Texas Instruments

PMP4484 Test Procedure

Asia Power Design Service

REV A

06/29/2015

1 GENERAL

1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP4484

1.2 REFERENCE DOCUMENTATION

Schematic: PMP4484 SCH
Assembly: PMP4484 PCB
BOM

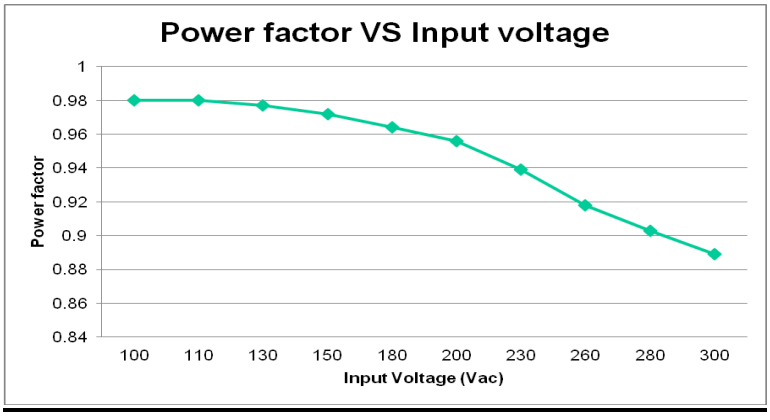
1.3 TEST EQUIPMENTS

Power-meter: YOKOGAWA WT210
Multi-meter(current): Fluke 3345A
Multi-meter(voltage): Fluke 187
AC Source: Chroma 61530
LED load: Chroma 63110A module

2 INPUT CHARACTERISTICS

2.1 POWER FACTOR

Vin(Vac)	Freq(Hz)	PF	Pass/Fail
100	60	0.98	
110	60	0.98	
130	60	0.977	
150	60	0.972	
180	50	0.964	
200	50	0.956	
230	50	0.939	
260	50	0.918	
280	50	0.903	
300	50	0.889	



2.2 EFFICIENCY

Vin=110Vac

Output	Vo (V)	Io (A）
R1	30.48	0.146
G1	30.3	0.165
B1	30.11	0.126
R2	29.95	0.141
G2	30.57	0.161
B2	30.2	0.128
RS485	10.15	0.1
MCU	3.3	0.1
Pin（W）	32.69	
Eff. (%)	84.4	

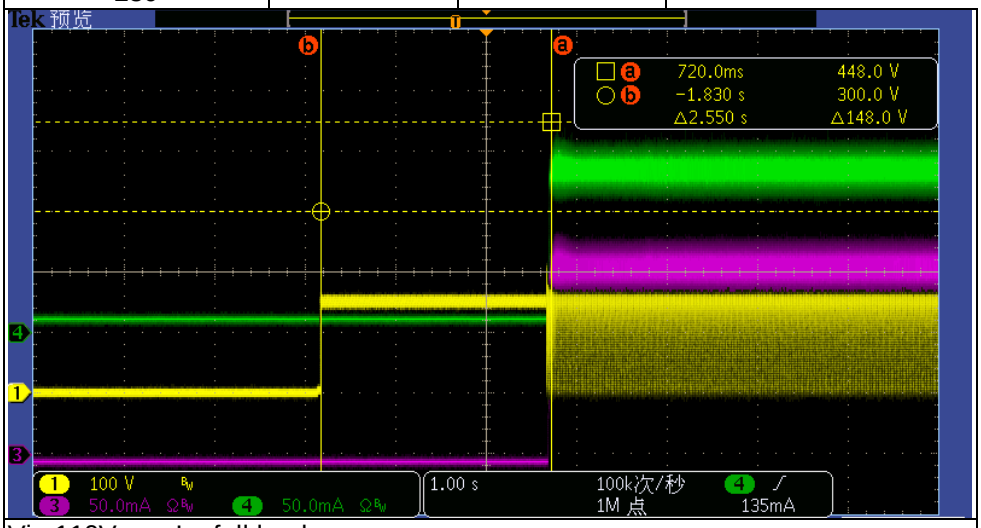
Vin=230Vac

Output	Vo (V)	Io (A）
R1	30.3	0.147
G1	30.12	0.167
B1	29.92	0.127
R2	29.89	0.142
G2	30.52	0.164
B2	30.15	0.13
RS485	10.15	0.1
MCU	3.3	0.1
Pin（W）	32.16	
Eff. (%)	86.4	

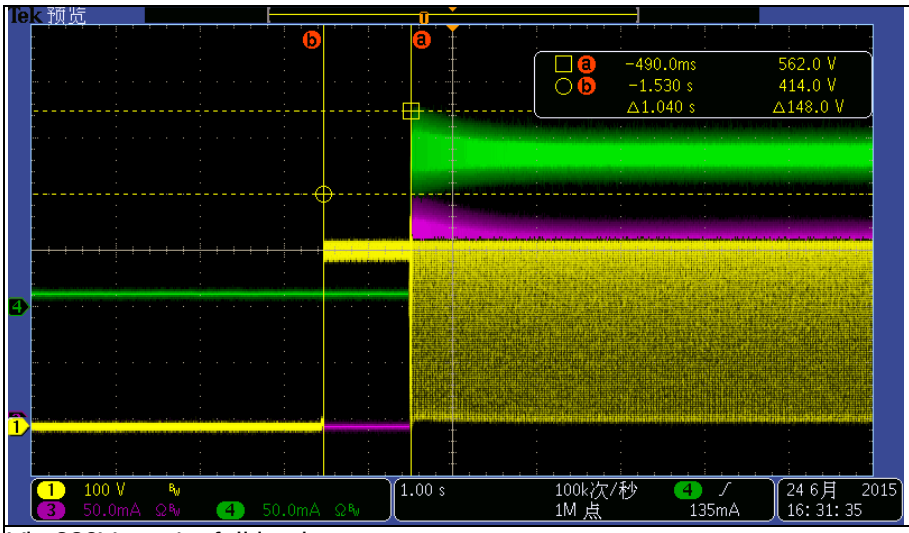
3 OUTPUT CHARACTERISTICS

3.1 TURN ON DELAY AND RIPPLE CURRENT

CONDITIONS		Delay time (S)
Vin (Vac)	Load	
110	Full load	2.55
230	Full load	0.728

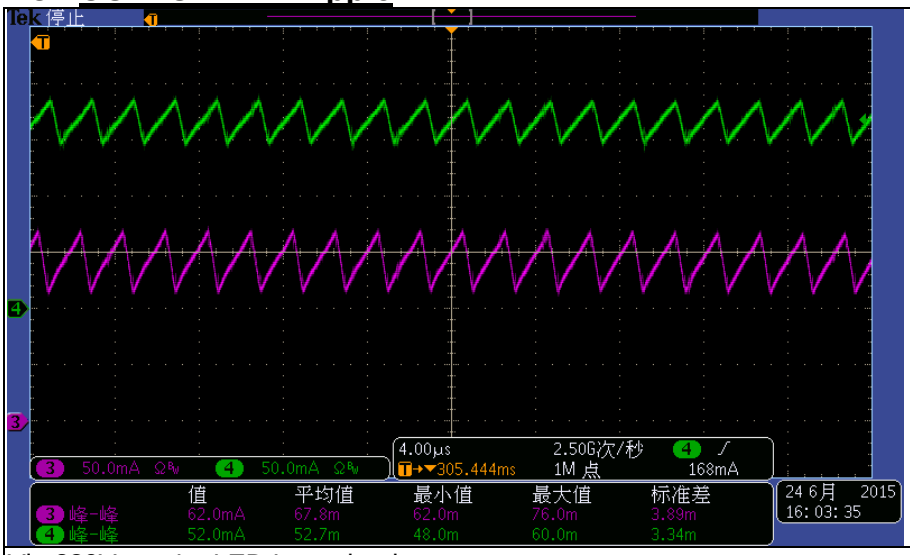


Vin:110Vac Io: full load
Ch1:The voltage after bridge diode
Ch3: R1 LED current
Ch4: G1 LED current

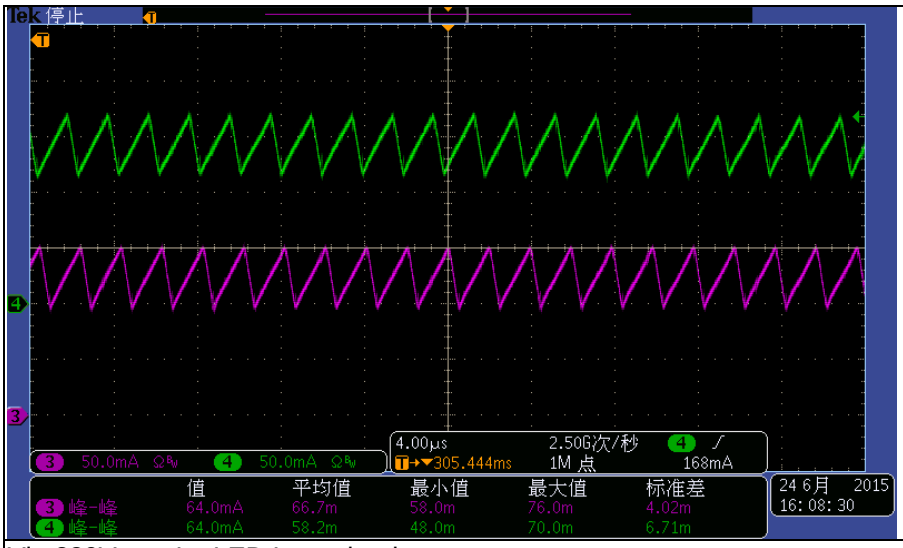


Vin:230Vac Io: full load
Ch1:The voltage after bridge diode
Ch3: R1 LED current
Ch4: G1 LED current

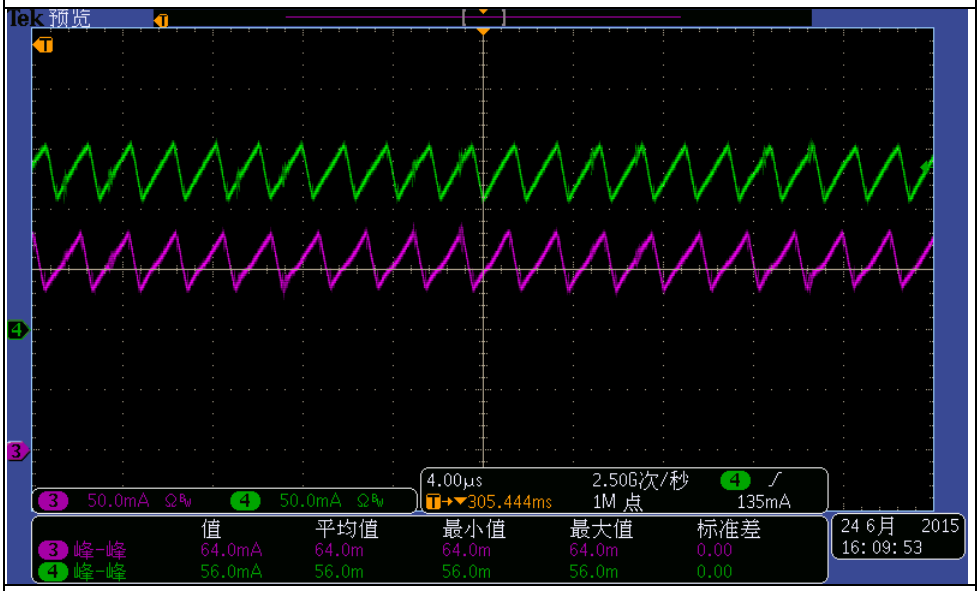
3.2 OUTPUT LED Ripple



Vin:230Vac Io: LED Lamp load
Ch3: R1 LED current
Ch4: G1 LED current



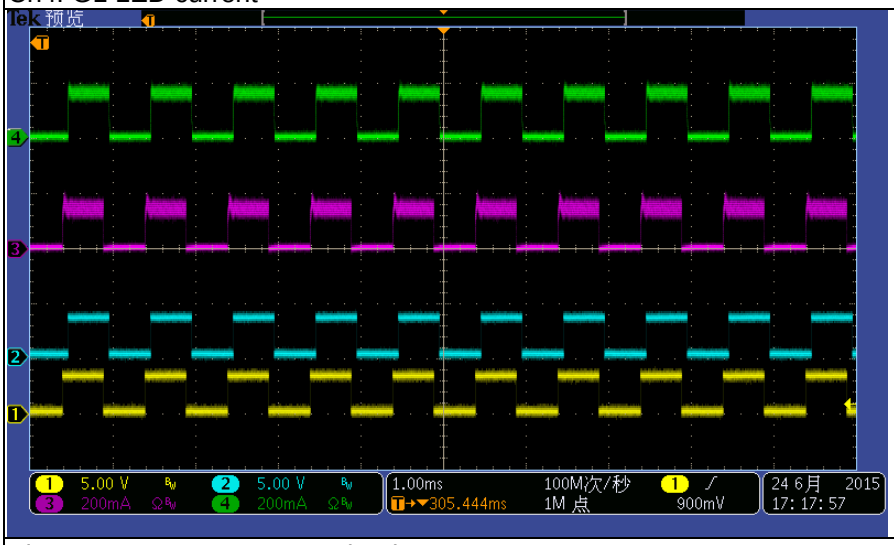
Vin:230Vac Io: LED Lamp load
Ch3: B1 LED current
Ch4: R2 LED current



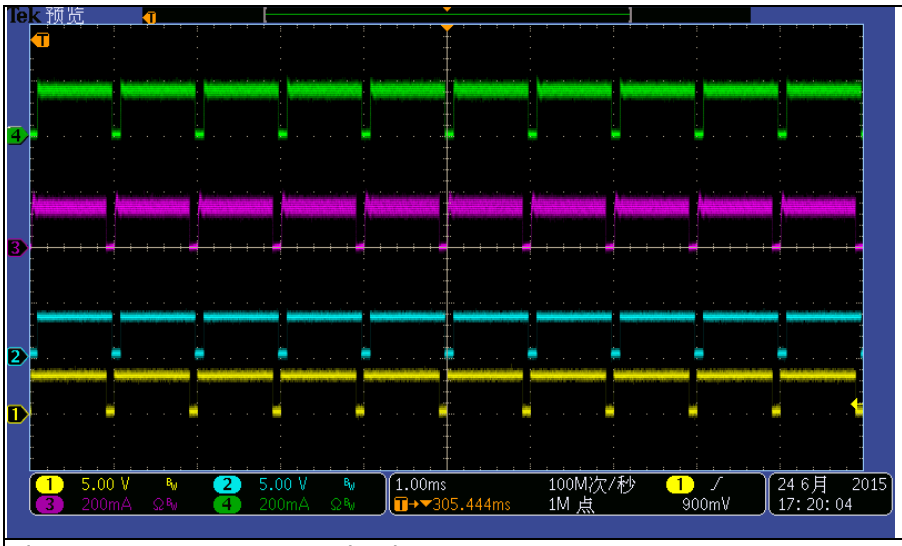
Vin:230Vac Io: LED Lamp load
Ch3: G2 LED current
Ch4: B2 LED current

3.3 LED PWM Dimming

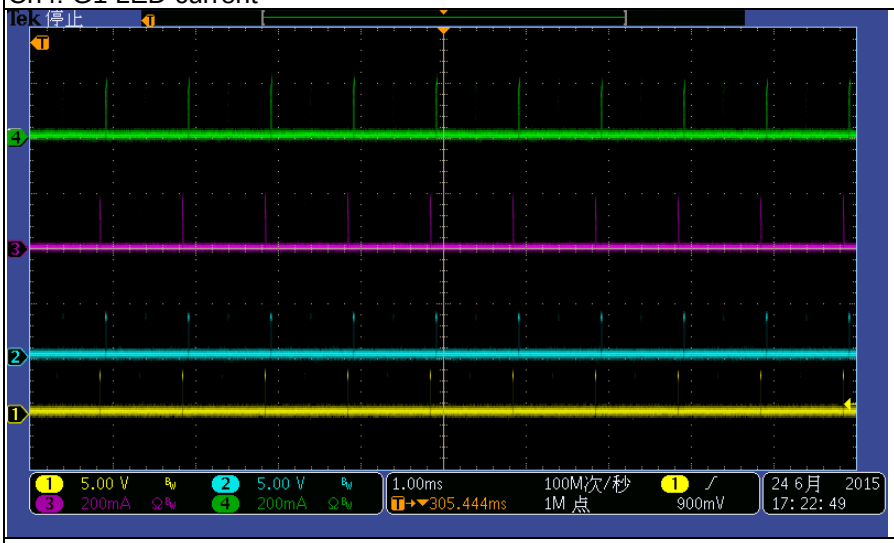
Vin:110Vac Io: LED Lamp load
Ch1: DIM_R1 voltage, Duty=1%
Ch2: DIM_G1 voltage, Duty=1%
Ch3: R1 LED current
Ch4: G1 LED current



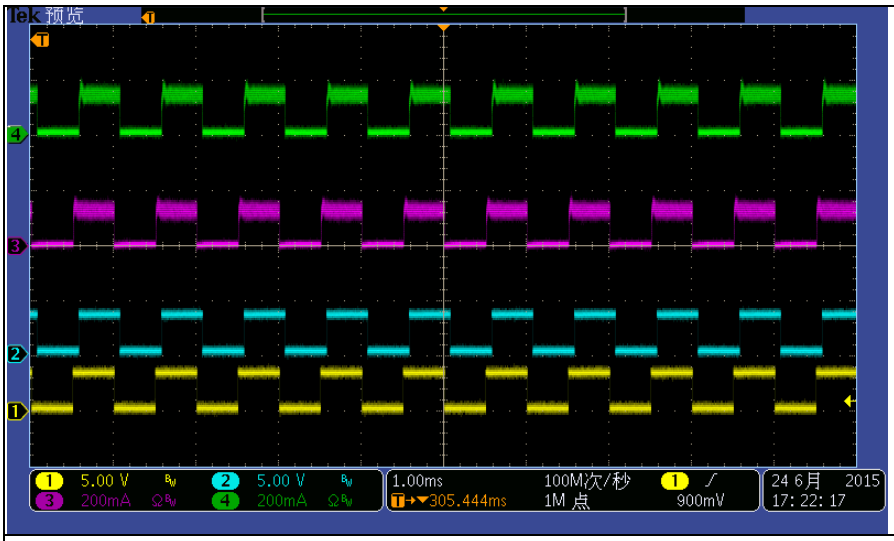
Vin:110Vac Io: LED Lamp load
Ch1: DIM_R1 voltage, Duty=50%
Ch2: DIM_G1 voltage, Duty=50%
Ch3: R1 LED current
Ch4: G1 LED current



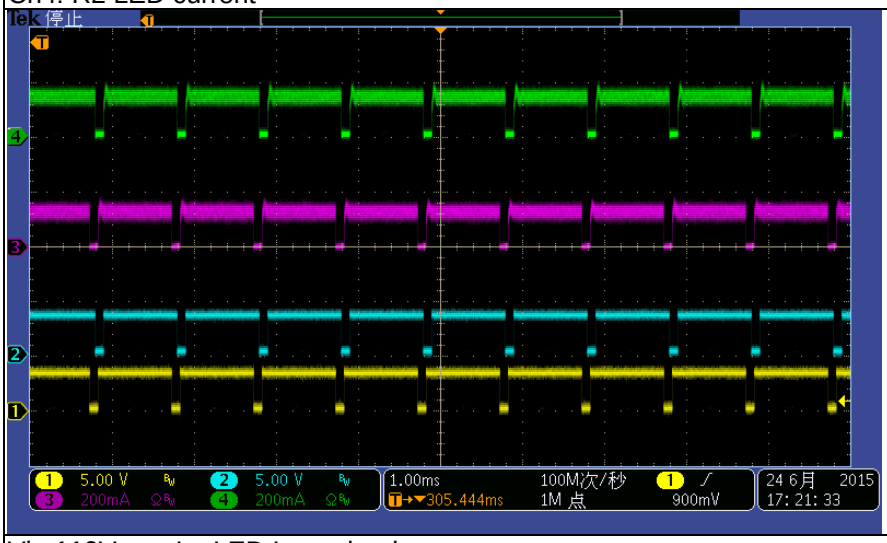
Vin:110Vac Io: LED Lamp load
Ch1: DIM_R1 voltage, Duty=90%
Ch2: DIM_G1 voltage, Duty=90%
Ch3: R1 LED current
Ch4: G1 LED current



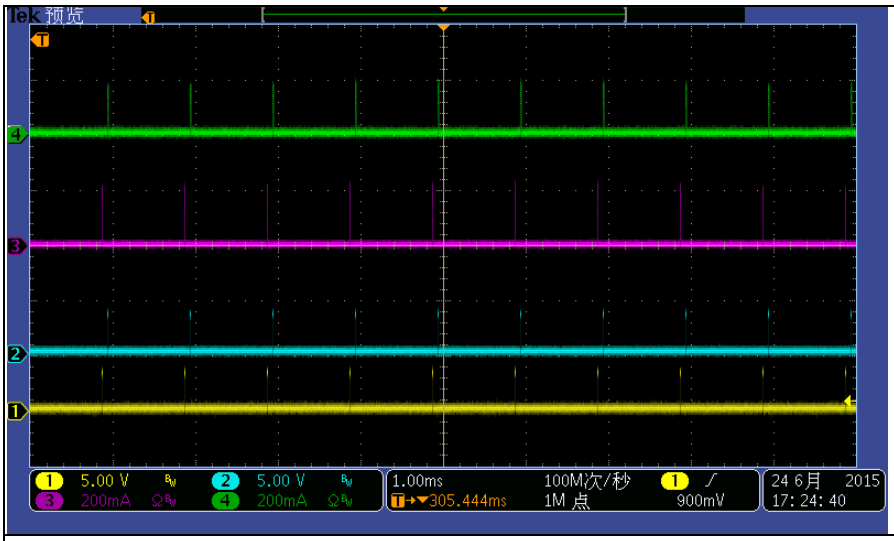
Vin:110Vac Io: LED Lamp load
Ch1: DIM_B1 voltage, Duty=1%
Ch2: DIM_R2 voltage, Duty=1%
Ch3: B1 LED current
Ch4: R2 LED current



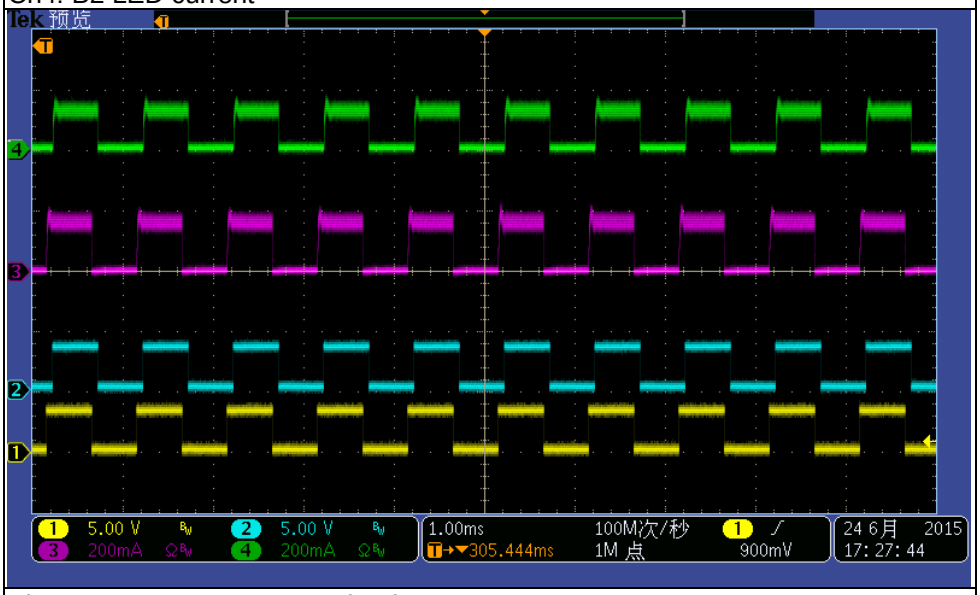
Vin:110Vac Io: LED Lamp load
Ch1: DIM_B1 voltage, Duty=50%
Ch2: DIM_R2 voltage, Duty=50%
Ch3: B1 LED current
Ch4: R2 LED current



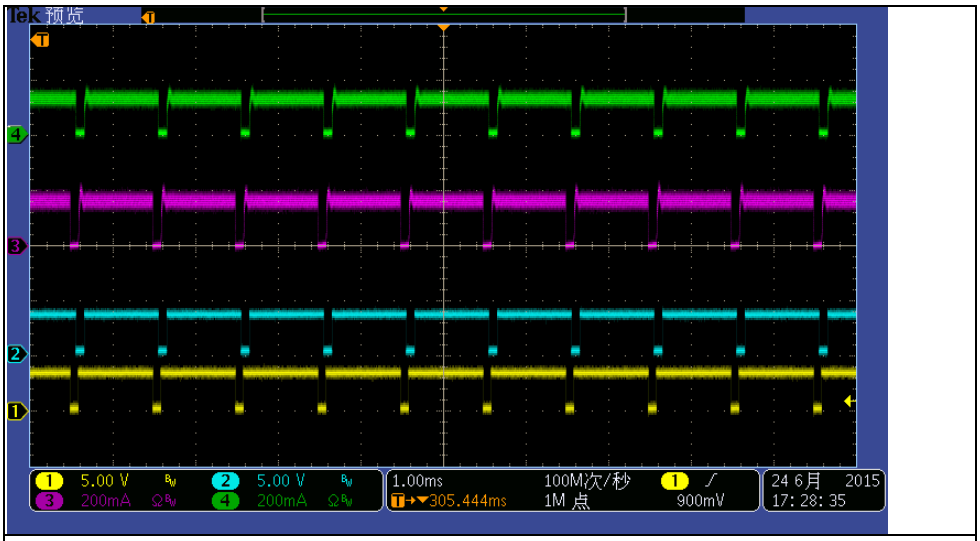
Vin:110Vac Io: LED Lamp load
Ch1: DIM_B1 voltage, Duty=90%
Ch2: DIM_R2 voltage, Duty=90%
Ch3: B1 LED current
Ch4: R2 LED current



Vin:110Vac Io: LED Lamp load
Ch1: DIM_G2 voltage, Duty=1%
Ch2: DIM_B2 voltage, Duty=1%
Ch3: G2 LED current
Ch4: B2 LED current

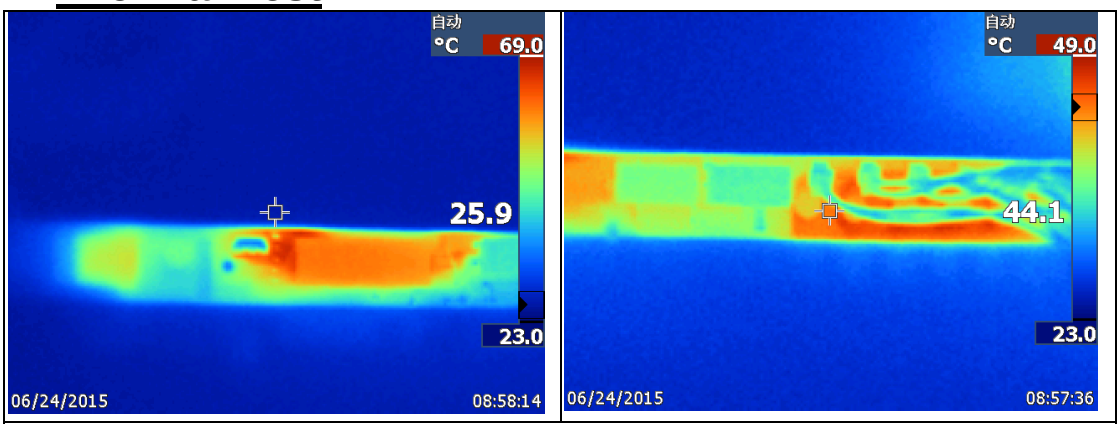


Vin:110Vac Io: LED Lamp load
Ch1: DIM_G2 voltage, Duty=50%
Ch2: DIM_B2 voltage, Duty=50%
Ch3: G2 LED current
Ch4: B2 LED current

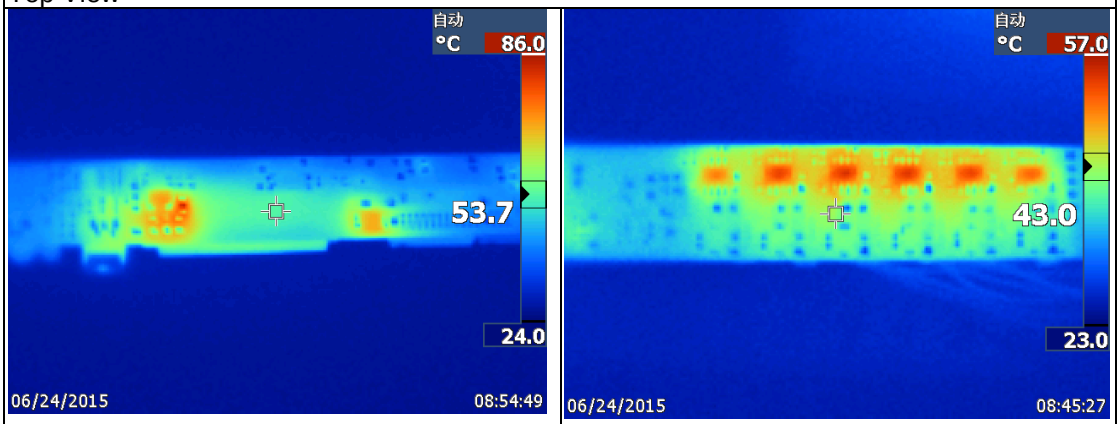


Vin:110Vac Io: LED Lamp load
Ch1: DIM_G2 voltage, Duty=90%
Ch2: DIM_B2 voltage, Duty=90%
Ch3: G2 LED current
Ch4: B2 LED current

4 Thermal Test



Vin: 110Vac Io: full load
Top View



Vin:230Vac Io: full load
Bottom View

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