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Full 120A load stresses with airflow: 300 to 500 LFM estimated

Low side FETs: stresses are peak Vds: left to right in EVM

Q103: 23.5V; Q102: 20V; Q503: 23V; Q502: 20.5V; Q203: 24.5V; Q202:19.6V;  
Q603: 22V; Q602: 22V

High side FETs: stresses are thermal: Also left to right in EVM all in degrees Celsius  
Q101: 58; Q501: 60; Q201: 63; Q601: 53 all from 25 degrees C ambient

90A load with no forced airflow: hot spots are either Hi side MOSFET or a snubber resistor: All temperatures in degrees Celsius with ambient measured at 25.

Power train 1a hot spot (ref des 1xx): 65      Power train 1b hot spot (ref des 5xx): 72

Power train 2a hot spot (ref des 2xx): 75      Power train 3a hot spot (ref des 6xx): 67

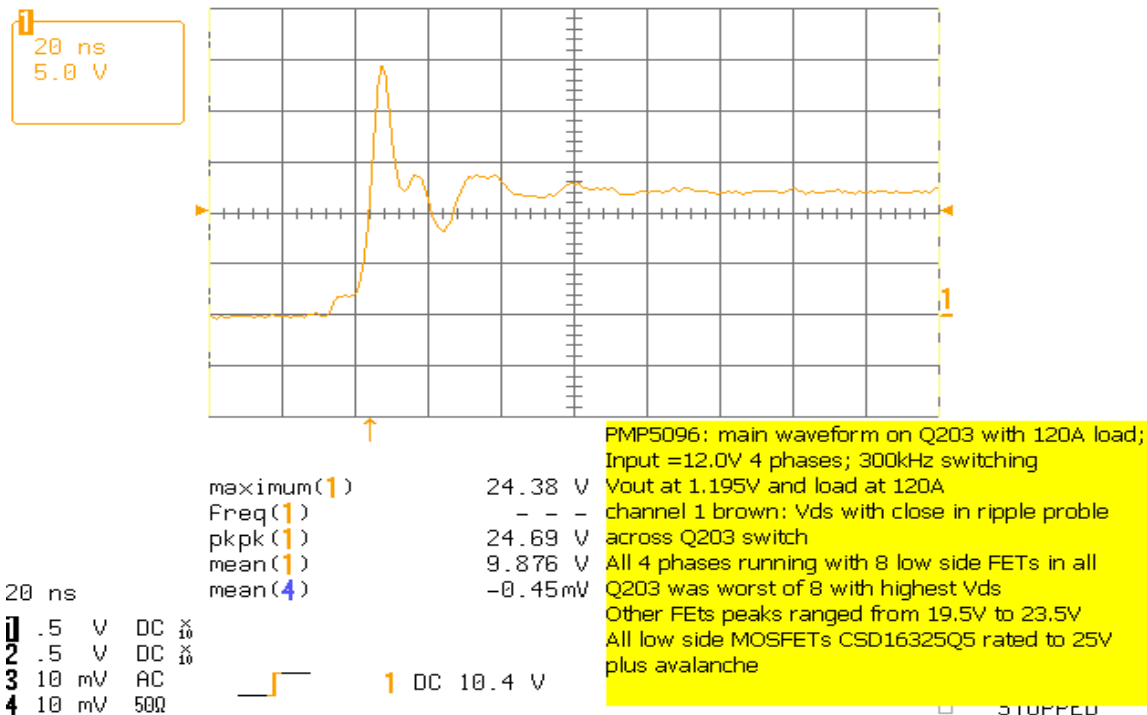
Same with 300-500 LFM airflow:

Power train 1a hot spot (ref des 1xx): 47      Power train 1b hot spot (ref des 5xx): 48

Power train 2a hot spot (ref des 2xx): 49      Power train 3a hot spot (ref des 6xx): 43

Worst Vds on Q203 FET at 120A load:

21-Oct-09      Reading Floppy Disk Drive  
15:40:22



Detailed regulation, loss and efficiency data on model t3 with 300-500LFM airflow at 10.8Vin, 12Vin and 13.2Vin: 300kHz per phase, 4 phases always when on

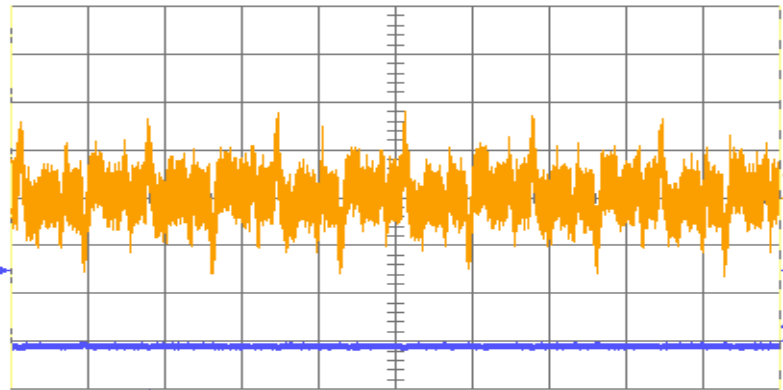
Vin Volts	Iin A	Vout Volts	Iout A	Loss W	Efficiency %
10.78	0.057	off	off	0.615	N/A
10.79	0.2785	1.191	0	3.005	N/A
10.80	1.365	1.191	10.0	2.832	80.8
10.80	2.488	1.192	20.0	3.030	88.7
10.79	3.650	1.1935	30.0	3.579	90.9
10.79	4.82	1.193	40.0	4.288	91.8
10.80	6.02	1.193	50.0	5.366	91.7
10.81	7.23	1.193	60.0	6.576	91.6
10.83	9.69	1.193	80.0	9.503	90.9
10.80	11.01	1.195	90.0	11.358	90.4
10.81	12.32	1.196	100.1	13.460	89.9
10.81	15.00	1.196	120.0	18.630	88.5
10.79	16.01	1.196	127.0	20.856	87.9
12.07	0.054	off	off	0.652	N/A
12.01	0.285	1.191	0	3.423	N/A
12.04	1.2545	1.192	10.0	3.184	78.9
12.01	2.2625	1.192	20.0	3.333	87.7
12.03	3.295	1.1925	30.0	3.864	90.3
12.01	4.35	1.193	40.0	4.524	91.3
12.03	5.42	1.193	50.0	5.553	91.5
12.02	6.525	1.1935	60.0	6.821	91.3
12.02	8.75	1.1935	80.0	9.695	90.8
12.01	9.92	1.1955	90.0	11.544	90.3
12.02	11.09	1.196	100.1	13.582	89.8
12.03	13.49	1.196	120.0	18.765	88.4
12.02	14.37	1.196	127.0	20.835	87.9
13.21	0.05	off	off	0.661	N/A
13.20	0.2935	1.1915	0	3.874	N/A
13.21	1.173	1.193	10.0	3.565	77.0
13.20	2.0835	1.192	20.0	3.662	86.7
13.21	3.024	1.1925	30.0	4.172	89.6
13.20	3.98	1.193	40.0	4.816	90.8
13.19	4.96	1.193	50.0	5.772	91.2
13.20	5.95	1.193	60.0	6.960	91.1
13.20	8.00	1.1945	80.0	10.040	90.5
13.20	9.05	1.196	90.0	11.820	90.1
13.20	10.12	1.196	100.1	13.864	89.6
13.19	12.31	1.196	120.0	18.849	88.4
13.20	13.10	1.196	127.0	21.028	87.8

Worst case: Q101 at 63 degrees C; Q501 at 65; Q201 at 70; Q601 at 57 amb. 25

3-Nov-09  
20:18:30

10 ms  
5.0mV

10 ms  
10.0mV



maximum(1) 9.06mV  
 Freq(1) - - -  
 pkpk(1) 17.34mV  
 mean(1) 93µV  
 mean(4) -1.47mV

10 ms BwL  
 1 5 mV AC  
 2 .2 V DC 10  
 3 10 mV AC  
 4 10 mV 50Ω

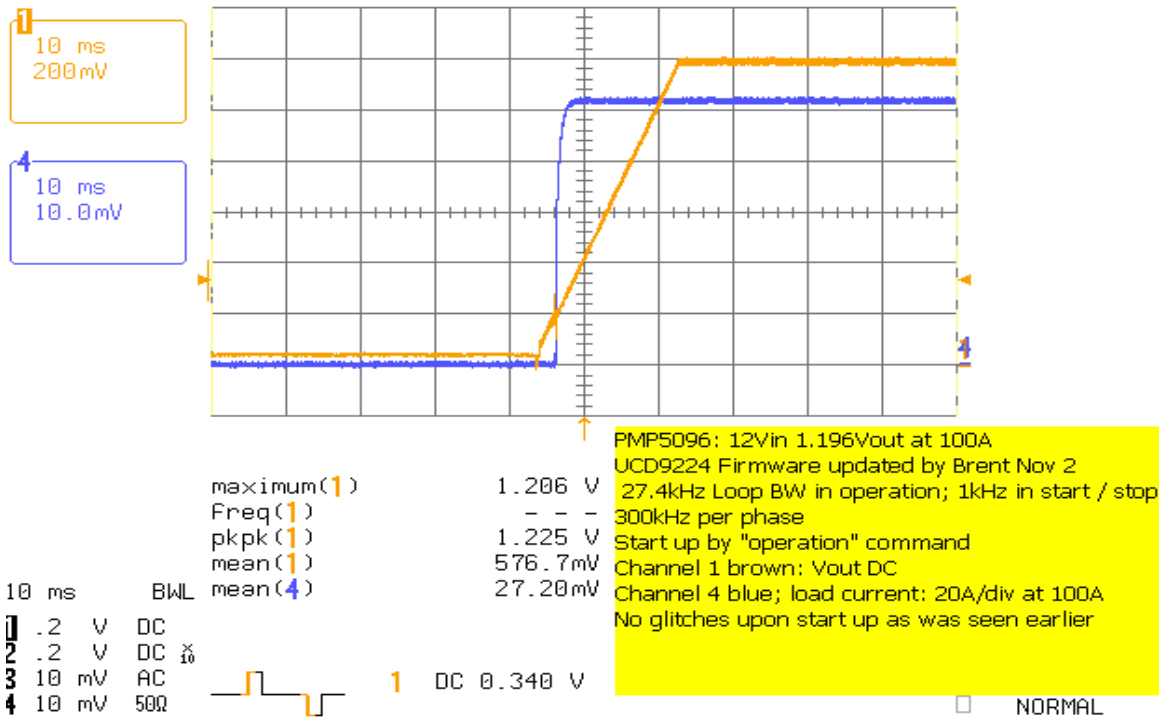
4 DC 14.6mV

PMP5096: 12Vin 1.196Vout at 127A  
 UCD9224 Firmware updated by brent Nov 2  
 27.4kHz Loop BW 300kHz per phase  
 Output ripple at C66  
 17.3mV peak to peak  
 a little quieter than before update  
 same rep rate of pulses at about 600Hz

Load current at 127A, but not thru current probe which is rated to 100A

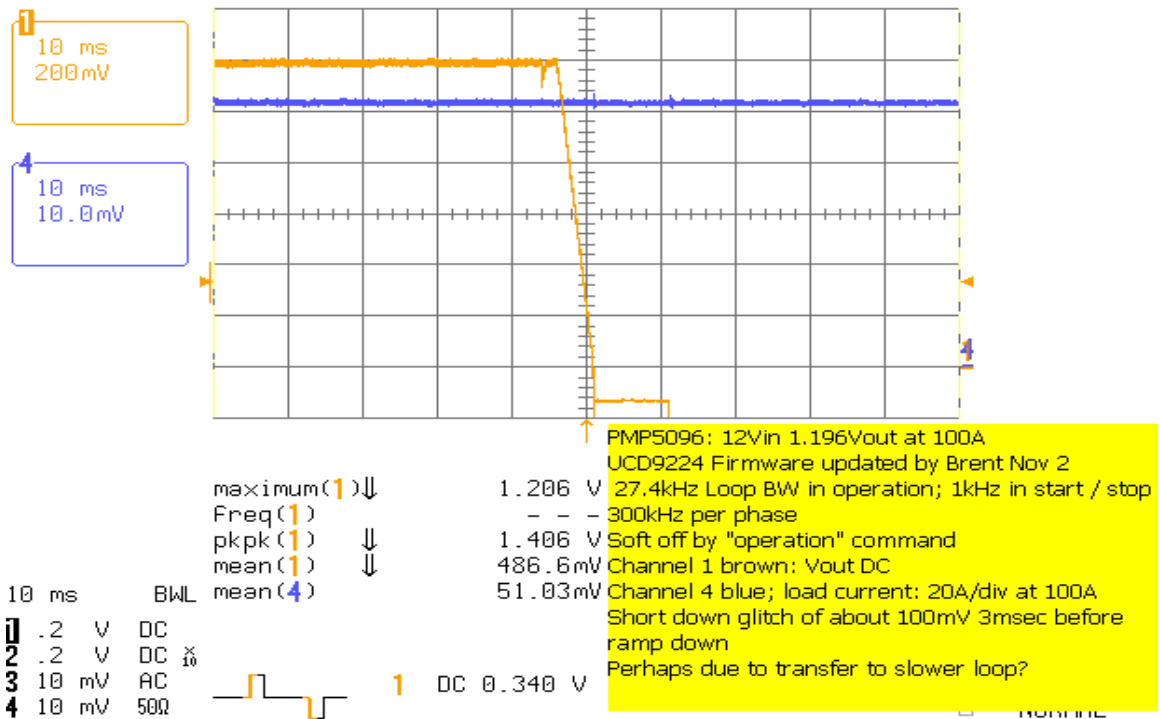
Start up and shut down with new Brent firmware and 27.4kHz loop in normal operation, but only 1kHz loop in start up / shut down:

4-Nov-09  
13:16:46



And Shut down:

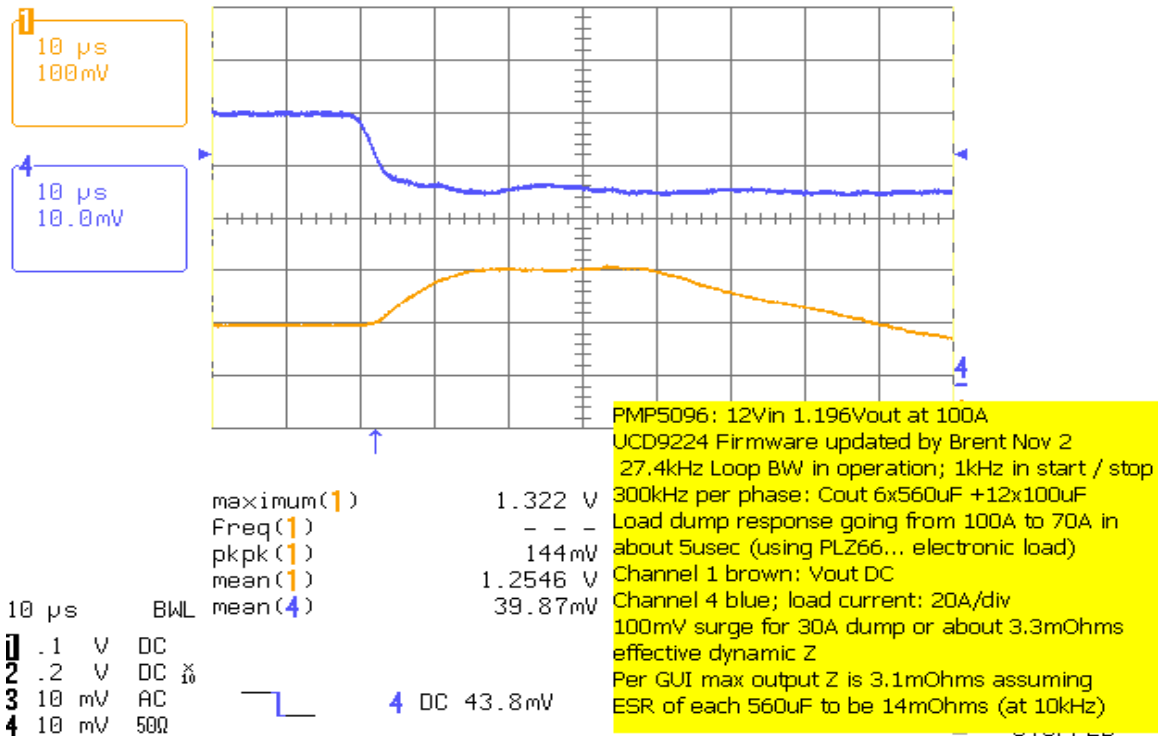
4-Nov-09  
13:18:30



Qq

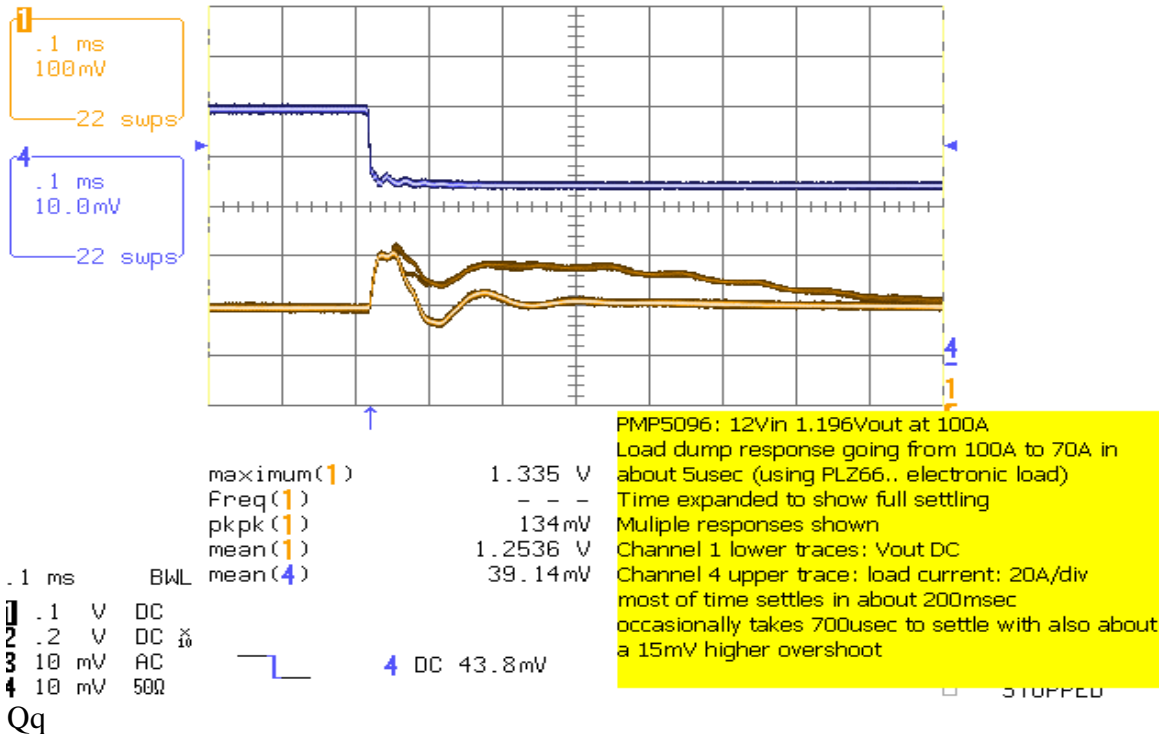
Load Dump response using PLZ660 load dynamics:  
 100A to 70A at 10A/usec rep rate 28Hz: Initial 80usec

4-Nov-09  
 13:53:10



Long term dynamic response until settling:

4-Nov-09  
 13:54:32



Qq



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