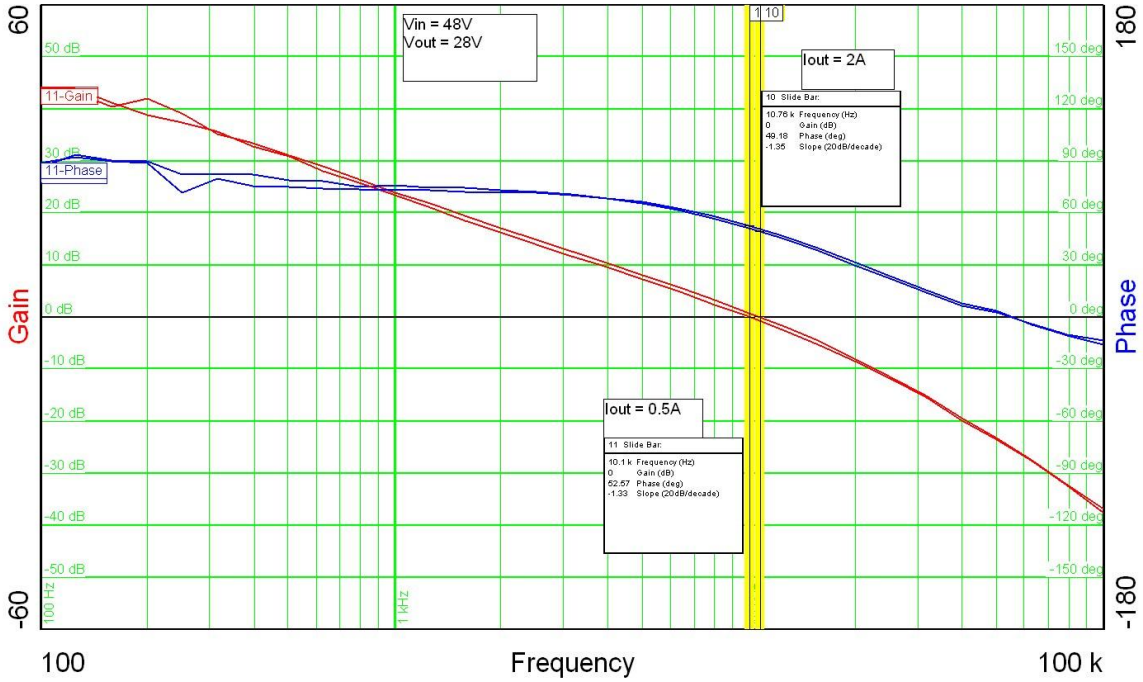
The plot below shows the 16V loop gain with the input voltage set to 48V and the output set to 1A and 4A.

Loop Gain (Iout = 1A)	BW: 9.37KHz	PM: 53 degrees
Loop Gain (Iout = 4A)	BW: 10.0KHz	PM: 52 degrees



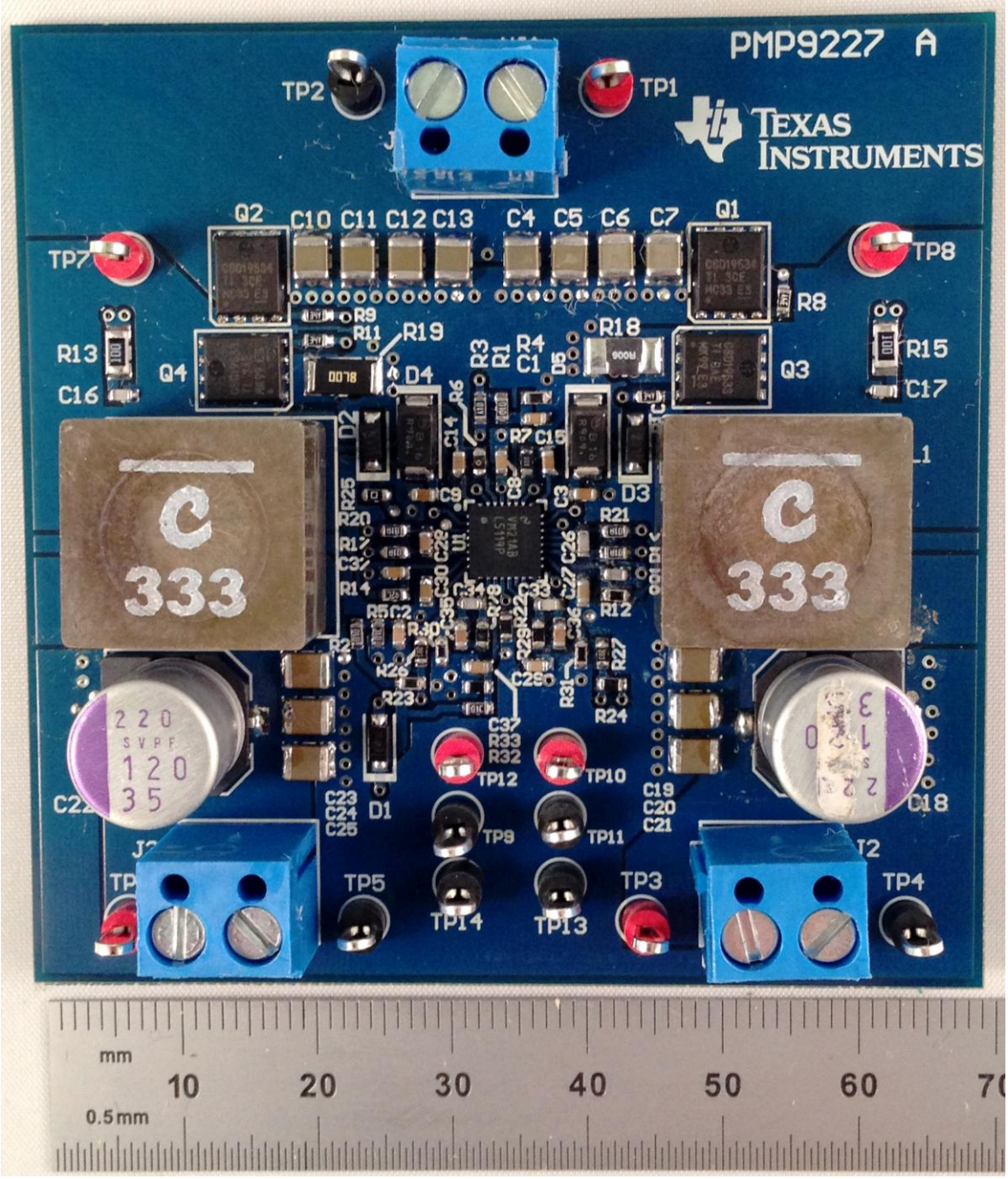
The plot below shows the 16V loop gain with the input voltage set to 48V and the output set to 0.5A and 2A.

Loop Gain (Iout = 0.5A)	BW: 10.1KHz	PM: 53 degrees
Loop Gain (Iout = 2A)	BW: 10.8KHz	PM: 49 degrees



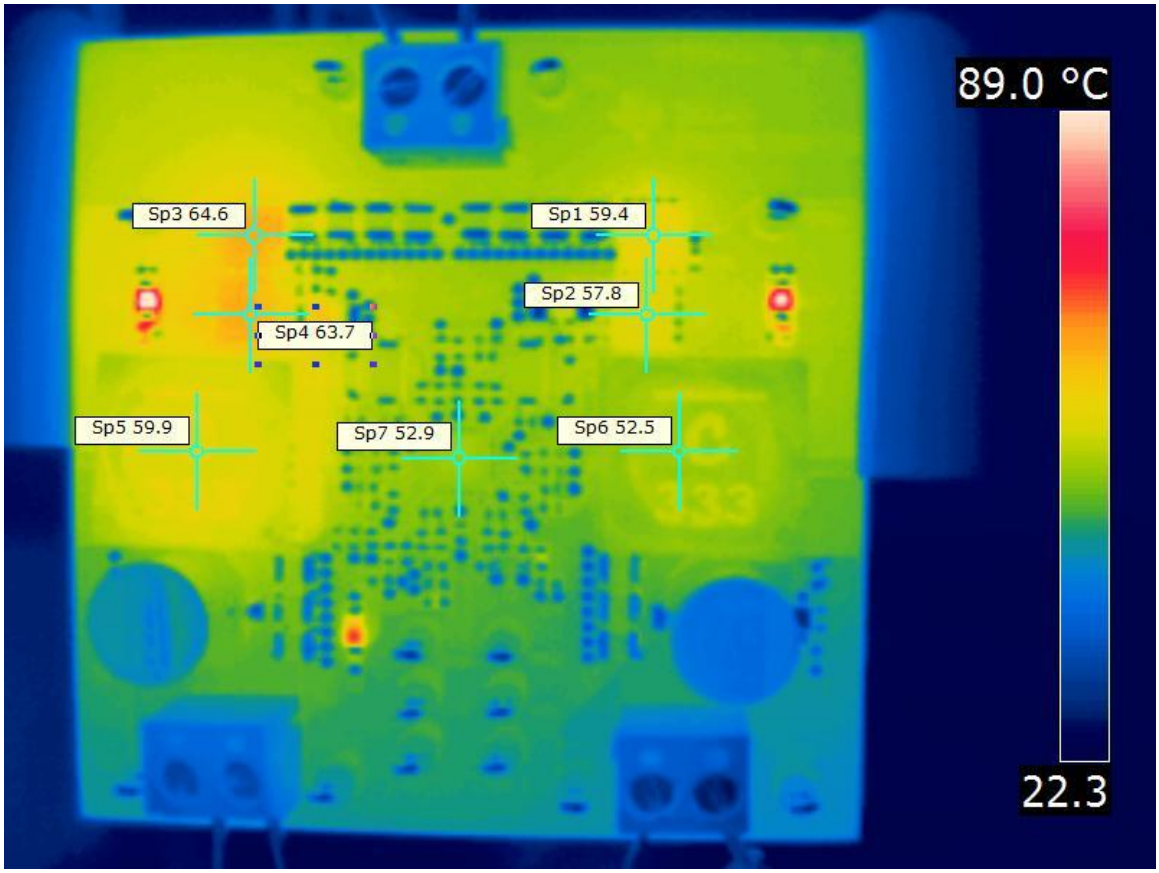
7 Photo

The photo below shows the PMP9227 REVB assy.



8 Thermal Image

A thermal image is shown below operating at 48Vin and outputs loaded to 16V@4A and 28V@2A (room temp and no airflow).



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