Test Data
For PMP7800.3
05/11/2012

Input Voltage: 24V (nominal)

Output Voltages: 3.3V@.07A; 1.8V@0.23A; 1.8V@0.23A

Circuit Description

The PMP7800.3 design is a two-stage buck converter providing three outputs:

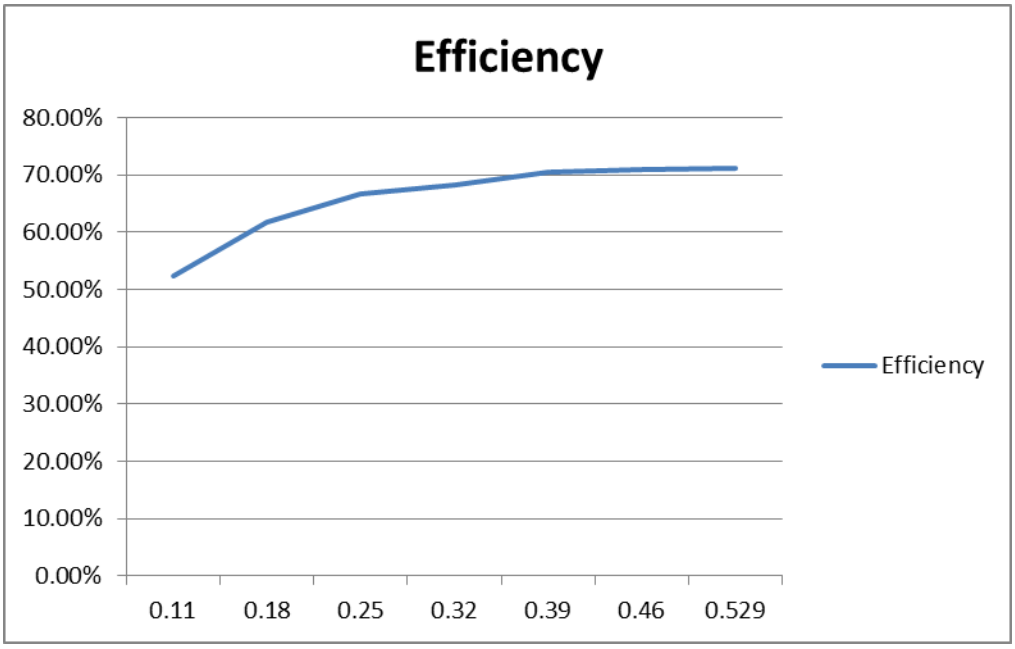
- 3.3V at 0.07A (notated as “3.3V”)
- 1.8V at 0.23A (notated as “1.8V VDD”)
- 1.8V at 0.23A (notated as “1.8V VDDa” which makes use of an additional output stage filter)

The input voltage range of the circuit is 21.6V to 26.4V.

Board Photo

Board size is approximately 1.25” x 1.25”

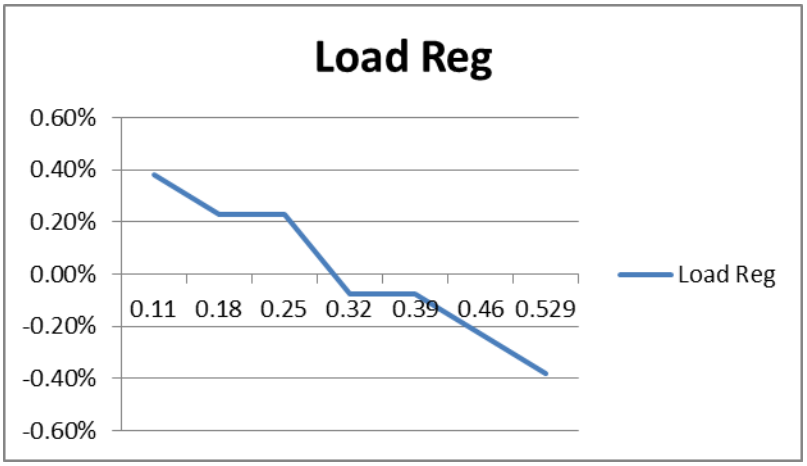
System Efficiency



Efficiency Data

Efficiency												
Vin	**Iin**	**Vout 1.8a**	**Iout 1.8a**	**Vout 1.8**	**Iout 1.8**	**Vout 3.3**	**Iout 3.3**	**Pin**	**Pout**	**Ploss**	**Eff**	**Totol Iout**
24	0.017	1.81	0.05	1.81	0.05	3.295	0.01	0.408	0.21395	0.19405	0.524387255	0.11
24	0.024	1.81	0.08	1.81	0.08	3.29	0.02	0.576	0.3554	0.2206	0.617013889	0.18
24	0.031	1.81	0.11	1.81	0.11	3.29	0.03	0.744	0.4969	0.2471	0.667876344	0.25
24	0.039	1.81	0.14	1.81	0.14	3.28	0.04	0.936	0.638	0.298	0.681623932	0.32
24	0.046	1.81	0.17	1.81	0.17	3.28	0.05	1.104	0.7794	0.3246	0.705978261	0.39
24	0.054	1.81	0.2	1.81	0.2	3.275	0.06	1.296	0.9205	0.3755	0.710262346	0.46
24	0.062	1.81	0.23	1.81	0.23	3.27	0.069	1.488	1.05823	0.42977	0.711176075	0.529

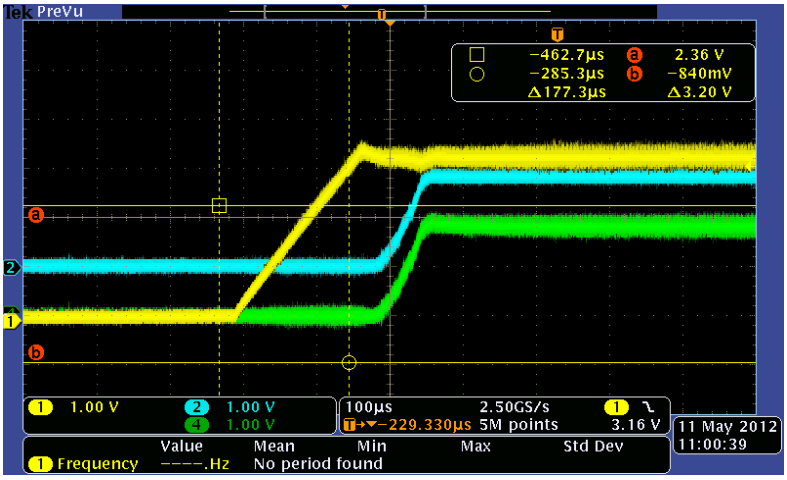
Load Regulation



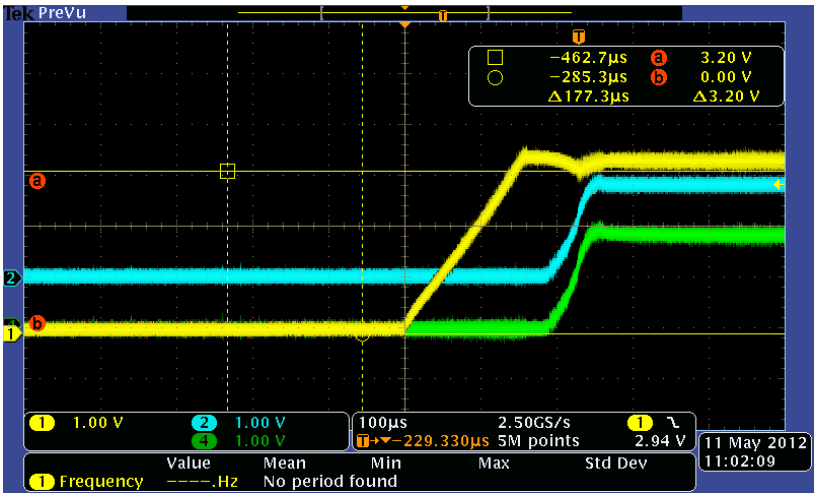
Line regulation 3.3V

Line Regulation	
3.3V	
Vin	Vout 3.3
22	3.26
23	3.26
24	3.27
25	3.27
26	3.27

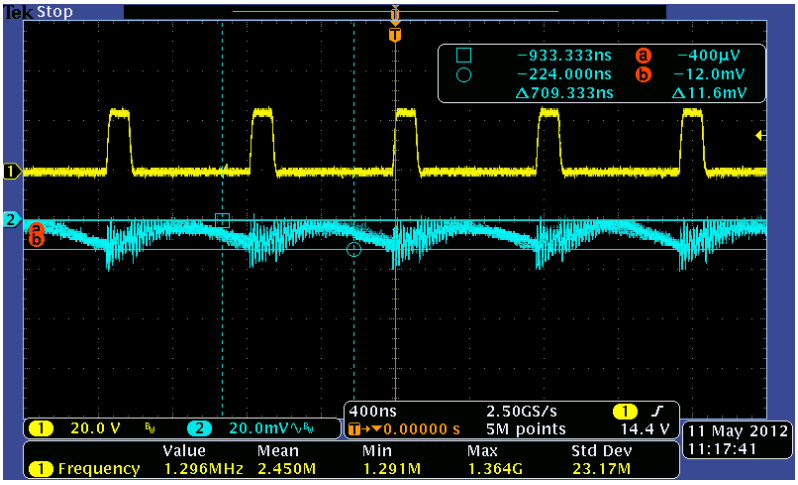
Waveforms



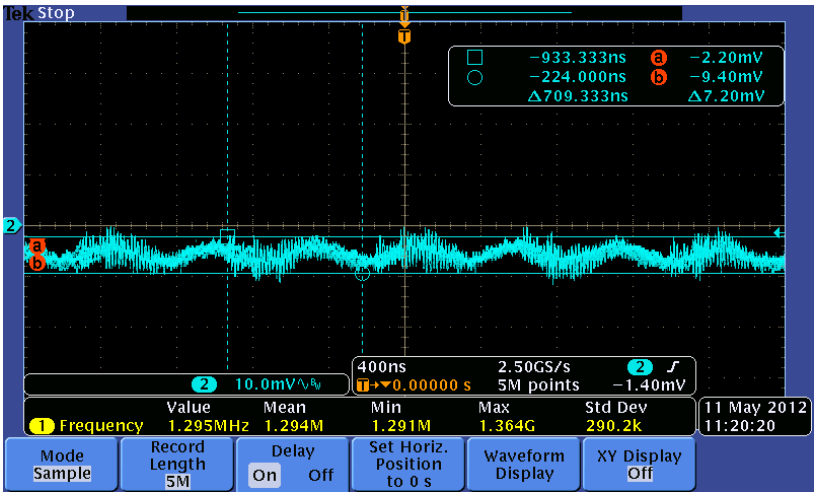
Start Up All Rails Full Load



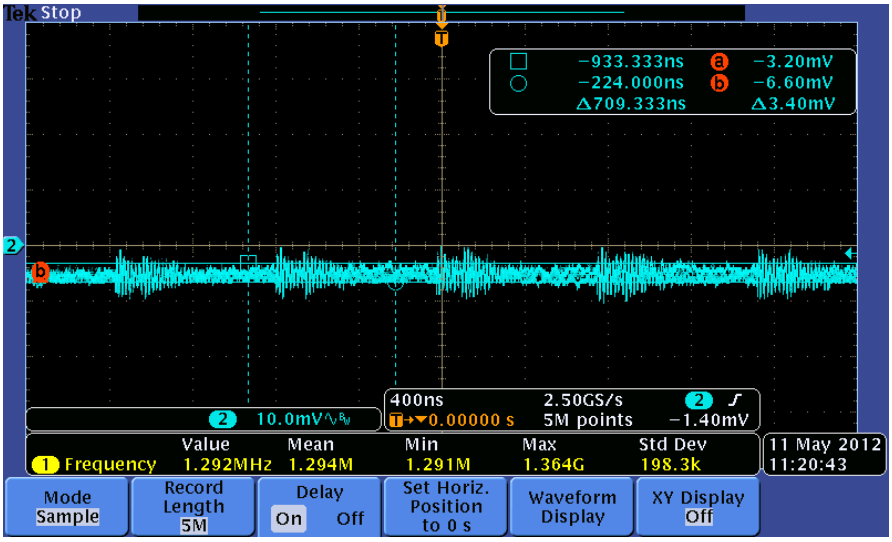
No Load Start up – Dips to 3.2V on start up.



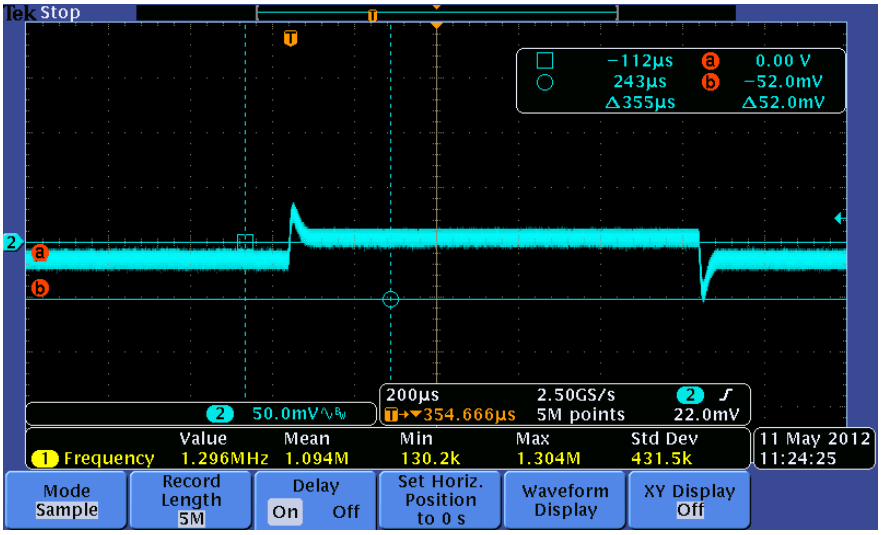
3.3V VSwitch and 3.3V ripple Full load – 11mV peak to peak



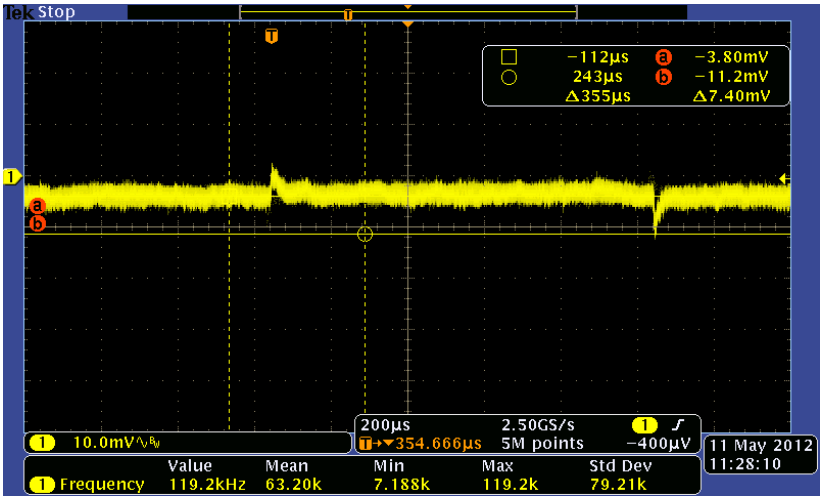
1.8V VDD Vout Ripple – 7mV peak to peak; measured across C5



1.8V VDDa Vout Ripple -4mV peak to peak

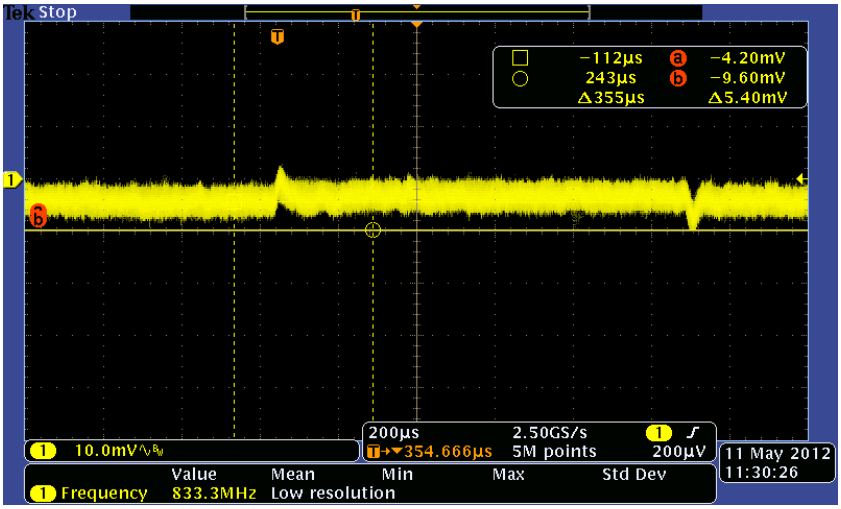


Transient Response 3.3V 0.2A to 0.4A at 160mA / us -50mV Droop



1.8V VDD Transient Response 0.1A to 0.2A 160mA/us

Measured across C5 - 7.5mV Droop



1.8V VDDa Transient Response 0.1A to 0.2A 160mA/us – 5mV Droop

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