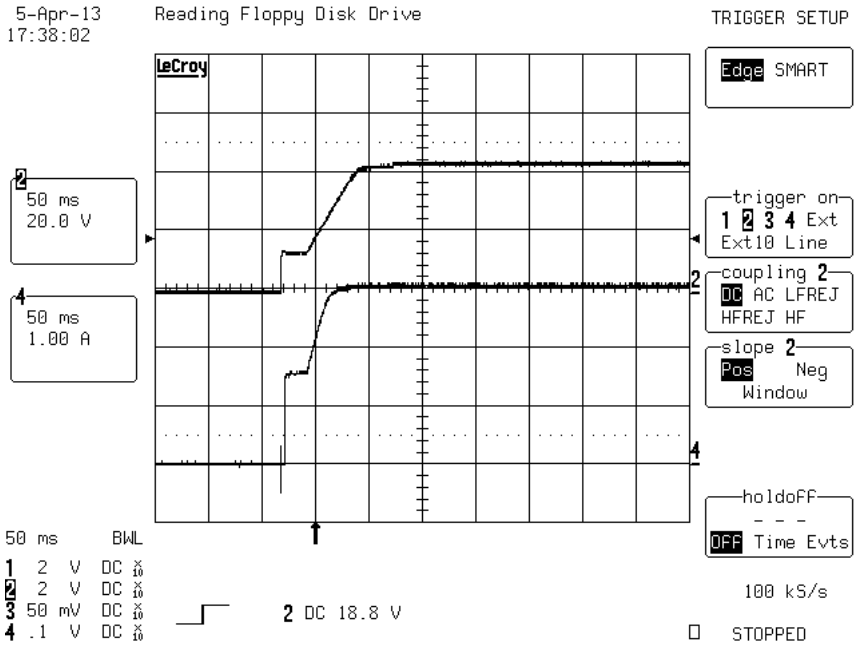
1 Startup

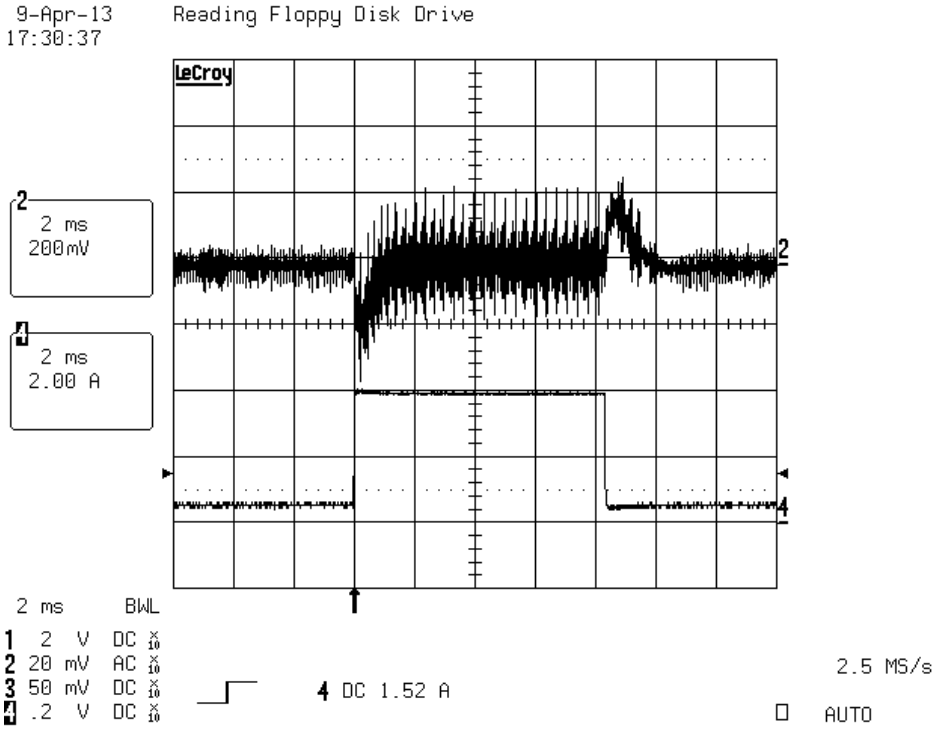
The startup waveform for the 44 volts is shown in the figure below. The input is 14 volts. The lower trace is the load current



2 EFFICIENCY

Vin	Iin	Pin	Vout	Iout	Pout	efficiency
14	3.36	47.04	44.1	1	44.1	93.75
14	6.7	93.8	44.1	2	88.2	94.02985
14	9.95	139.3	44.1	3	132.3	94.97487
14	13.34	186.76	44.1	4	176.4	94.45277
14	16.55	231.7	44.1	5	220.5	95.16616
14	19.9	278.6	44.1	6	264.6	94.97487
14	23.1	323.4	44.1	7	308.7	95.45455

3 Load step response

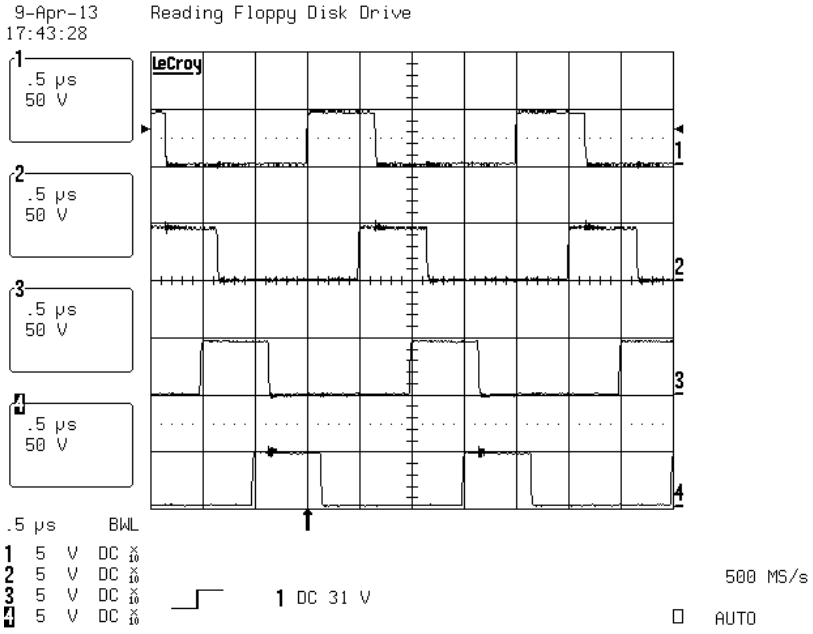


The bottom trace is a output current step, and top is the 44 volt output response.

4 Input voltage turn on and over voltage

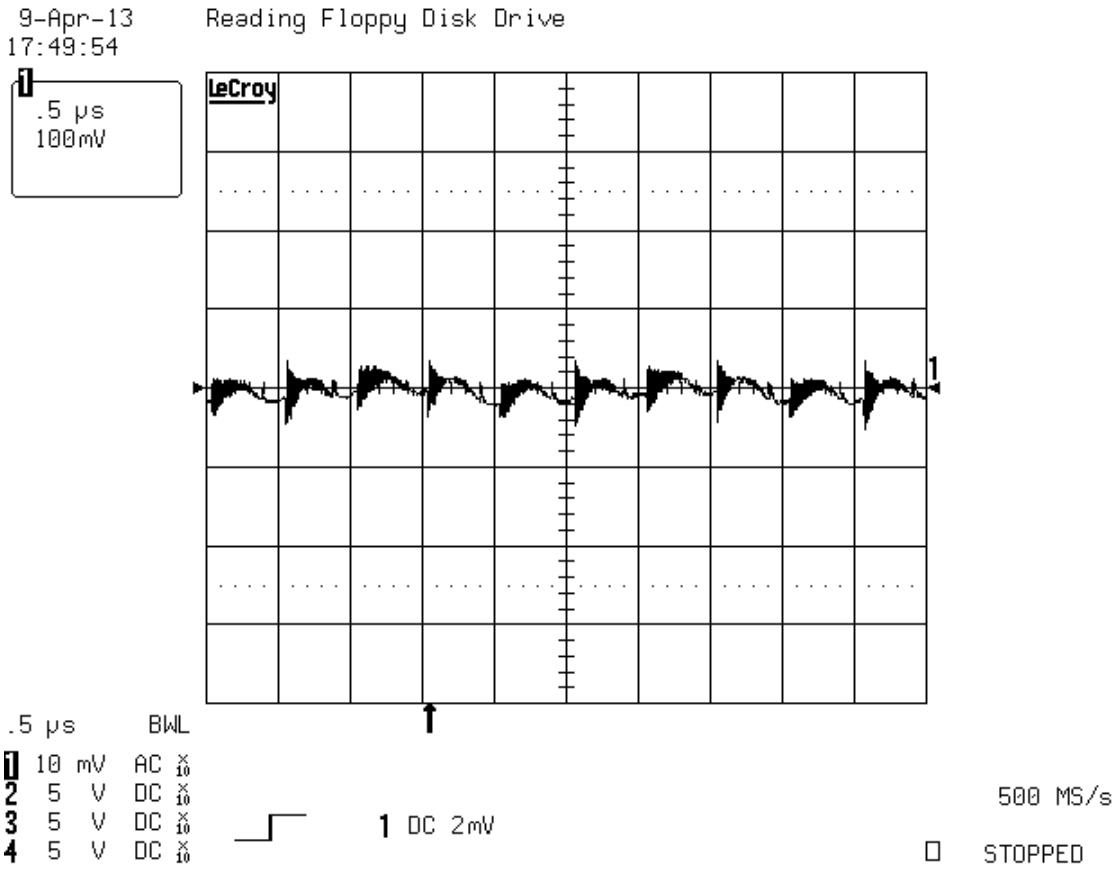
Under voltage lock out is 8 volts and over voltage lock out is 17.8 volts. Note that these values can be adjusted using R3,R12,R7,R11.

4 Drain wave forms

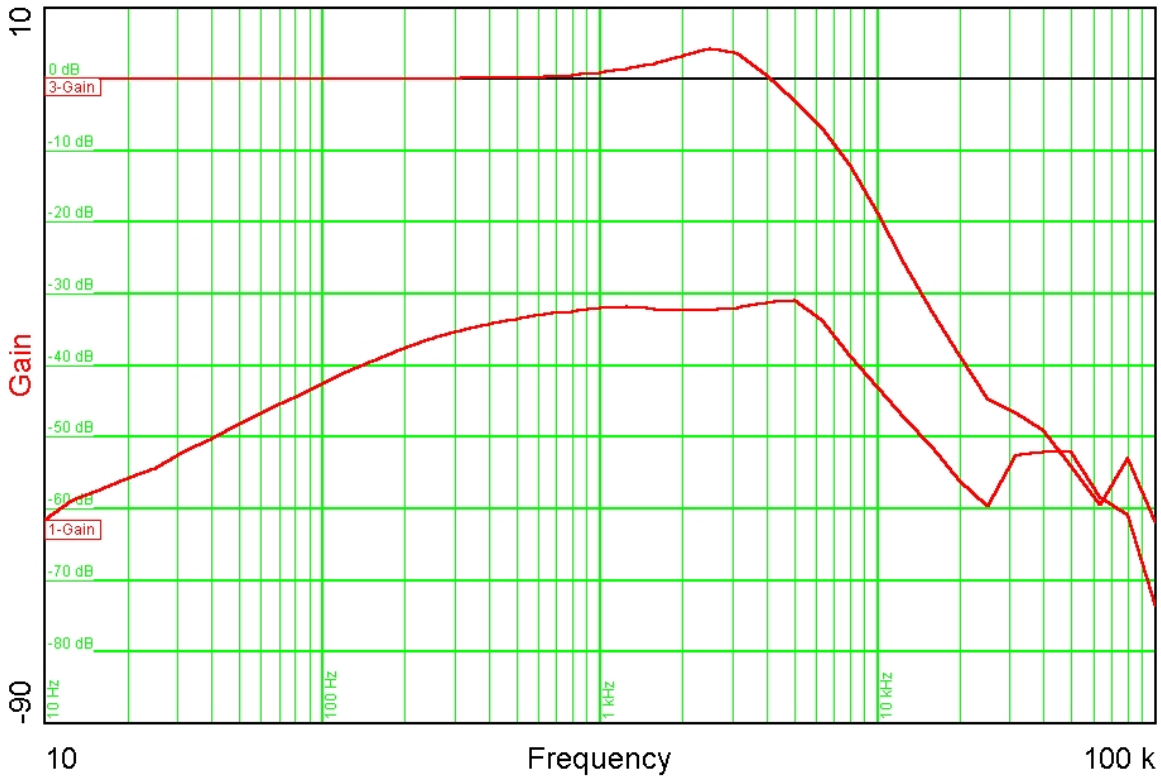


The four FET drains at 4 amp load

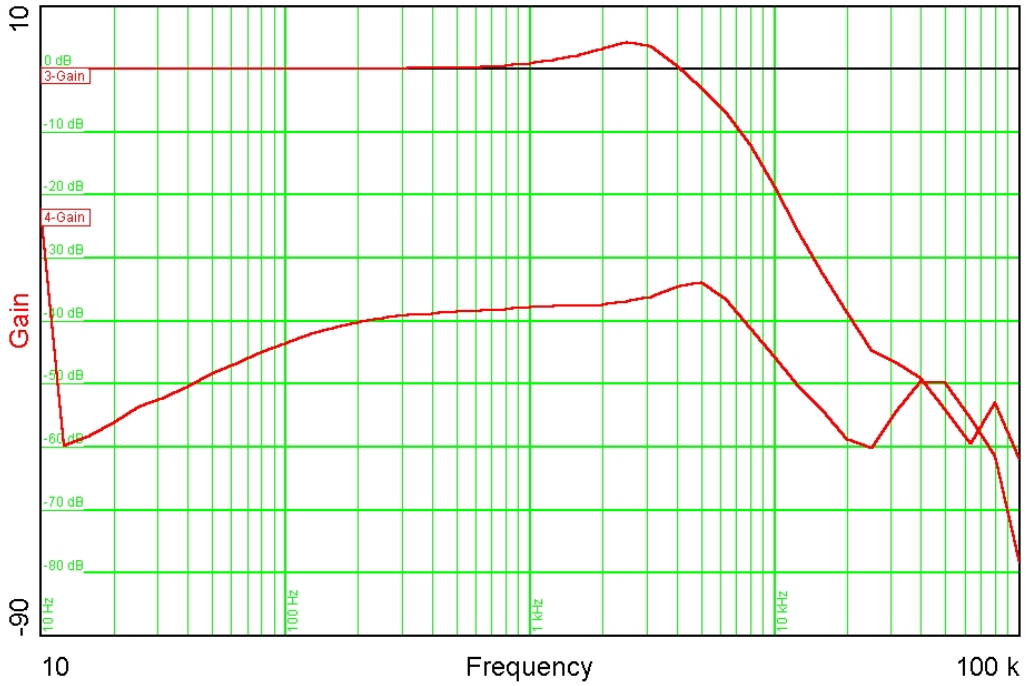
5 Output ripple



6 Power Supply Rejection

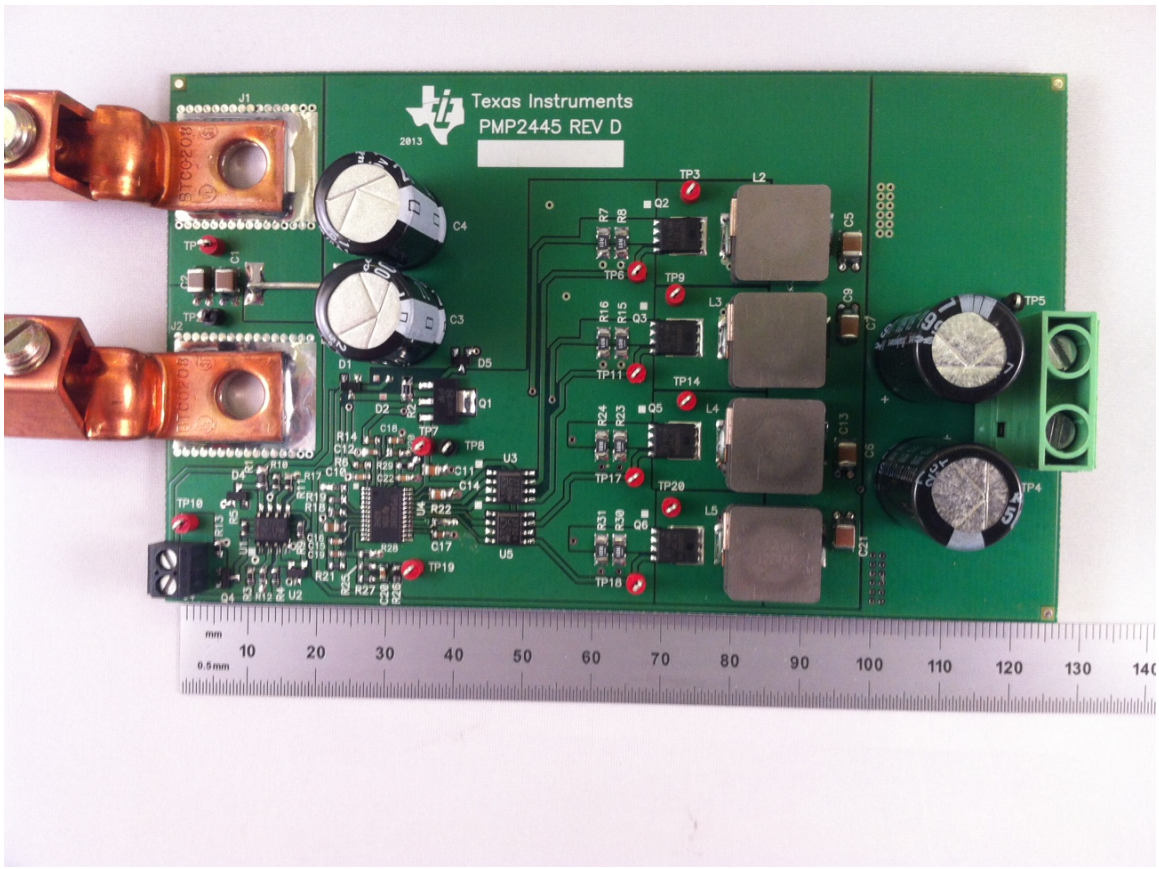


The top trace is the output /input with the boost disabled, which shows no power supply rejection except at higher frequencies due to the attenuation of the output filter. The bottom trace is the output/ input with the boost operating.



This is the same as above except that I increased the mid-band loop gain by 6 db, which resulted in a 6 db improvement in power supply rejection.

7 Photo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