



Texas Instruments

PMP4405 Test Procedure

China Power Reference Design

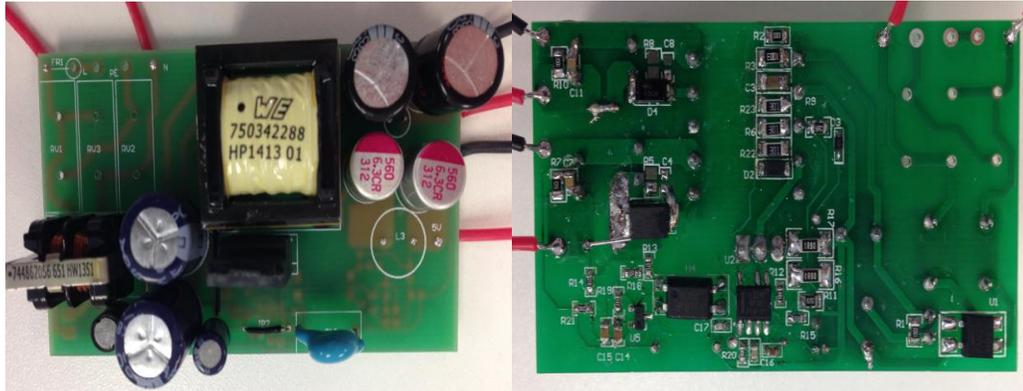
REV A

23/04/2015

1 GENERAL

1.1 PURPOSE

- To provide detailed data for evaluating and verifying the PMP4405, which uses TI new Primary Side Controller UCC28740 for 5V/2A and 26V/0.3A power supply with 40mmx70mmx30mm. The below photo shows this demo board.



REFERENCE DOCUMENTATION

Schematic PMP4405_SCH.PDF
Assembly PMP4405_PCB.PDF
BOM

1.2 TEST EQUIPMENTS

Power-meter: YOKOGAWA WT210
Multi-meter(current): Fluke 8845A
Multi-meter(voltage): Fluke 187
AC Source: Chroma 61530
Electronic load: Chroma 63110A module
Testing demoboard

2 INPUT CHARACTERISTICS

2.2.1 Load and Input Voltage Vs Efficiency Data

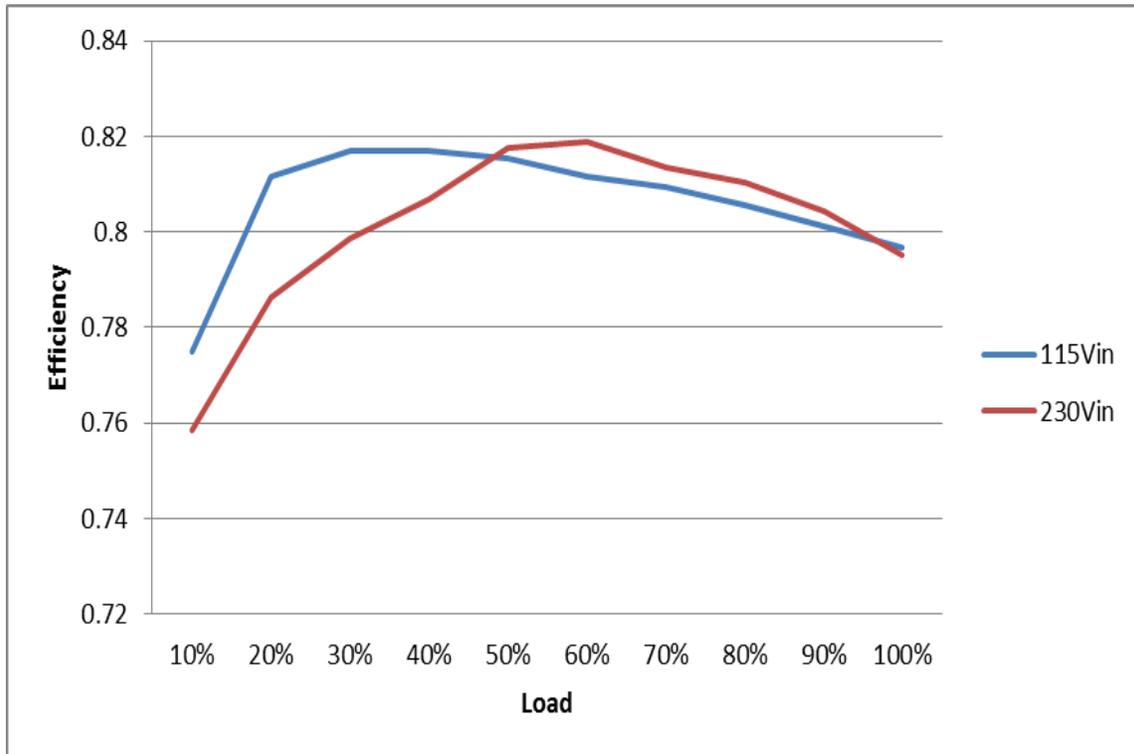
Vin=115Vac

Vin(V)	Pin(W)	Vout(V)	Iout(A)	Vout(V)	Iout(A)	Efficiency
115		4.99	0		0	
115	2.37	4.99	0.2	27.95	0.03	77.49%
115	4.60	4.99	0.4	28.95	0.06	81.15%
115	6.85	4.99	0.6	28.91	0.09	81.69%
115	9.13	4.99	0.8	28.88	0.12	81.68%
115	11.43	4.99	1.0	28.86	0.15	81.53%
115	13.77	4.99	1.2	28.83	0.18	81.17%
115	16.10	4.99	1.4	28.79	0.21	80.94%
115	18.48	4.99	1.6	28.76	0.24	80.55%
115	20.89	4.99	1.8	28.73	0.27	80.13%
115	23.31	4.99	2.0	28.70	0.30	79.67%

Vin=230Vac

Vin(V)	Pin(W)	Vout(V) 5V	Iout(A) 5V	Vout(V) 26V	Iout(A) 26V	Efficiency
230		4.99	0	26.00	0	
230	2.37	4.99	0.2	26.75	0.03	75.84%
230	4.67	4.99	0.4	27.83	0.06	78.62%
230	6.92	4.99	0.6	28.14	0.09	79.85%
230	9.15	4.99	0.8	28.23	0.12	80.67%
230	11.36	4.99	1.0	28.65	0.15	81.75%
230	13.65	4.99	1.2	28.87	0.18	81.90%
230	16.06	4.99	1.4	28.95	0.21	81.34%
230	18.45	4.99	1.6	29.03	0.24	81.02%
230	20.82	4.99	1.8	28.74	0.27	80.42%
230	23.47	4.99	2.0	28.95	0.30	79.53%

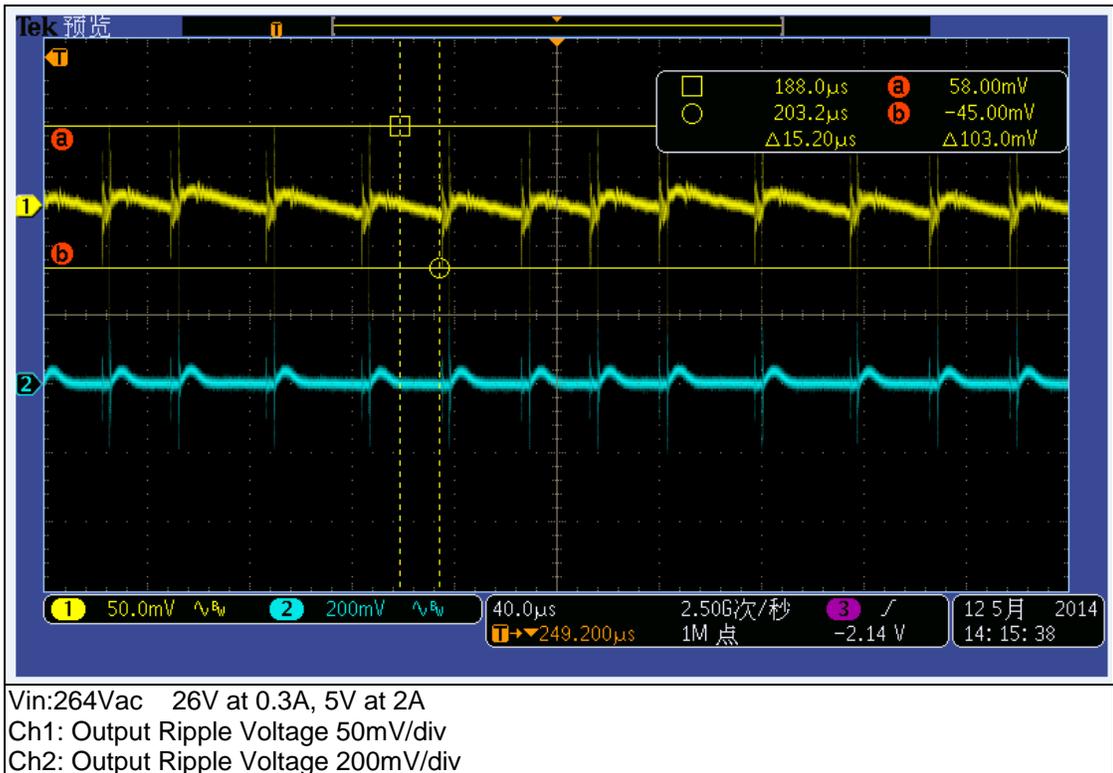
Efficiency VS Load Curve



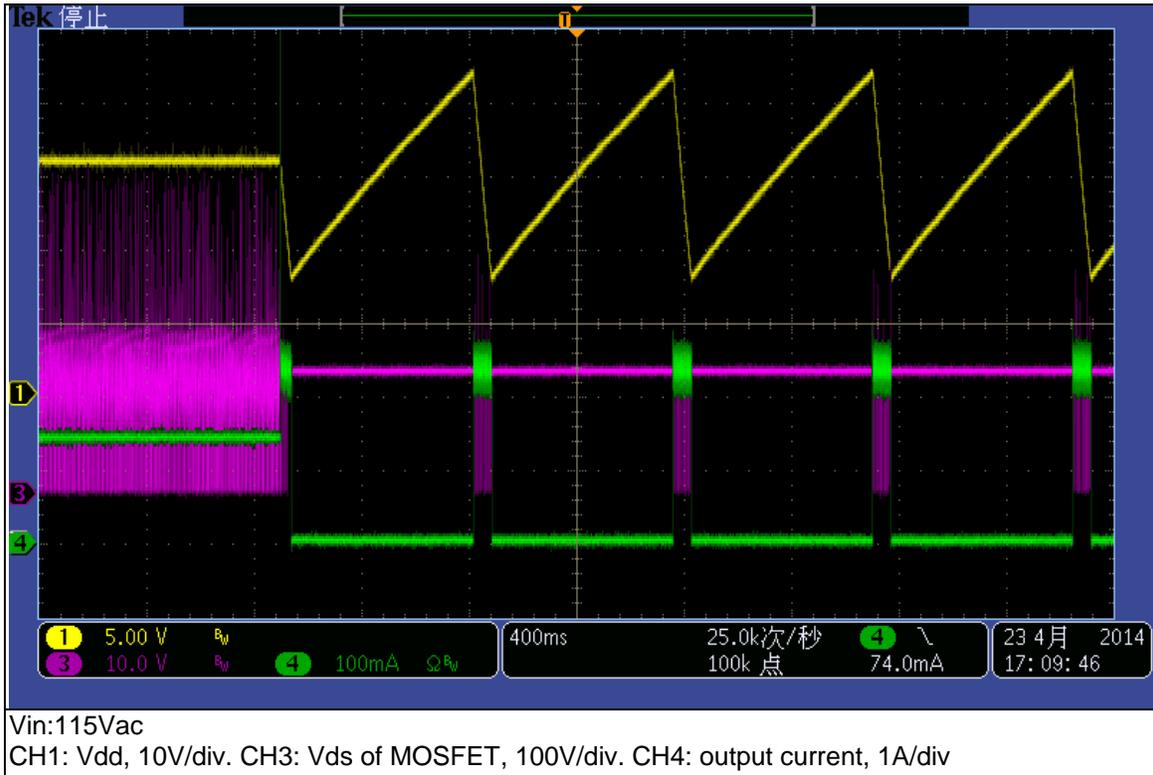
2.2.2 Input Surge Current



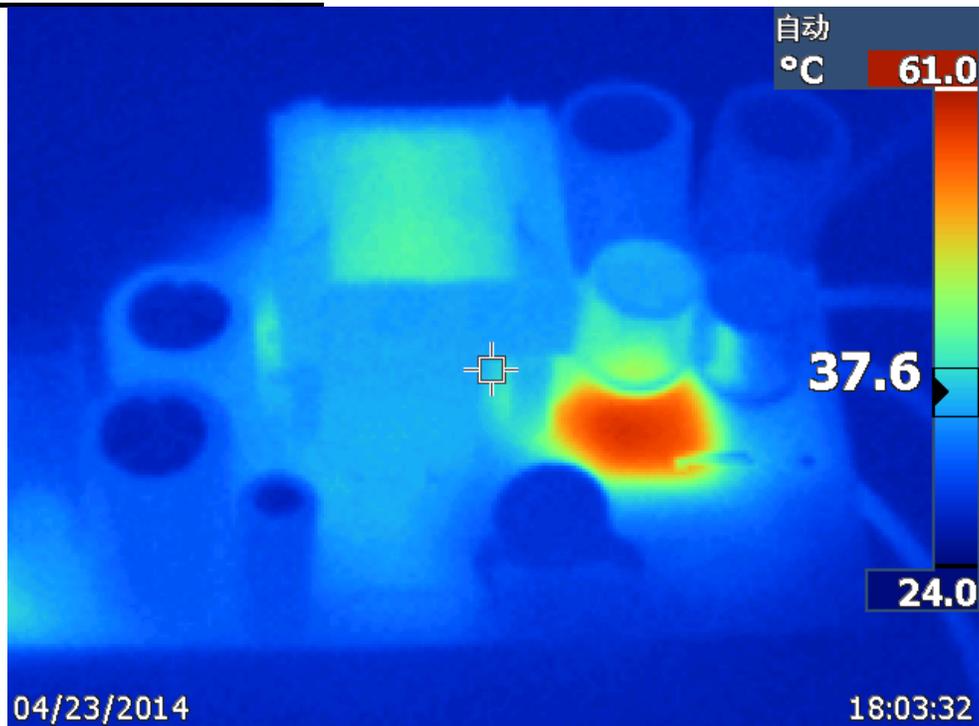
2.2.3 Output Voltage Ripple



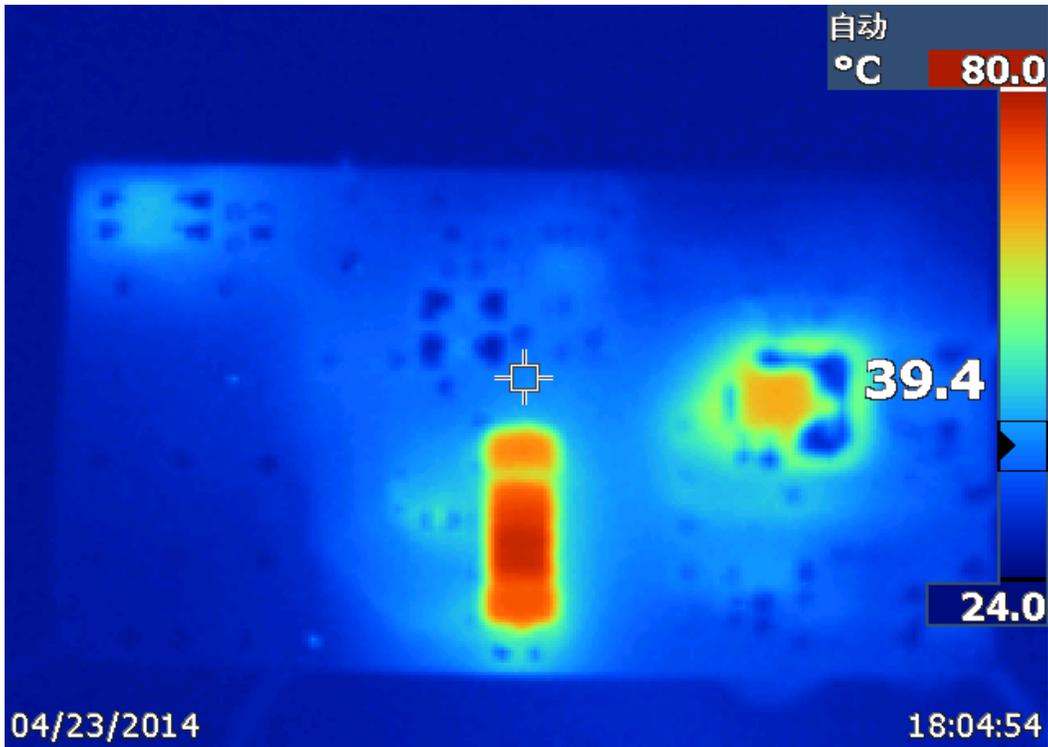
2.2.4 Output Short Circuit Protection



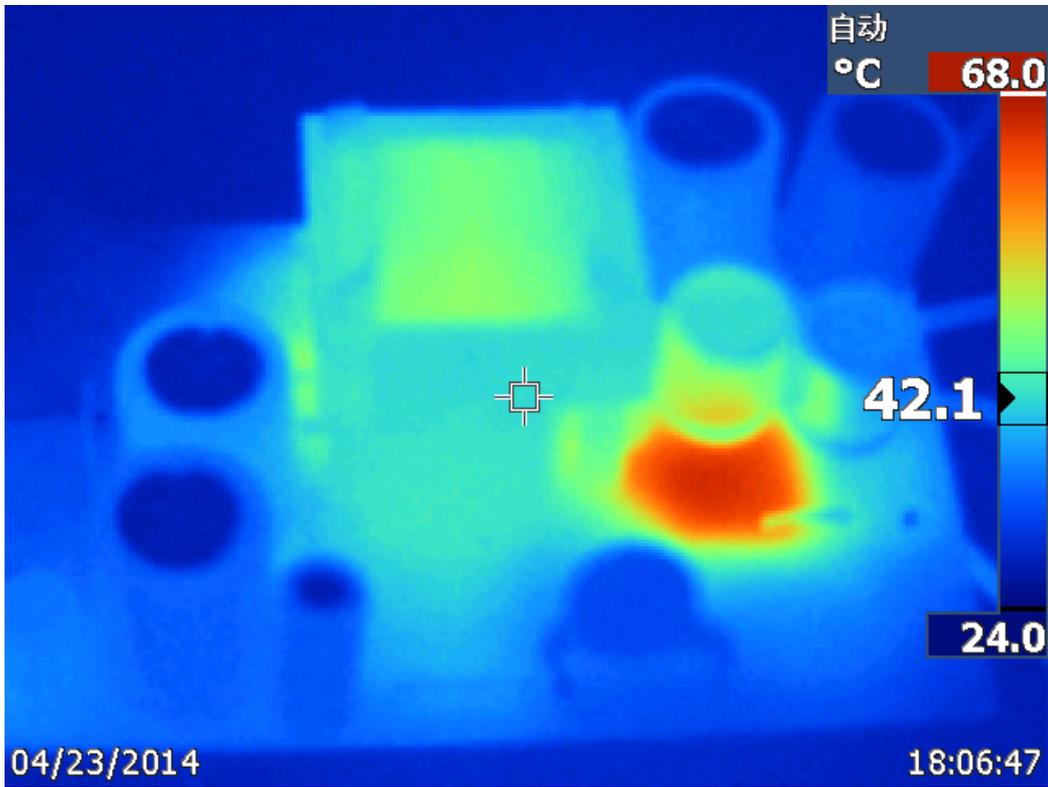
3 THERMAL IMAGE



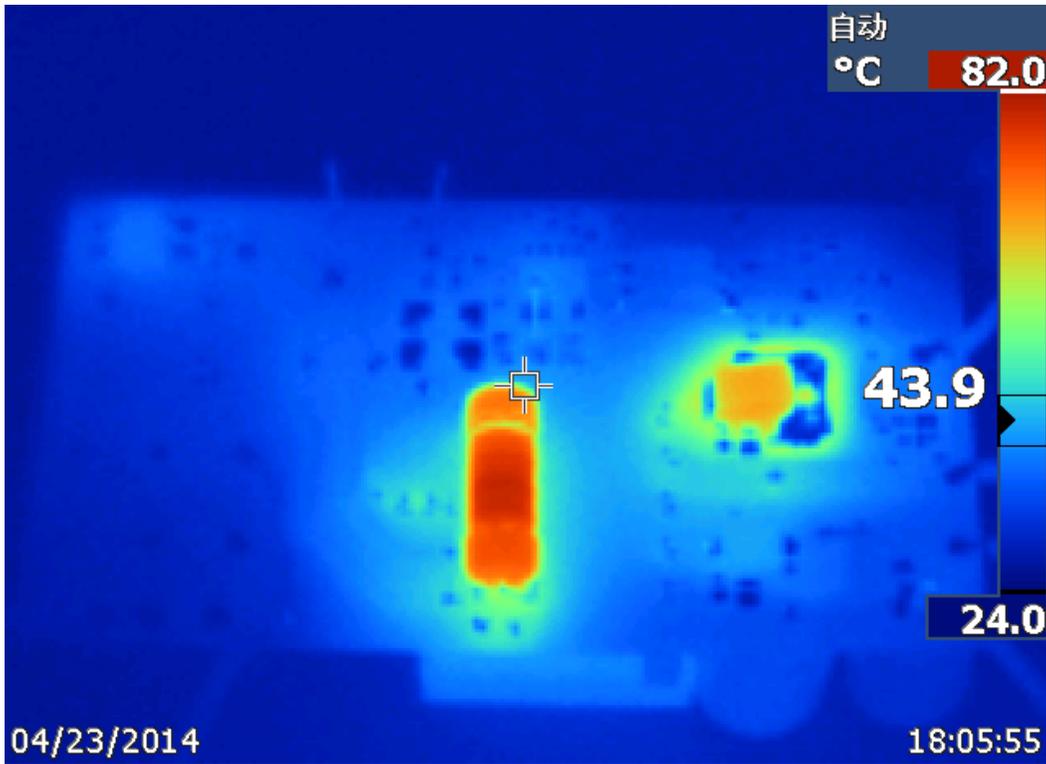
Component side, 115Vac at Full Load, $T_a=25^\circ\text{C}$



Soldering side, 115Vac at Full Load, $T_a=25^\circ\text{C}$

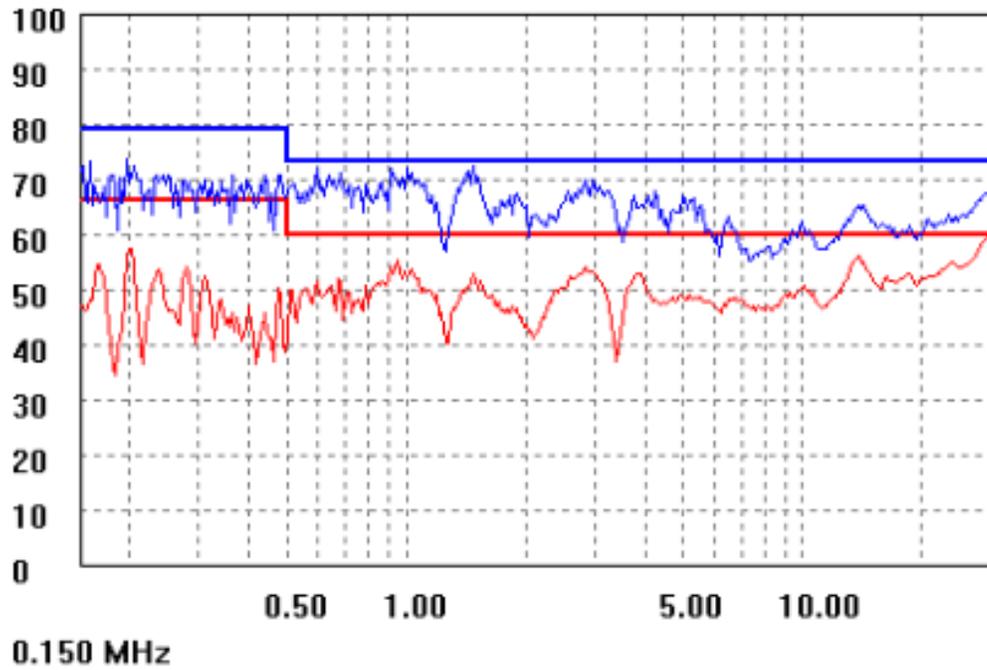


Component side, 230Vac and 1.5A load, $T_a=25^\circ\text{C}$

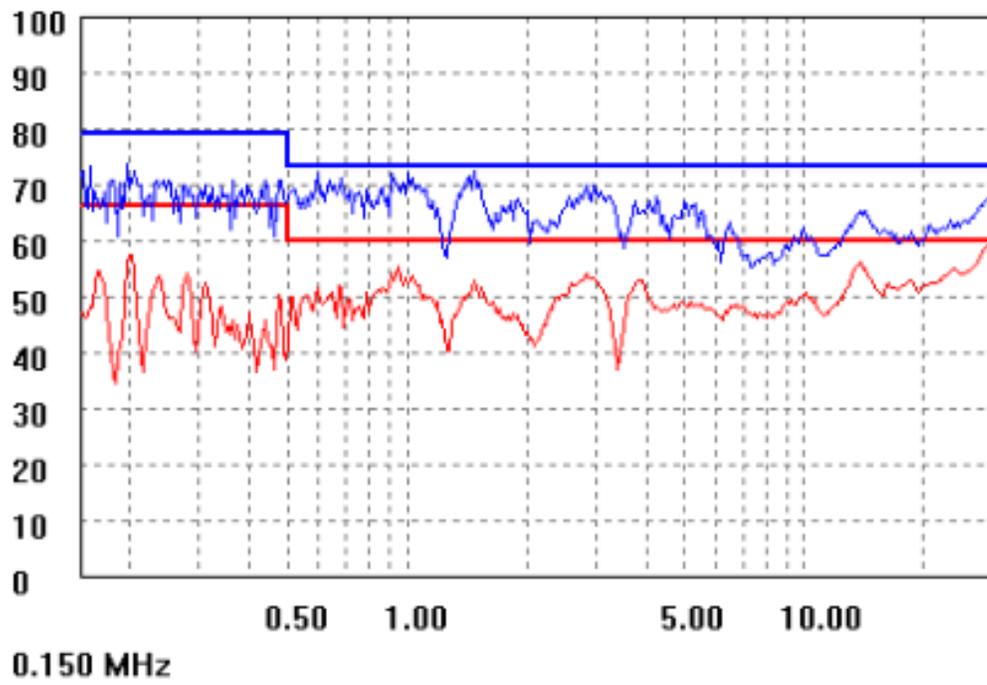


Soldering side, 230Vac, $T_a=25^\circ\text{C}$

4 EMI Test



Test condition: with full load Line



Test condition: with full load Neutral

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