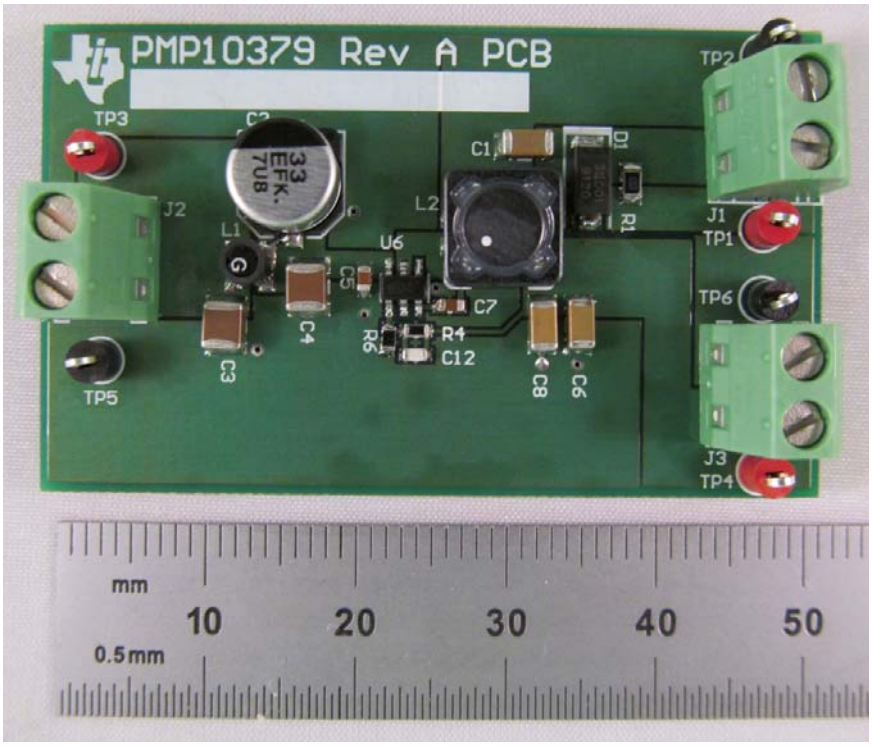
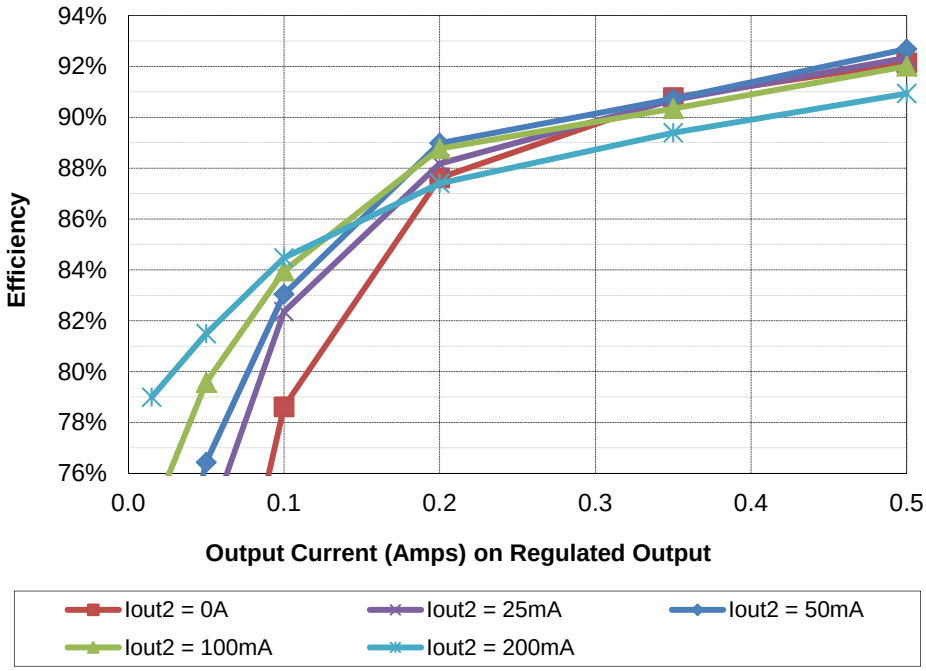
1 Photos

The photographs below show the PMP10379 Rev A prototype assembly.



2 Efficiency

The efficiency data is shown in the tables and graph below.



Iout2 = 0A

Regulated Vout		Auxilliary Vout					Total		
Iout	Vout	Iout	Vout	Vin	Iin	Pin	Pout	Losses	Efficiency
0.015	5.00	0.000	4.75	12.02	0.017	0.207	0.08	0.13	36.3%
0.050	5.00	0.000	4.75	11.99	0.032	0.384	0.25	0.13	65.2%
0.100	5.00	0.000	4.77	12.00	0.053	0.636	0.50	0.14	78.6%
0.200	4.99	0.000	4.79	11.99	0.095	1.139	1.00	0.14	87.6%
0.350	4.98	0.000	4.82	12.00	0.160	1.920	1.74	0.18	90.8%
0.500	4.98	0.000	4.86	12.01	0.225	2.702	2.49	0.21	92.1%

Iout2 = 25mA

Regulated Vout		Auxilliary Vout					Total		
Iout	Vout	Iout	Vout	Vin	Iin	Pin	Pout	Losses	Efficiency
0.015	5.00	0.025	4.50	12.00	0.027	0.324	0.19	0.14	57.9%
0.050	5.00	0.025	4.50	12.00	0.041	0.492	0.36	0.13	73.7%
0.100	5.00	0.025	4.51	12.00	0.062	0.744	0.61	0.13	82.4%
0.200	4.99	0.025	4.52	12.00	0.105	1.260	1.11	0.15	88.2%
0.350	4.98	0.026	4.53	12.00	0.171	2.052	1.86	0.19	90.7%
0.500	4.98	0.025	4.56	12.00	0.235	2.820	2.60	0.22	92.3%

Iout2 = 50mA

Regulated Vout		Auxilliary Vout					Total		
Iout	Vout	Iout	Vout	Vin	Iin	Pin	Pout	Losses	Efficiency
0.014	5.00	0.051	4.44	12.00	0.037	0.444	0.30	0.15	66.8%
0.050	5.00	0.051	4.45	12.00	0.052	0.624	0.48	0.15	76.4%
0.100	5.00	0.051	4.46	12.00	0.073	0.876	0.73	0.15	83.0%
0.200	5.00	0.051	4.47	12.00	0.115	1.380	1.23	0.15	89.0%
0.350	4.99	0.050	4.48	12.00	0.181	2.172	1.97	0.20	90.7%
0.500	4.99	0.051	4.51	12.00	0.245	2.940	2.73	0.21	92.7%

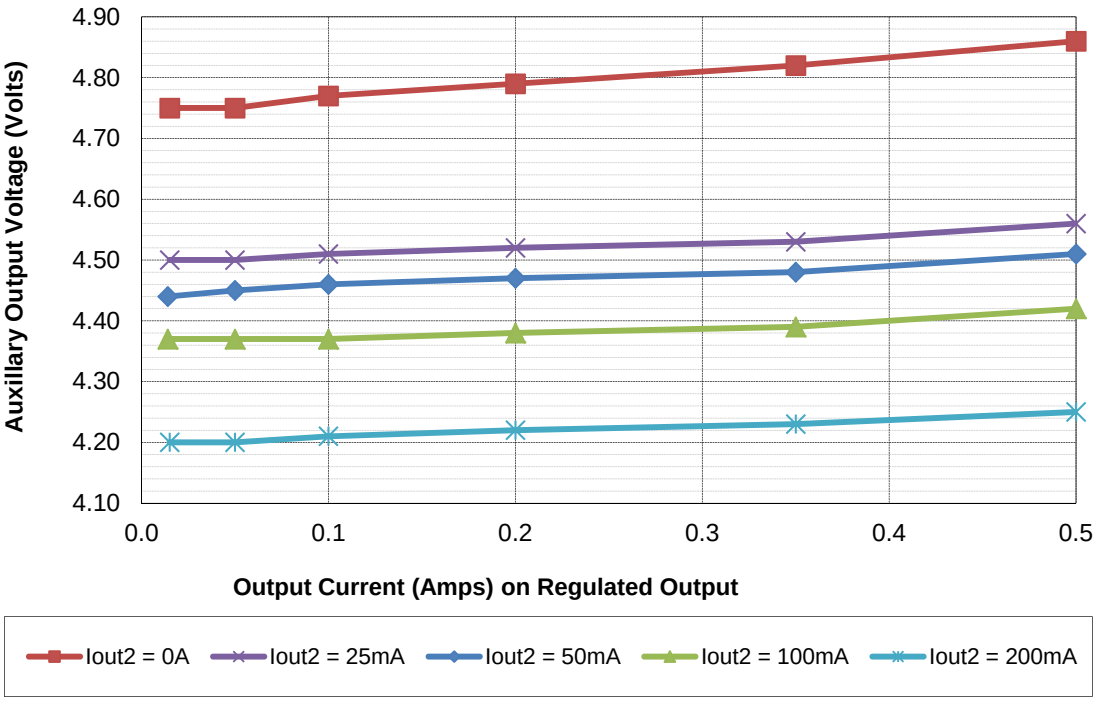
Iout2 = 100mA

Regulated Vout		Auxilliary Vout					Total		
Iout	Vout	Iout	Vout	Vin	Iin	Pin	Pout	Losses	Efficiency
0.014	5.01	0.100	4.37	12.00	0.057	0.684	0.51	0.18	74.1%
0.050	5.01	0.100	4.37	12.00	0.072	0.864	0.69	0.18	79.6%
0.100	5.00	0.100	4.37	12.00	0.093	1.116	0.94	0.18	84.0%
0.200	5.00	0.100	4.38	12.00	0.135	1.620	1.44	0.18	88.8%
0.350	4.99	0.101	4.39	12.00	0.202	2.424	2.19	0.23	90.3%
0.500	4.99	0.100	4.42	12.00	0.266	3.192	2.94	0.26	92.0%

Iout2 = 200mA

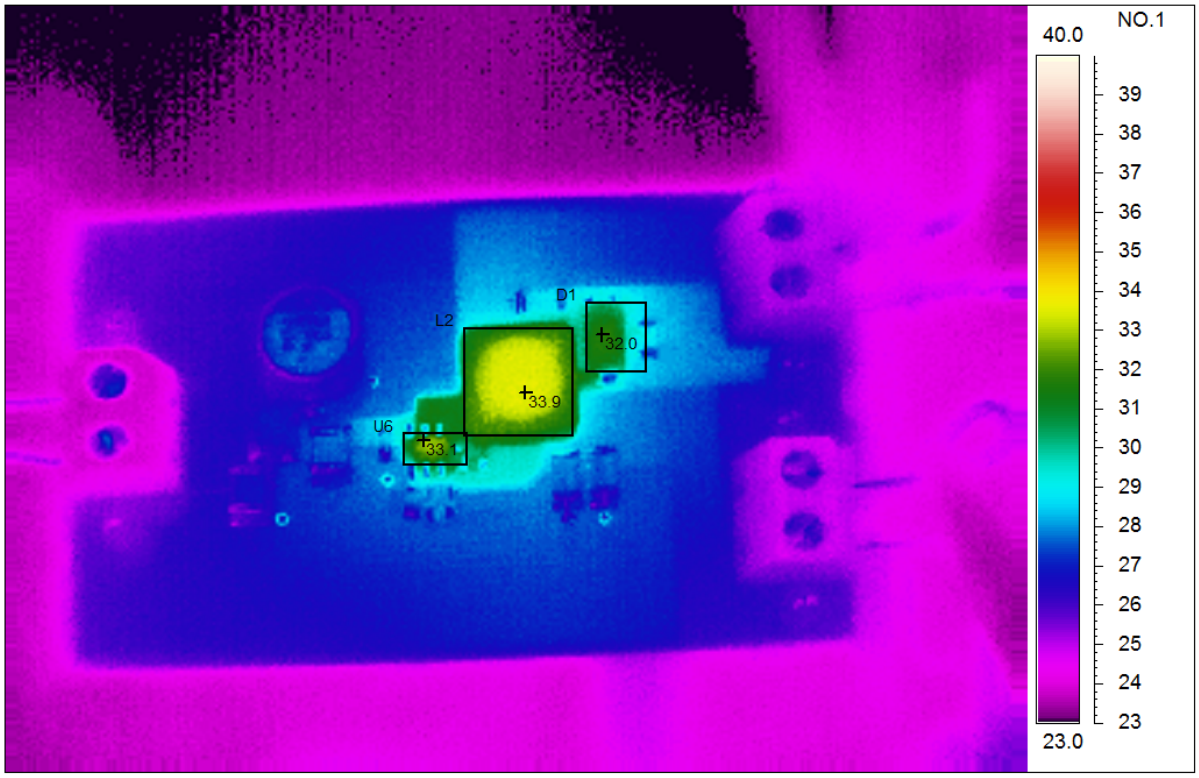
Regulated Vout		Auxilliary Vout					Total		
Iout	Vout	Iout	Vout	Vin	Iin	Pin	Pout	Losses	Efficiency
0.015	5.02	0.201	4.20	12.00	0.097	1.164	0.92	0.24	79.0%
0.050	5.02	0.201	4.20	12.00	0.112	1.344	1.10	0.25	81.5%
0.100	5.02	0.201	4.21	12.00	0.133	1.596	1.35	0.25	84.5%
0.200	5.01	0.200	4.22	12.00	0.176	2.112	1.85	0.27	87.4%
0.350	5.00	0.200	4.23	12.00	0.242	2.904	2.60	0.31	89.4%
0.500	5.00	0.200	4.25	12.00	0.307	3.684	3.35	0.33	90.9%

3 Cross-Regulation



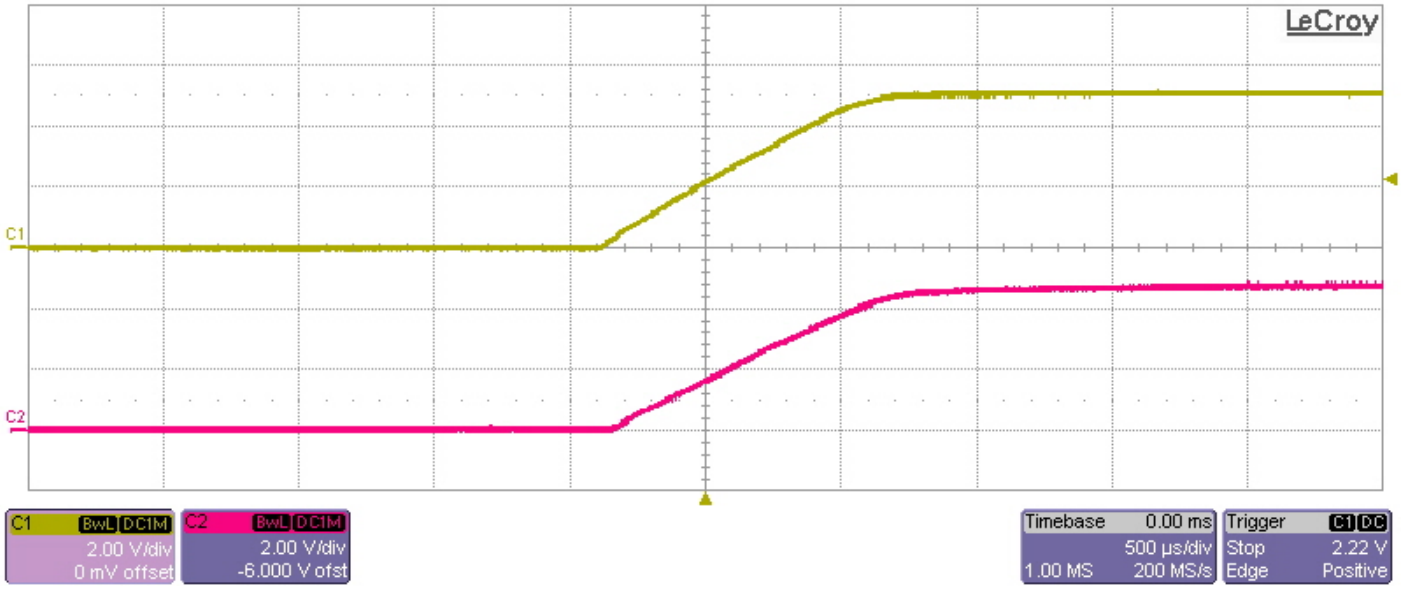
4 Thermal Images

The thermal image below shows the assembly with a 500mA load on the regulated output and a 200mA load on the auxilliary output. The input voltage was 12V. The ambient temperature was 25ºC.



5 Startup

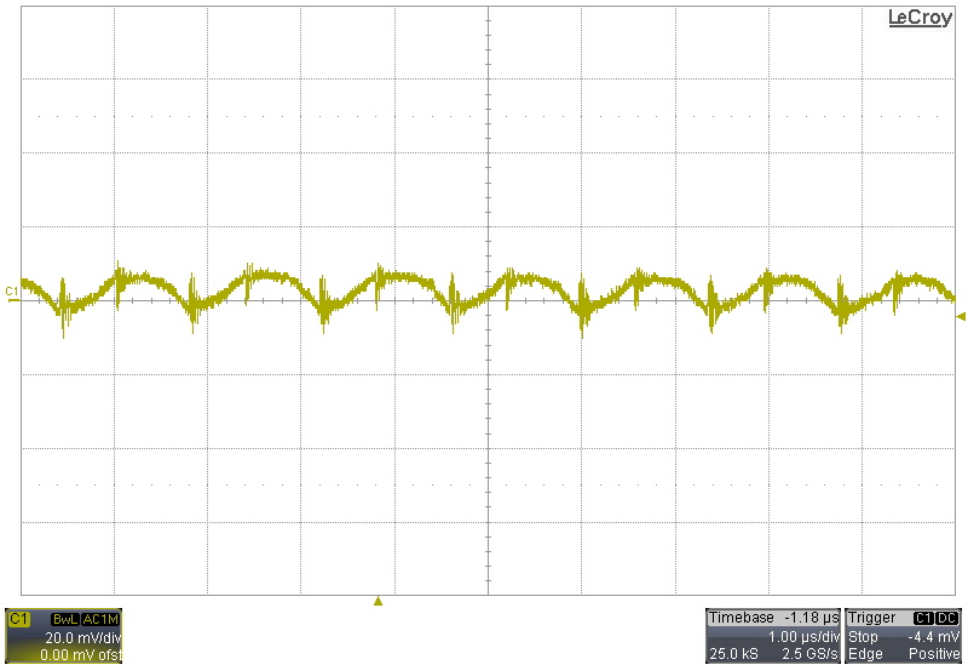
The output voltages at startup are shown in the images below. Channel 1 shows the regulated output voltage. Channel 2 shows the auxilliary output voltage. The regulated output was loaded with 200mA, and the auxilliary output was loaded with 50mA. The input voltage was 12V.



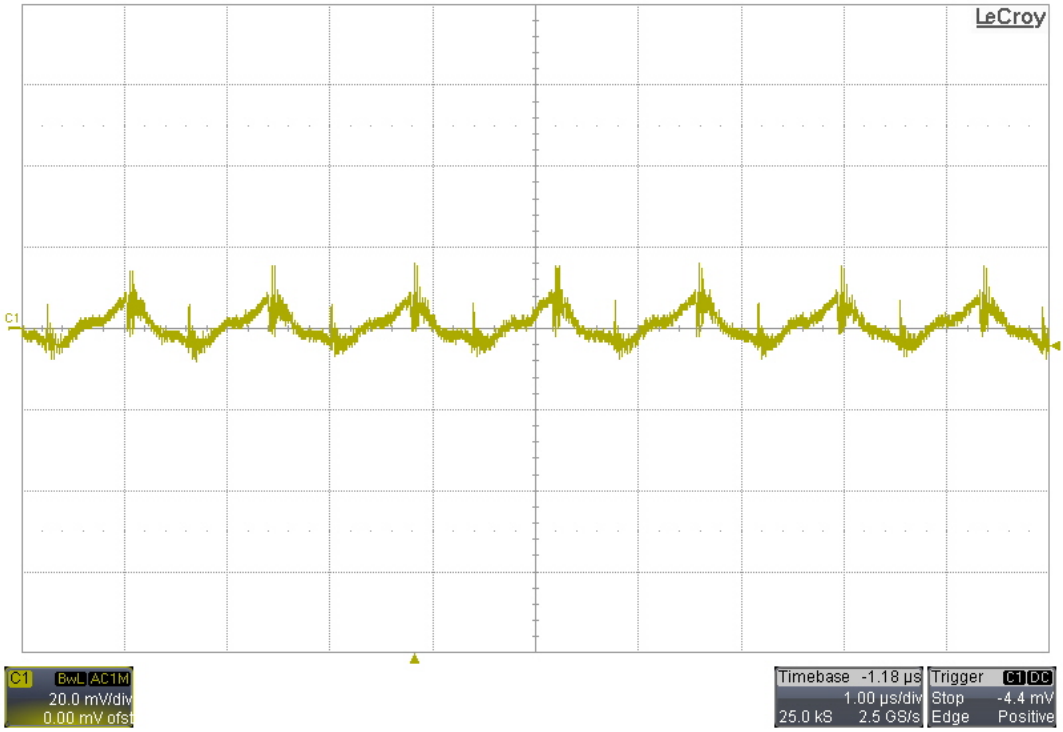
6 Output Ripple Voltage

The input voltage was 12V. The regulated output was loaded with 500mA and the auxilliary output was loaded with 200mA.

6.1 Regulated Output



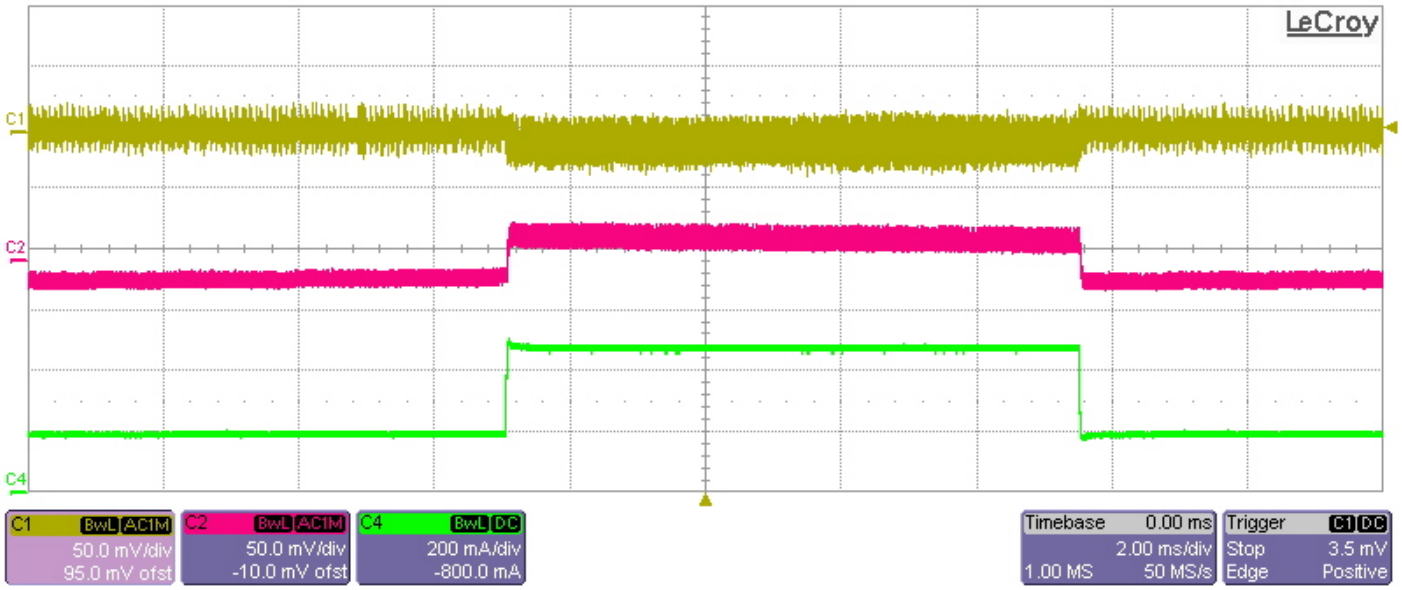
6.2 Auxilliary Output



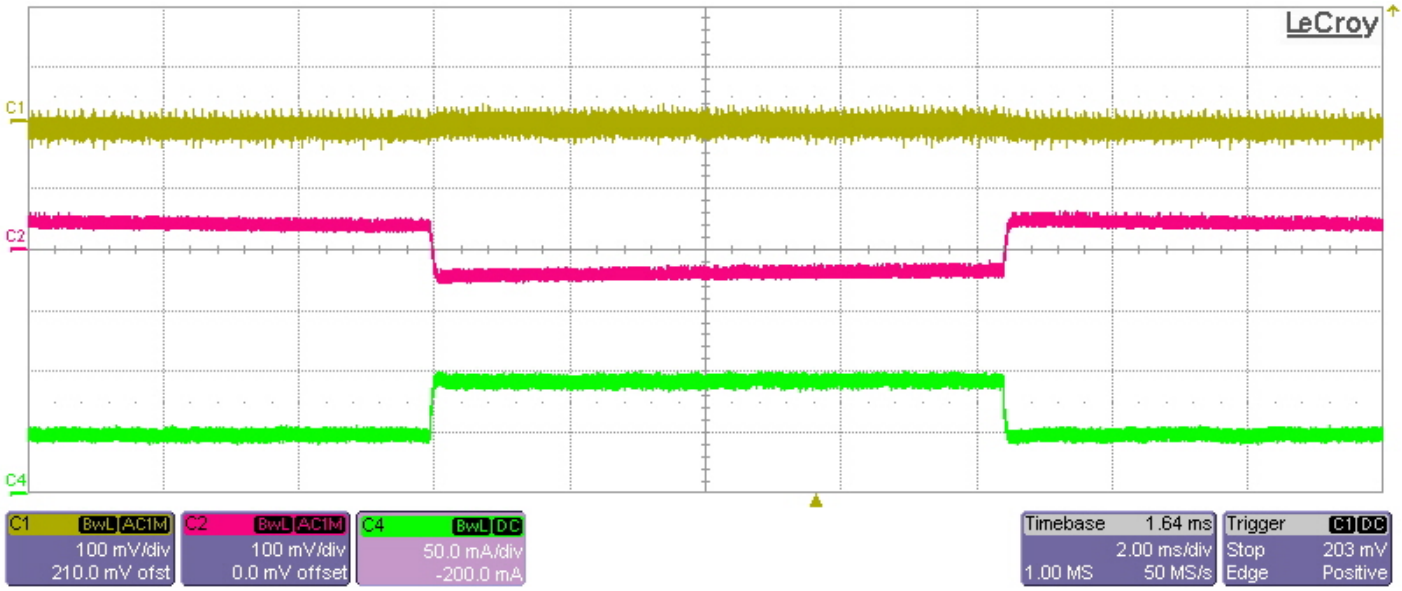
7 Load Transients

The input voltage was 12V. Channel 1 shows the regulated output voltage (ac coupled). Channel 2 shows the auxilliary output voltage (ac coupled). Channel 4 shows the stepped load current.

7.1 50Ω on Auxilliary Output; 200mA to 500mA Transient on Regulated Output

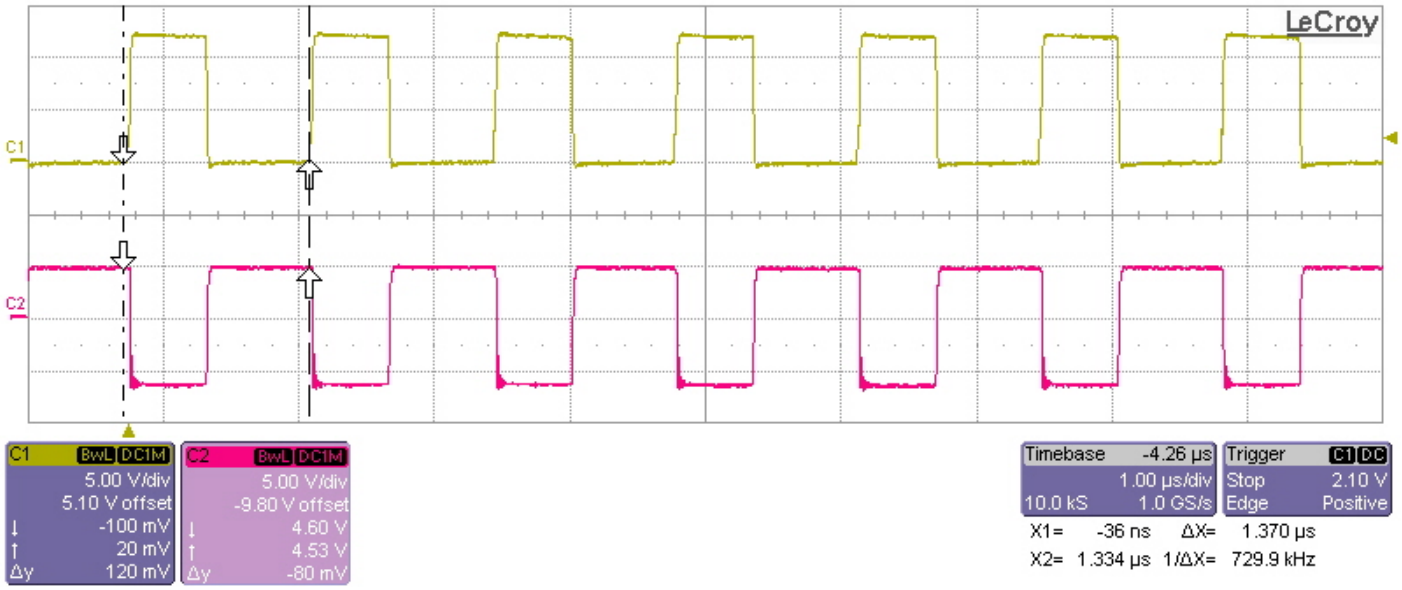


7.2 10Ω on Regulated Output; 50mA to 100mA Transient on Auxilliary Output



8 Switching Waveforms

The input voltage was 12V. The regulated output was loaded with 500mA and the auxilliary output was loaded with 200mA. Channel 1 shows the voltage on the switch node. Channel 2 shows the voltage on the anode of D1.



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