Texas Instruments

PMP4356 Test Procedure

China Power Reference Design

08/09/2013

1 GENERAL

1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP4356.

1.2 REFERENCE DOCUMENTATION

Schematic: PMP4356_SCH
Assembly: PMP4356_PCB
BOM

1.3 TEST EQUIPMENTS

Multi-meter(voltage): Fluke 187
DC Source:

2 INPUT CHARACTERISTICS

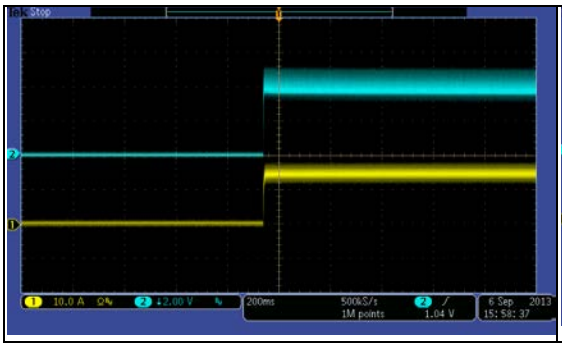
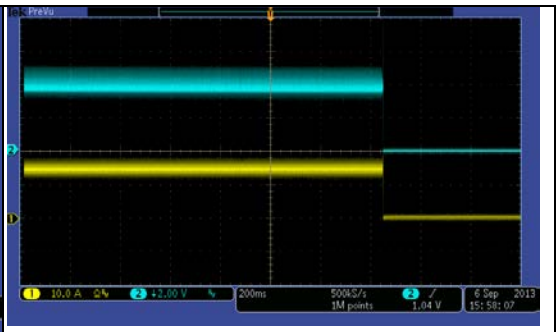
Test condition: The load is Green, Red and Blue LED, PWM_BLUE, PWM_GREEN, PWM_RED, EN_BLUE, EN_RED, EN_GREEN, LED_EN is connected to 3V3.

2.1 EFFICIENCY

LED	Io(A)	Vo(V)	Vin(V)	Iin(A)	Eff.(%)
Green	15.0	4.71	18.93	10.57	92.5
Red	14.8	4.05			
Blue	14.7	3.71			

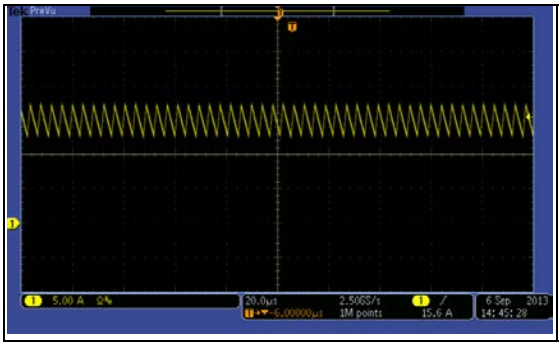
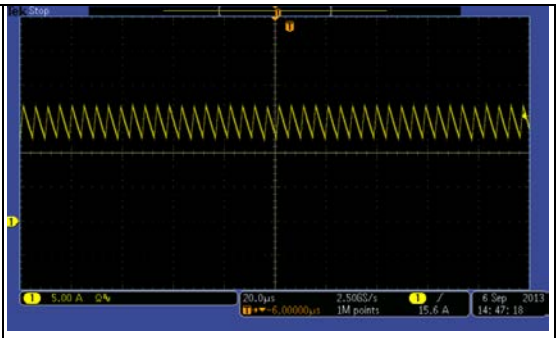
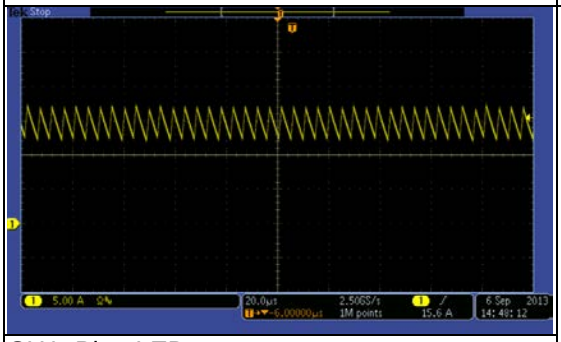
3 OUTPUT CHARACTERISTICS

3.1 Start up and shut down

	
CH1: Blue LED current CH2: Blue LED Voltage	CH1: Blue LED current CH2: Blue LED Voltage

3.2 RIPPLE CURRENT

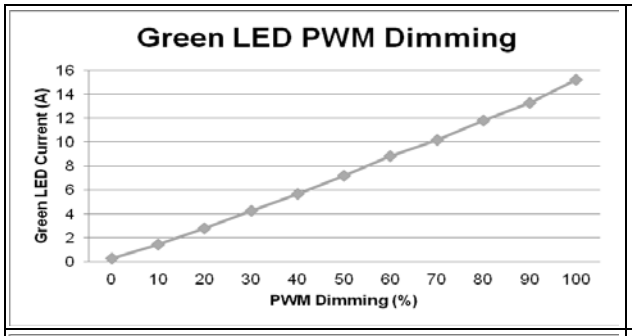
LED	Ripple Current
Green	5.1A
Red	5.0A
Blue	5.1A

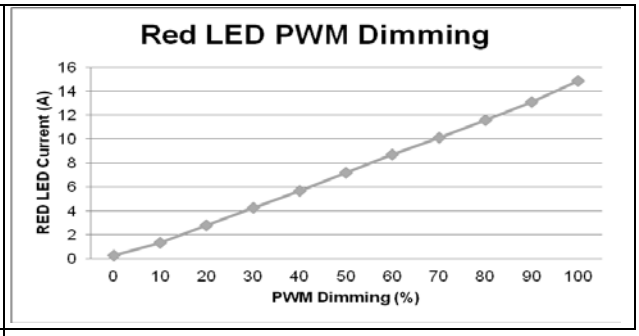
	
CH1: Green LED current	CH1: Red LED current
	
CH1: Blue LED current	

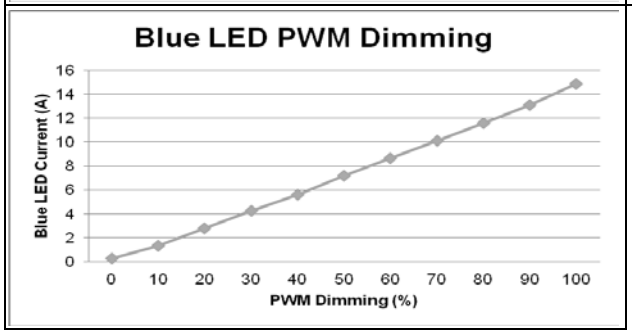
3.3 Dimming control

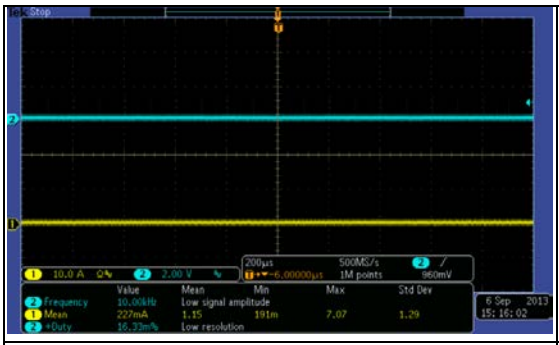
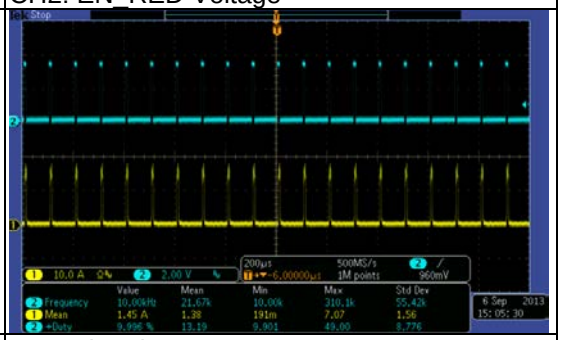
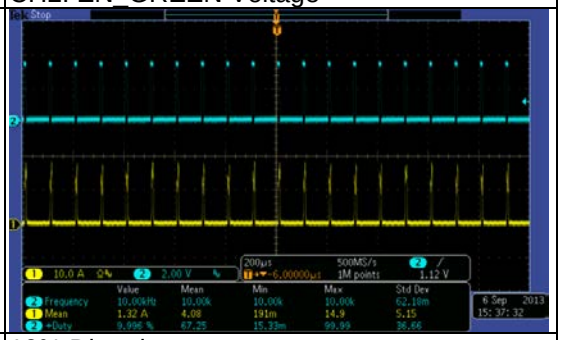
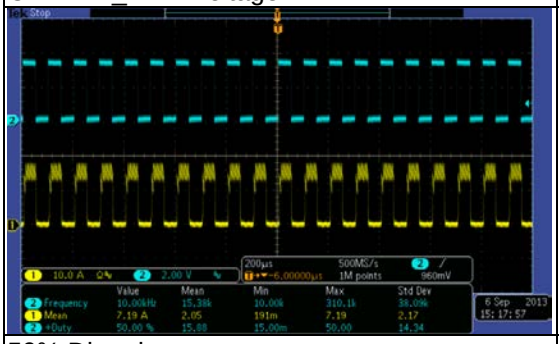
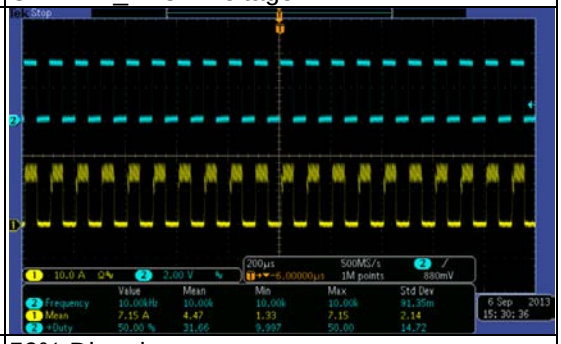
Test condition: PWM_BLUE, PWM_GREEN, PWM_RED, LED_EN is connected to 3V3, EN_BLUE, EN_RED, EN_GREEN is connected to external dimming signal.

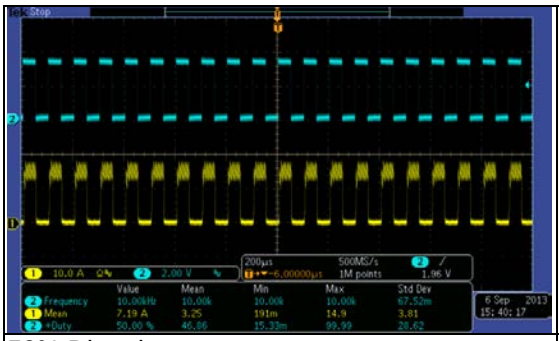
	Green		Red		Blue	
Dimming	Io(A)	%	Io(A)	%	Io(A)	%
0%	0.23	1.5	0.23	1.5	0.24	1.6
10%	1.45	9.5	1.33	8.9	1.32	8.9
20%	2.79	18.4	2.77	18.6	2.75	18.5
30%	4.23	27.8	4.22	28.3	4.26	28.6
40%	5.67	37.3	5.66	38.0	5.59	37.5
50%	7.19	47.3	7.15	48.0	7.19	48.3
60%	8.83	58.1	8.73	58.6	8.64	58.0
70%	10.2	67.1	10.1	67.8	10.1	67.8
80%	11.8	77.6	11.6	77.9	11.6	77.9
90%	13.3	87.5	13.1	87.9	13.1	87.9
100%	15.2	100.0	14.9	100.0	14.9	100.0



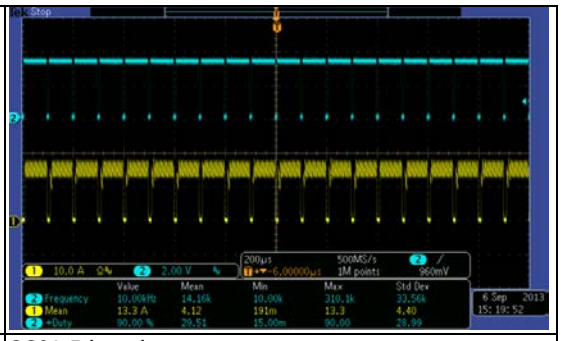




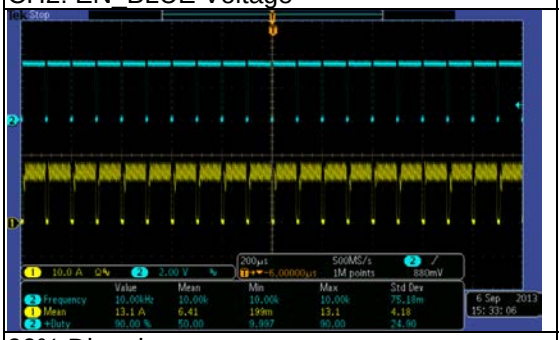
	
0% Dimming CH1: Green LED Current CH2: EN_GREEN Voltage	0% Dimming CH1: Red LED Current CH2: EN_RED Voltage
	
0% Dimming CH1: Blue LED current CH2: EN_BLUE Voltage	10% Dimming CH1: Green LED Current CH2: EN_GREEN Voltage
	
10% Dimming CH1: Red LED Current CH2: EN_RED Voltage	10% Dimming CH1: Blue LED current CH2: EN_BLUE Voltage
	
50% Dimming CH1: Green LED Current CH2: EN_GREEN Voltage	50% Dimming CH1: Red LED Current CH2: EN_RED Voltage



50% Dimming
CH1: Blue LED current
CH2: EN_BLUE Voltage

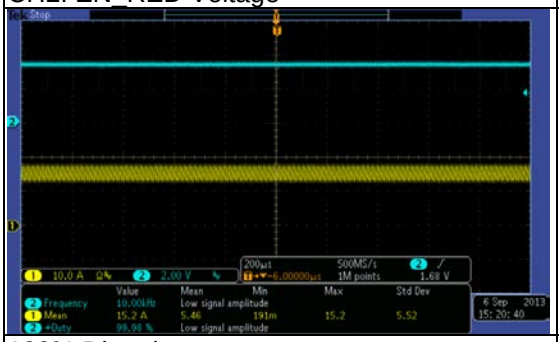


90% Dimming
CH1: Green LED Current
CH2: EN_GREEN Voltage

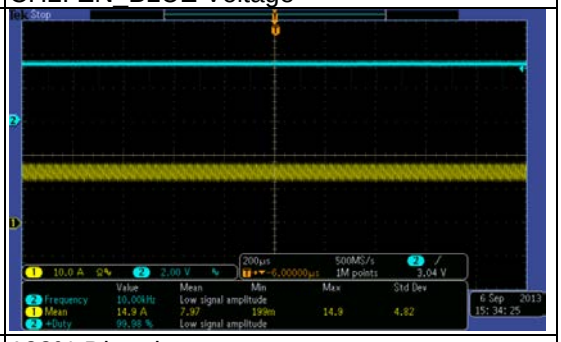


90% Dimming
CH1: Red LED Current
CH2: EN_RED Voltage

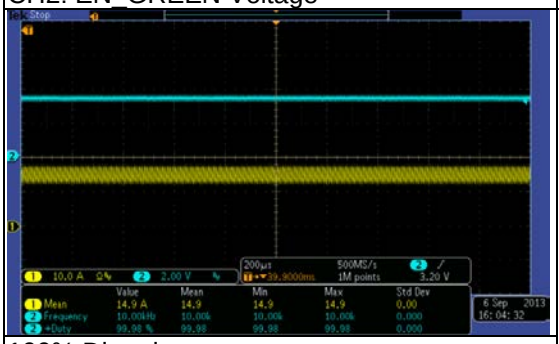
90% Dimming
CH1: Blue LED current
CH2: EN_BLUE Voltage



100% Dimming
CH1: Green LED Current
CH2: EN_GREEN Voltage



100% Dimming
CH1: Red LED Current
CH2: EN_RED Voltage



100% Dimming
CH1: Blue LED current
CH2: EN_BLUE Voltage

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