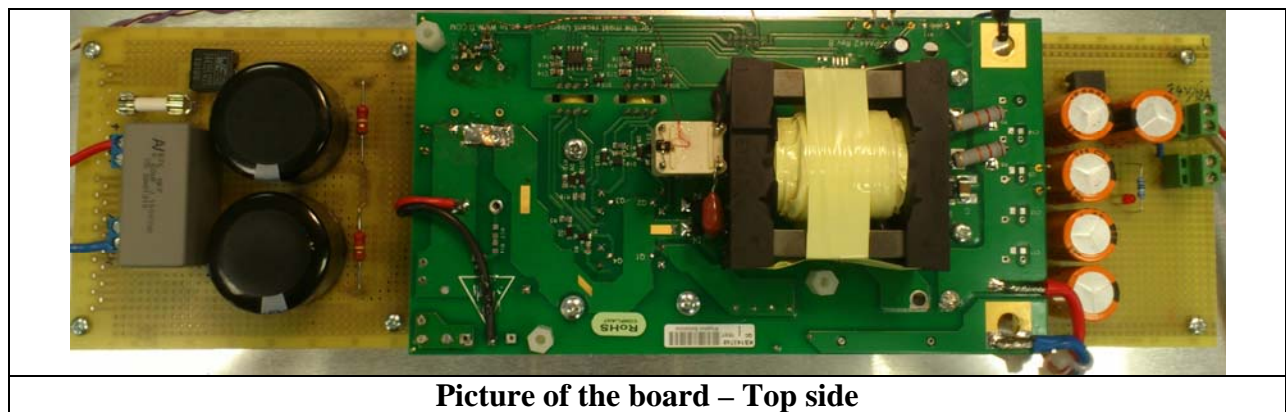


PMP8606 Rev.B Test Results

The **PMP8606** is a 300W galvanic isolated Full Bridge Phase Shift converter in voltage mode using voltage doubler rectification at the secondary side. This design utilizing UCC28950.

1 Design description

Nr.	Description	Capability	Remarks	Comments
1	Minimum Input voltage	350V	DC	
2	Maximum Input voltage	750V	DC	
3	Output voltage	24V		
4	Isolation Primary - secondary	3500Vac		
5	Switching frequency	100kHz		
6	DC accuracy/tolerance for the output voltage	+/- 1%.		
7	Output voltage ripple	50mVpp	(20MHz BW)	
8	Maximum continuous output current	12A		
9	Efficiency	>93%	for currents >6A	see the measurements
10	Over current detection	~12.5A	Hiccup mode	
11	Transient performance			see the measurements
12	Overshoot	<100mV	output current 7App	see the measurements
13	Undershoot	<100mV	output current 7App	see the measurements
14	ON/OFF function		NA	
15	Power good (PGOOD)	No function available	NA	
16	Board size	300mm x 100mm		
17	Absolute maximum components height - top side	35mm		
18	Absolute maximum components height - bottom side	8mm		
19	Component placement	Top & Bottom side		
20	Power MOSFETs package	TO220		
21	Operating temperature range	-40 to +60 deg C.		



This board has been tested, according to the test report, 350V, 500Vin, full load, with a cooling fan with 32 cfm placed at 10cm distance.

PMP8606 Rev.B Test Results

2 Efficiency

The efficiency data are shown in the graph below.

The load consisted of an electronic load, manually adjusted;

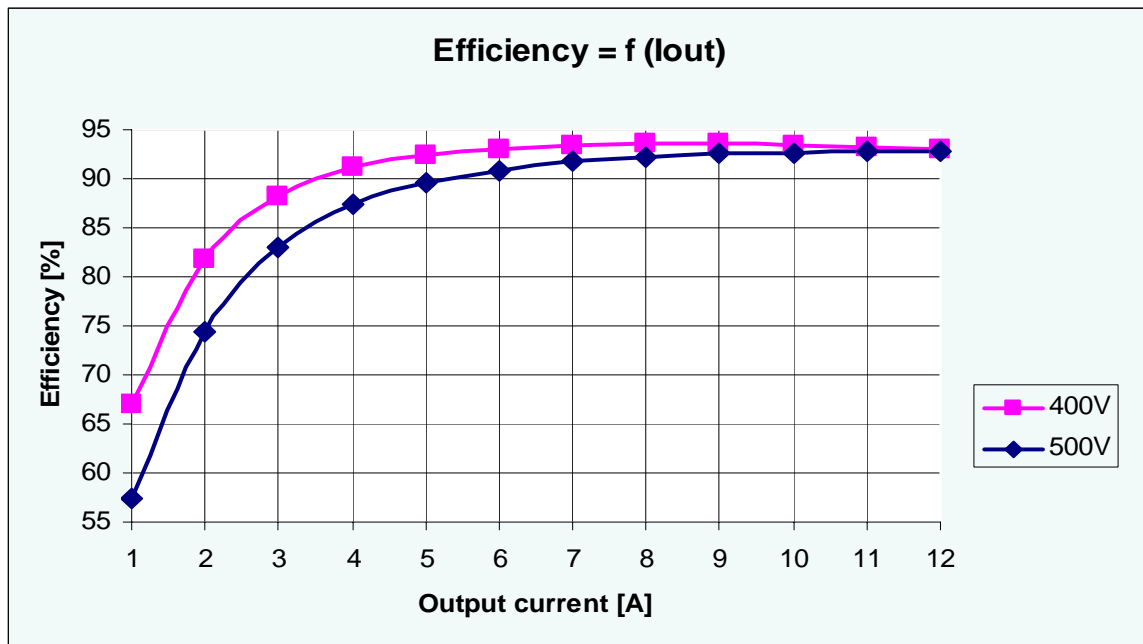
Efficiency curve measured at 400V and 500Vin; the graph shows the efficiency versus output current (maximum 24V*12A)

400

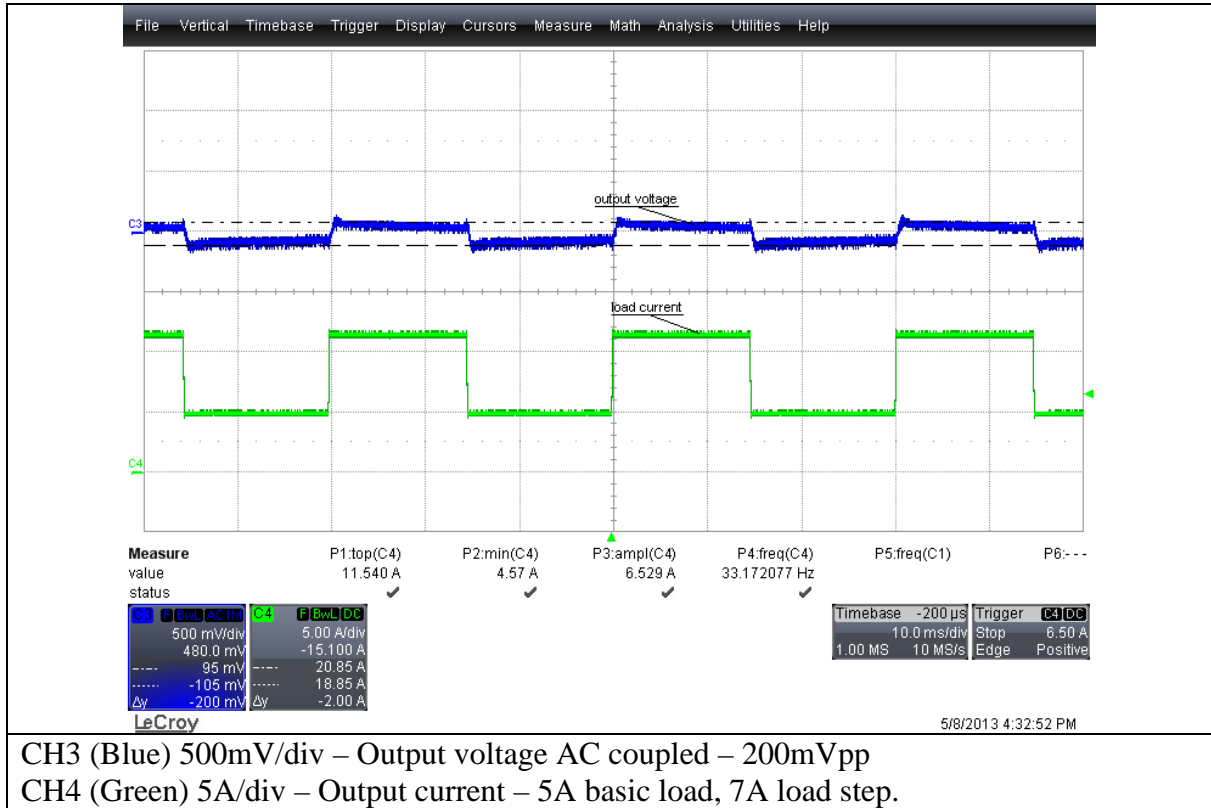
U1out [V]	23.85	23.83	23.86	23.87	23.87	23.87	23.88	23.88	23.88	23.88	23.88	23.88	23.88
I1out [A]	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0
P1out [W]	0.00	23.83	47.72	71.61	95.48	119.35	143.28	167.16	191.04	214.92	238.80	262.68	286.56
Iin [mA]	20	89	146	203	262	323	385	447	510	574	639	704	770
Pin [W]	8	36	58	81	105	129	154	179	204	230	256	282	308
Plosses [W]	8.00	11.77	10.68	9.59	9.32	9.85	10.72	11.64	12.96	14.68	16.80	18.92	21.44
eta [%]	0.00	66.94	81.71	88.19	91.11	92.38	93.04	93.49	93.65	93.61	93.43	93.28	93.04

500

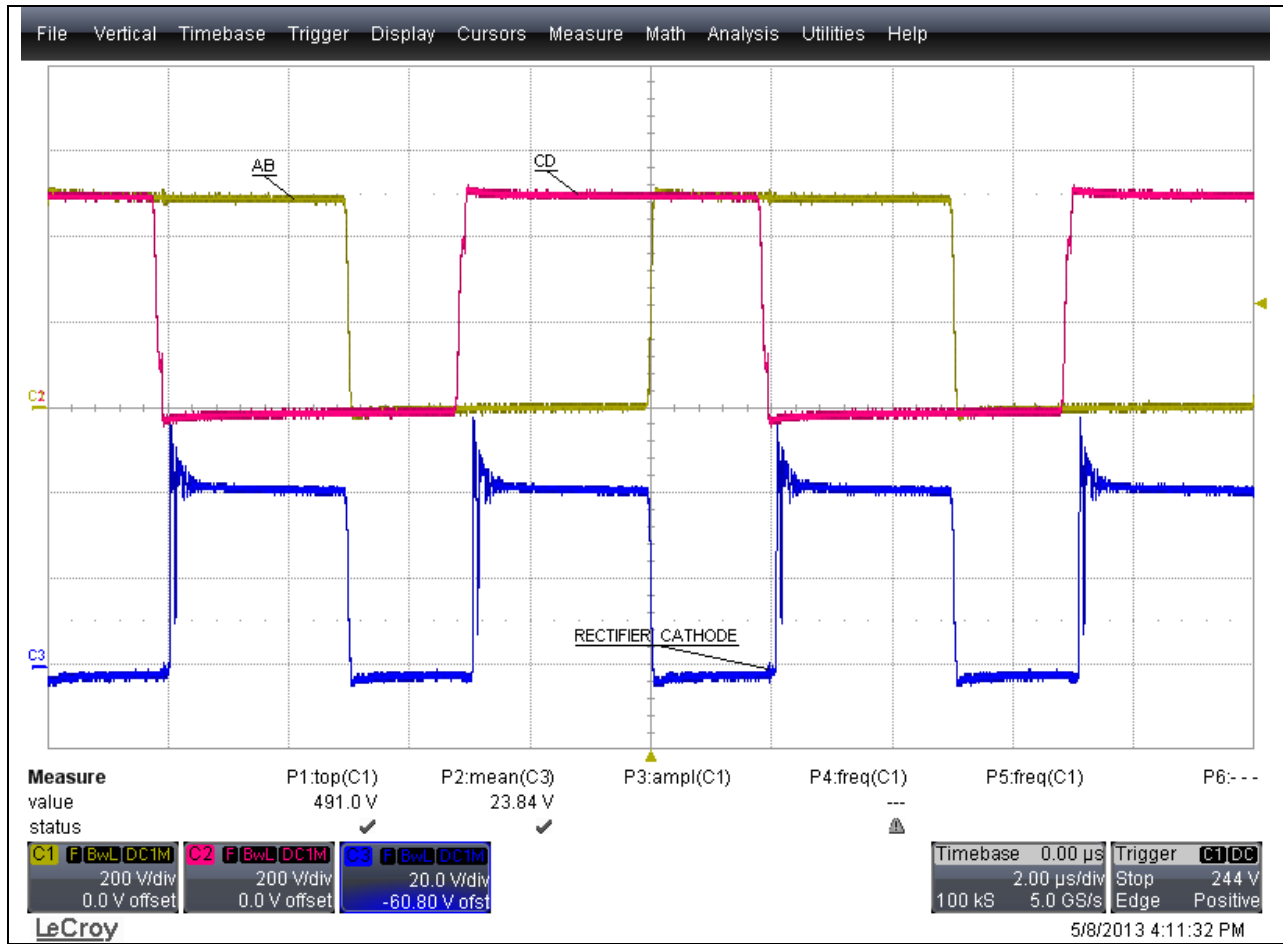
U1out [V]	23.85	23.80	23.81	23.80	23.84	23.86	23.86	23.86	23.86	23.86	23.87	23.87	23.88
I1out [A]	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0
P1out [W]	0.00	23.80	47.62	71.40	95.36	119.30	143.16	167.02	190.88	214.74	238.70	262.57	286.56
Iin [mA]	9	83	128	172	218	266	315	364	414	464	515	566	618
Pin [W]	5	42	64	86	109	133	158	182	207	232	258	283	309
Plosses [W]	4.50	17.70	16.38	14.60	13.64	13.70	14.34	14.98	16.12	17.26	18.80	20.43	22.44
eta [%]	0.00	57.35	74.41	83.02	87.49	89.70	90.90	91.77	92.21	92.56	92.70	92.78	92.74



3 Load step response

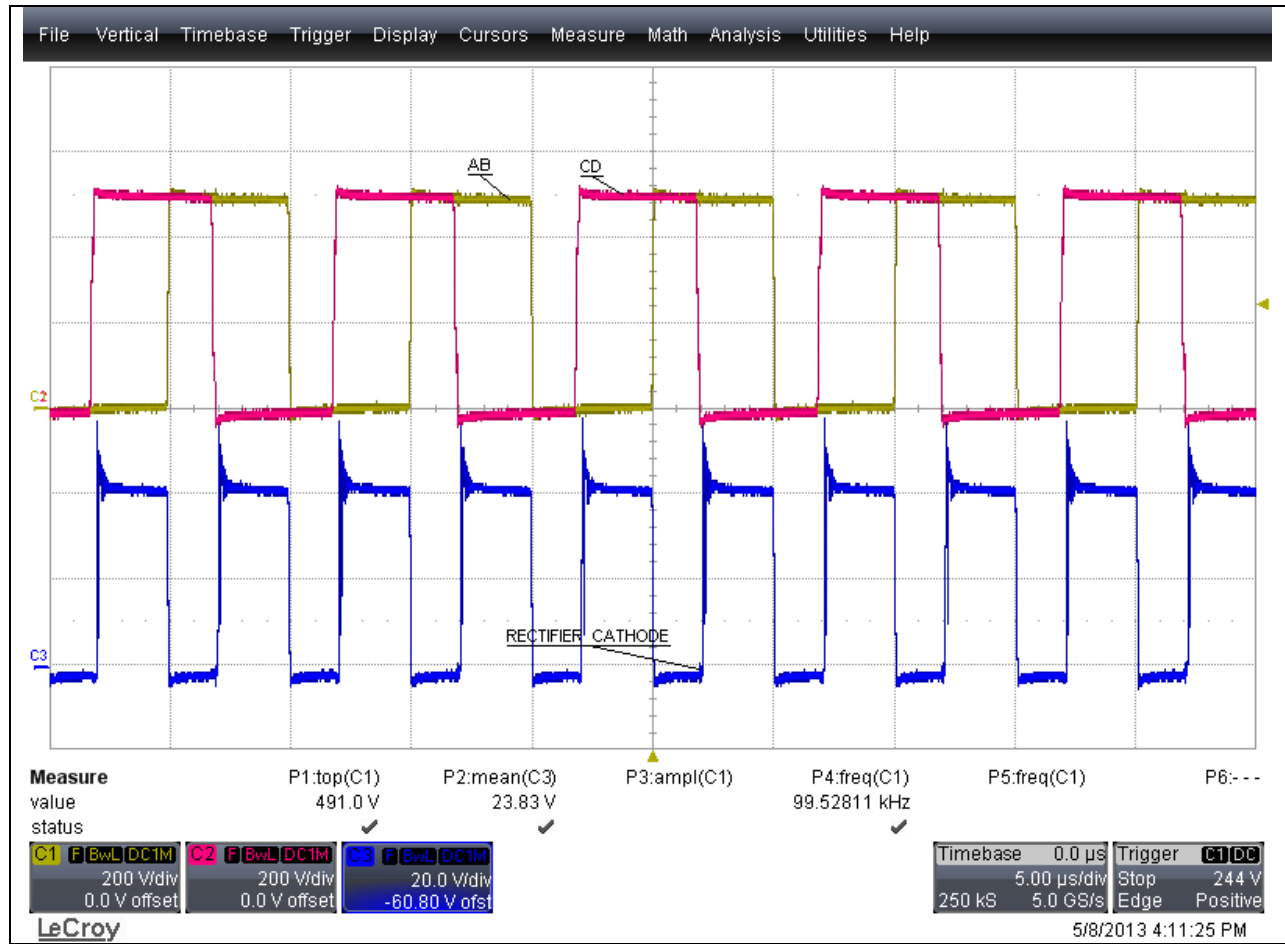


4 Switching Node Waveform



Primary to secondary switch node wave form
 CH1 (Yellow) 200V/div – Primary voltage AB Node
 CH2 (Red) 200V/div – Primary voltage CD Node
 CH3 (Blue) – 20V/div - Secondary – in front of storage choke

PMP8606 Rev.B Test Results

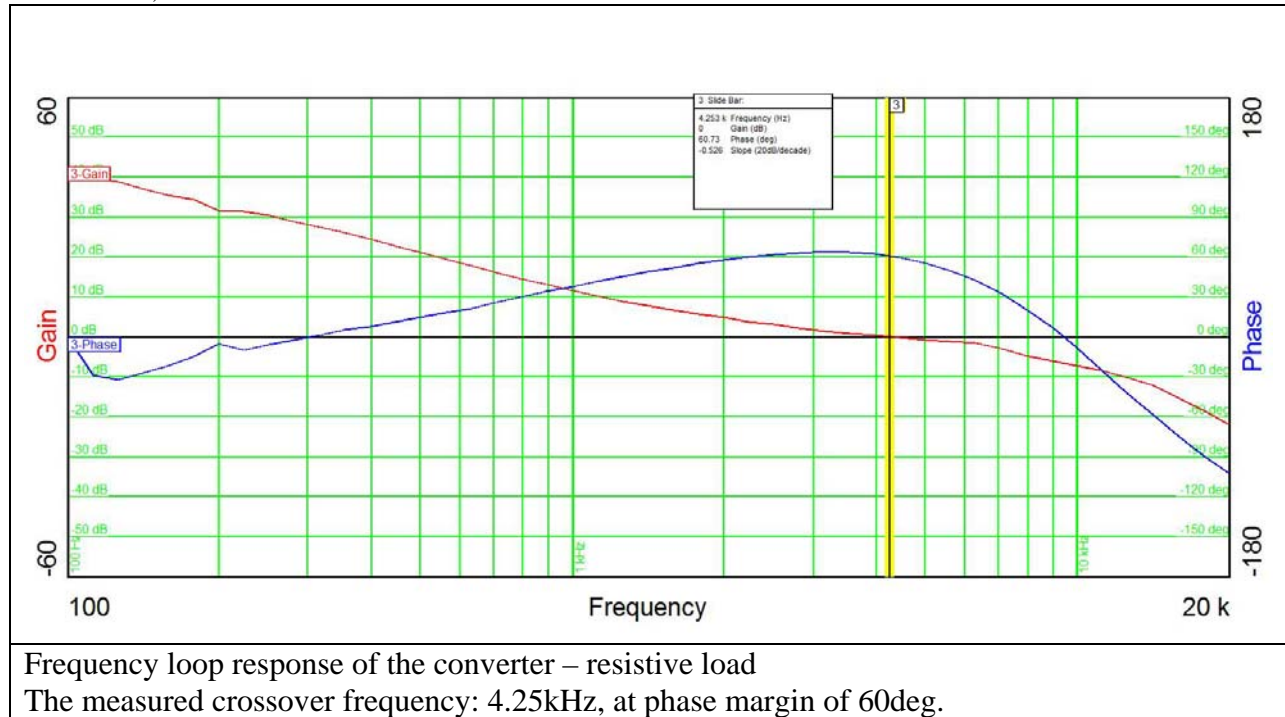


Primary to secondary switch node wave form
 CH1 (Yellow) 200V/div – Primary voltage AB Node
 CH2 (Red) 200V/div – Primary voltage CD Node
 CH3 (Blue) – 20V/div - Secondary – in front of storage choke

PMP8606 Rev.B Test Results

Loop response

Vin = 400V, load =7.5A.



PMP8606 Rev.B Test Results

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2. You have full and exclusive responsibility to assure the safety and compliance of your products with all such laws and other applicable regulatory requirements, and also to assure the safety of any activities to be conducted by you and/or your employees, affiliates, contractors or designees, using the EVM. Further, you are responsible to assure that any interfaces (electronic and/or mechanical) between the EVM and any human body are designed with suitable isolation and means to safely limit accessible leakage currents to minimize the risk of electrical shock hazard.
3. Since the EVM is not a completed product, it may not meet all applicable regulatory and safety compliance standards (such as UL, CSA, VDE, CE, RoHS and WEEE) which may normally be associated with similar items. You assume full responsibility to determine and/or assure compliance with any such standards and related certifications as may be applicable. You will employ reasonable safeguards to ensure that your use of the EVM will not result in any property damage, injury or death, even if the EVM should fail to perform as described or expected.

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