**Texas Instruments**

# PMP4425 Test Procedure

**China Power Reference Design**

**5/14/2014**

# 1 GENERAL

## 1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP4425, which uses TI Buck controller TPS54340-Q1 and TPS2546-Q1.

## 1.2 REFERENCE DOCUMENTATION

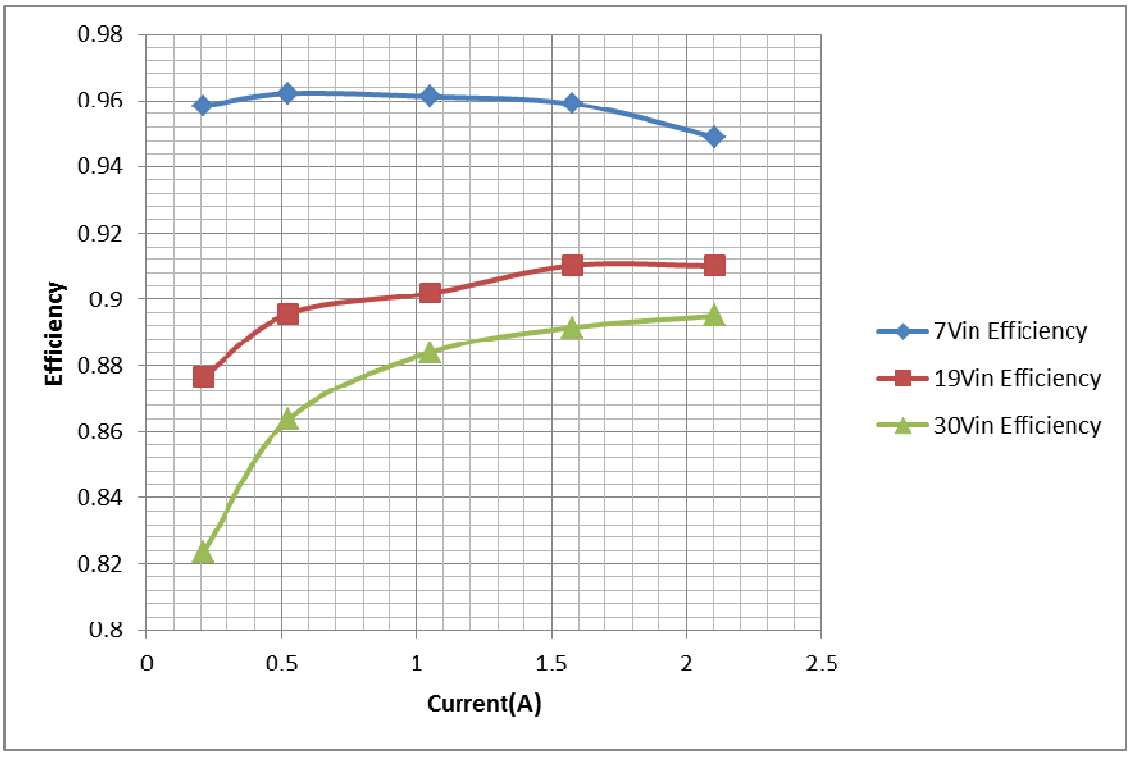
Schematic PMP4425_SCH.PDF
Assembly PMP4425_PCB.PDF
BOM

## 1.3 TEST EQUIPMENTS

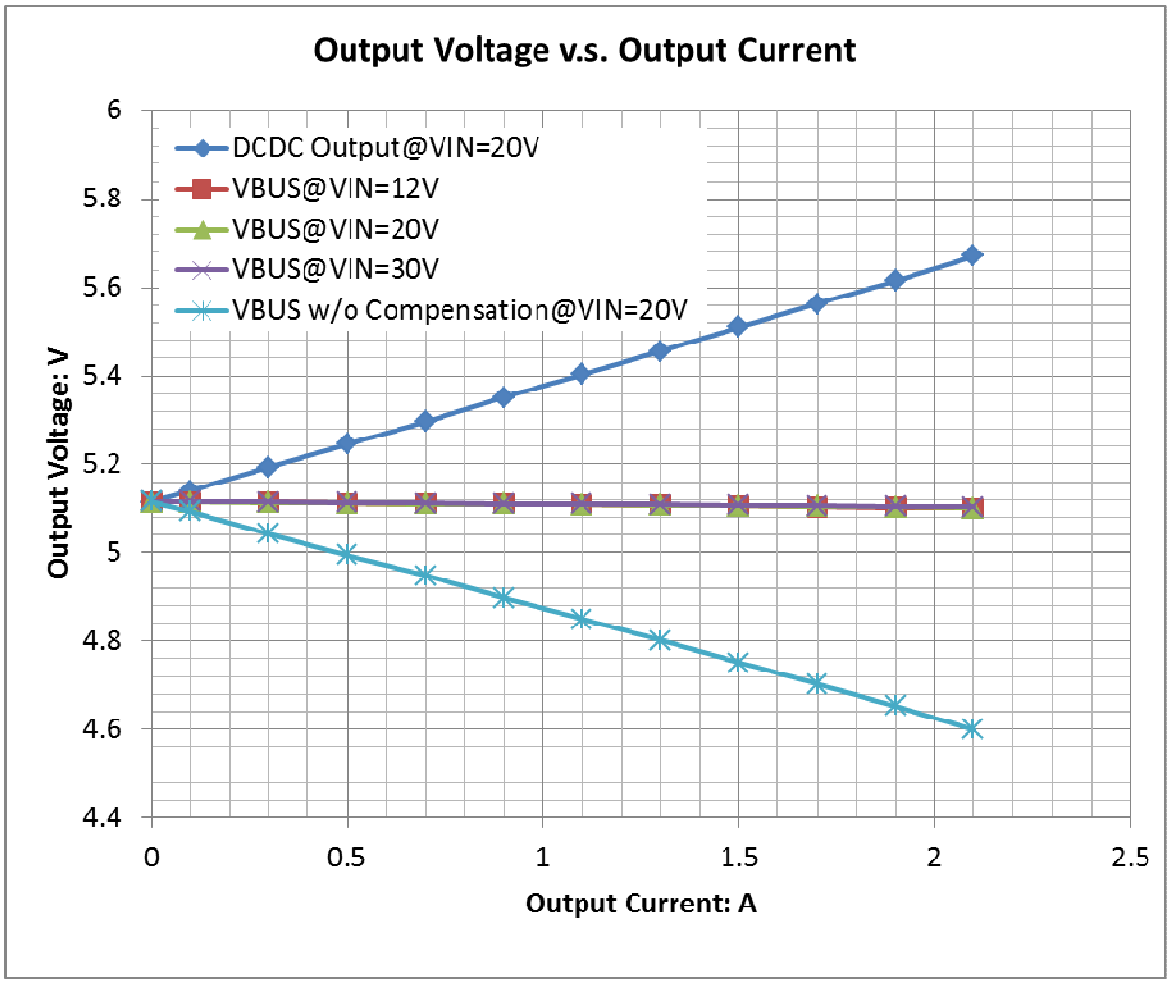
Multi-meter (current): Fluke 287C*2
Multi-meter (voltage): Agilent 34401A
DC Source: GPS 3303C
E-Load: Chroma 63101 module

# 2 Performance data and waveform

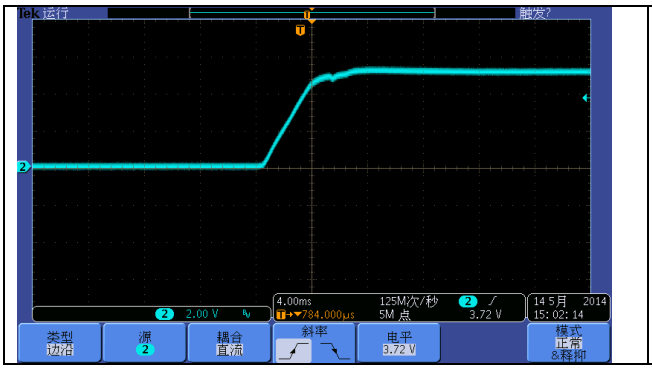
## 2.1 EFFICIENCY

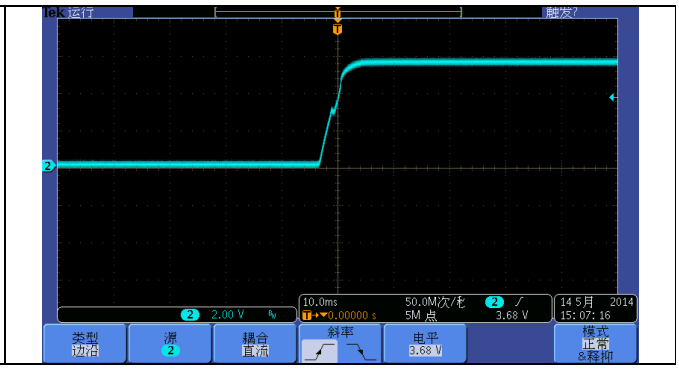


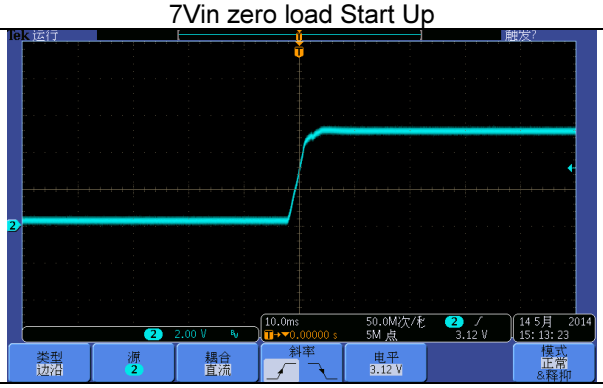
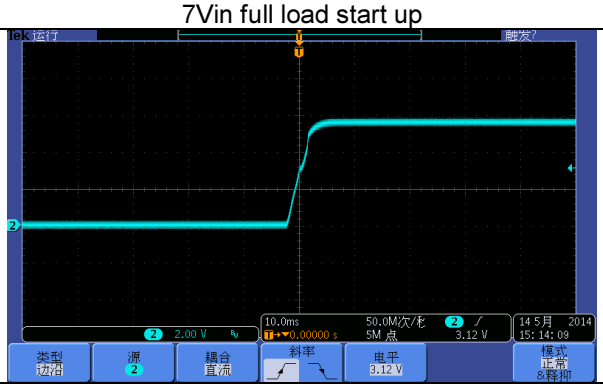
## 2.2 Cable compensation over output current



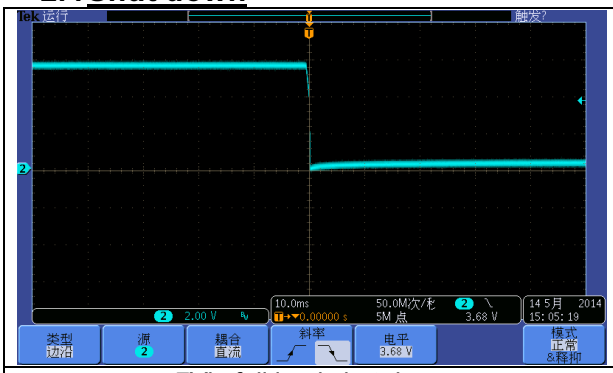
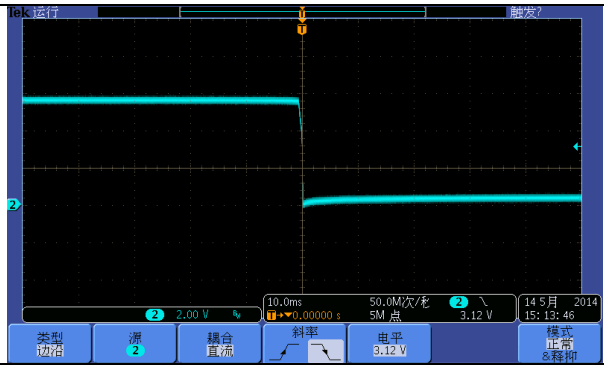

## 2.3 Start Up



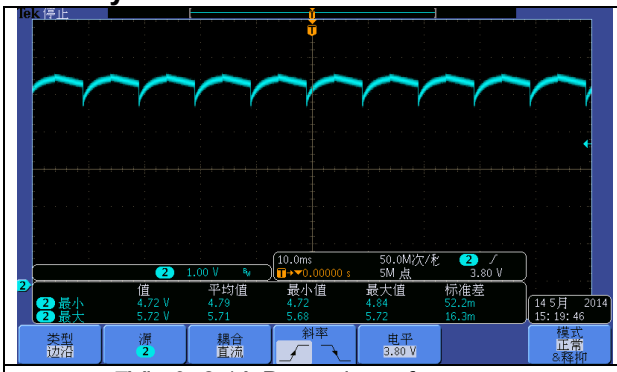
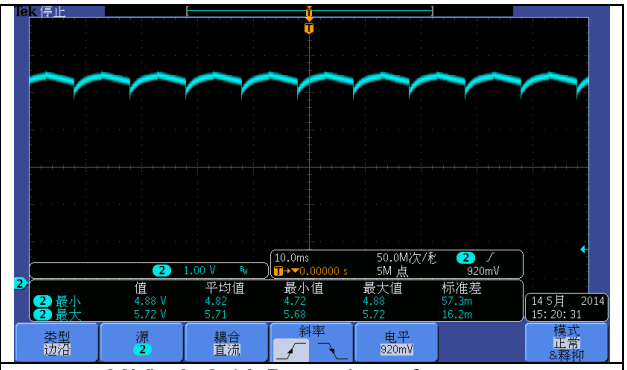


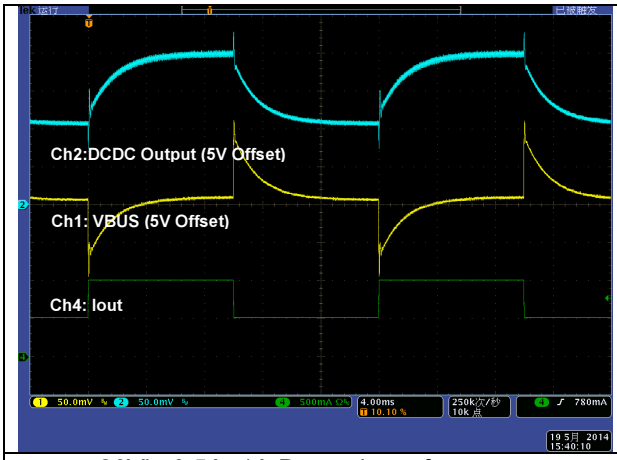
| 7Vin zero load Start Up | 7Vin full load start up |
| --- | --- |
|  |  |
| 30Vin zero load Start Up | 30Vin full load start up |

## 2.4 Shut down

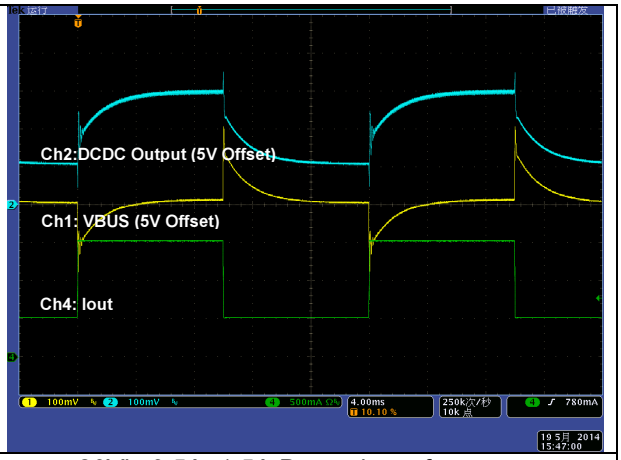
| | |
| --- | --- |
|  |  |
| 7Vin full load shut down | 30Vin full load shut down |

## 2.5 Dynamic Performance

| | |
| --- | --- |
|  |  |
| 7Vin 0~2.1A Dynamic performance | 30Vin 0~2.1A Dynamic performance |

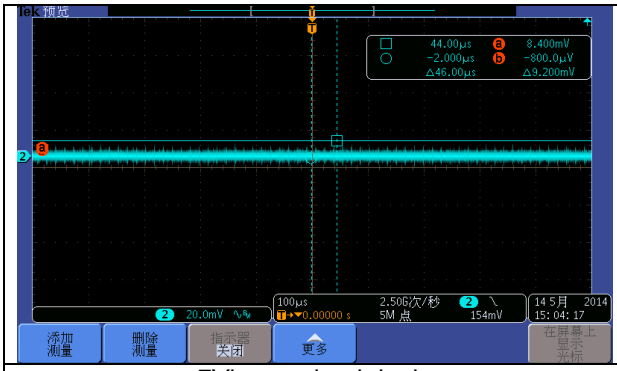



20Vin 0.5A~1A Dynamic performance

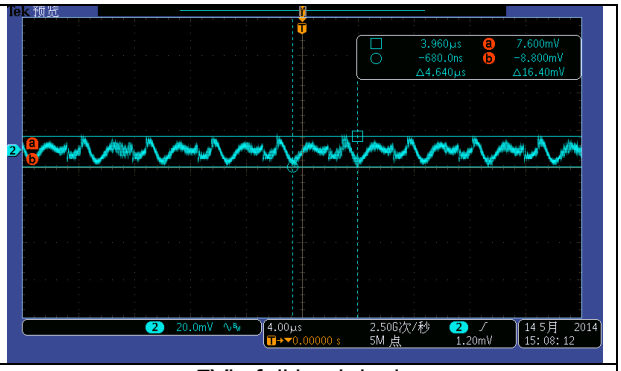



20Vin 0.5A~1.5A Dynamic performance

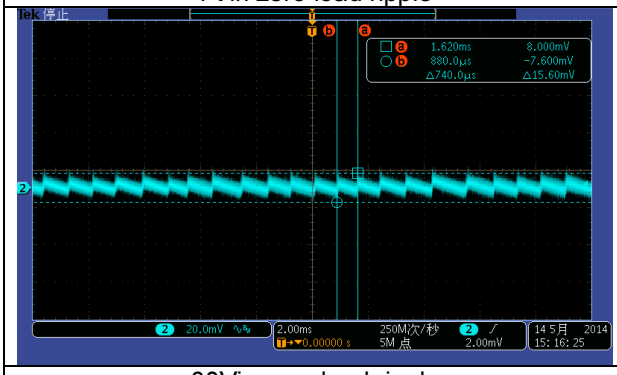
## 2.6 OUTPUT Voltage Ripple



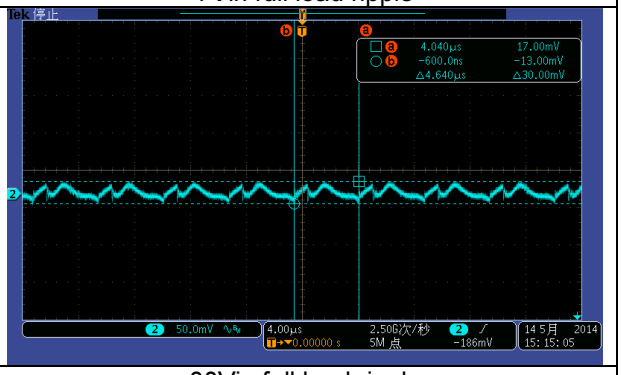
7Vin zero load ripple



7Vin full load ripple

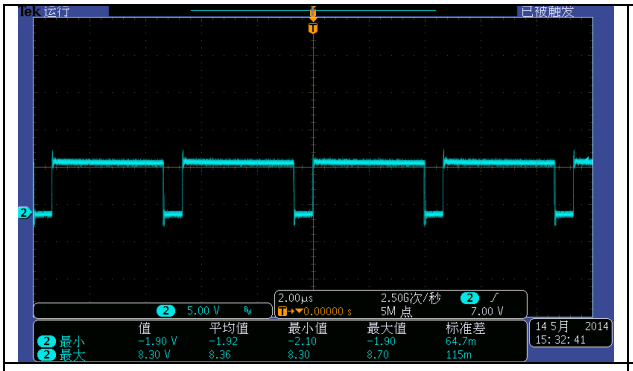


30Vin zero load ripple

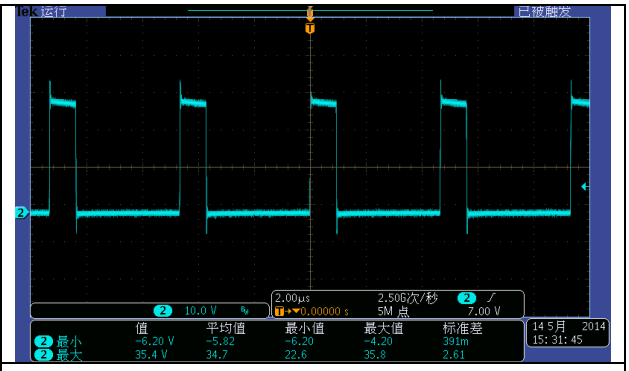


30Vin full load ripple

## 2.7 Mosfet Vds

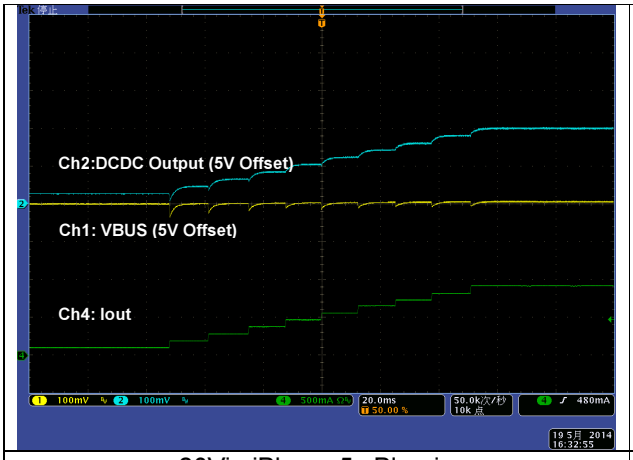


7Vin Full load Vds



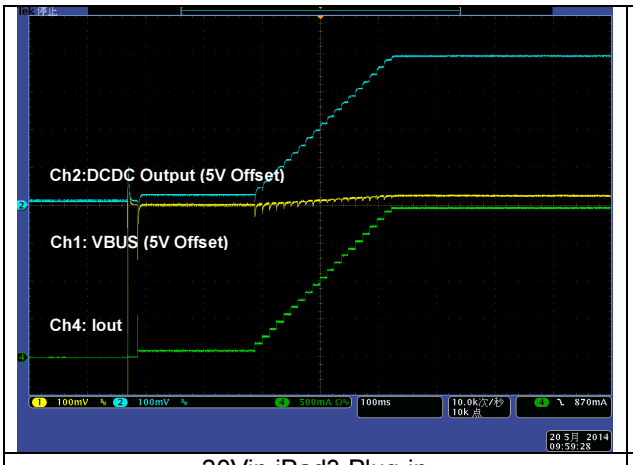
30Vin full load Vds

## 2.8 Portable Device Plug-in and Plug-out

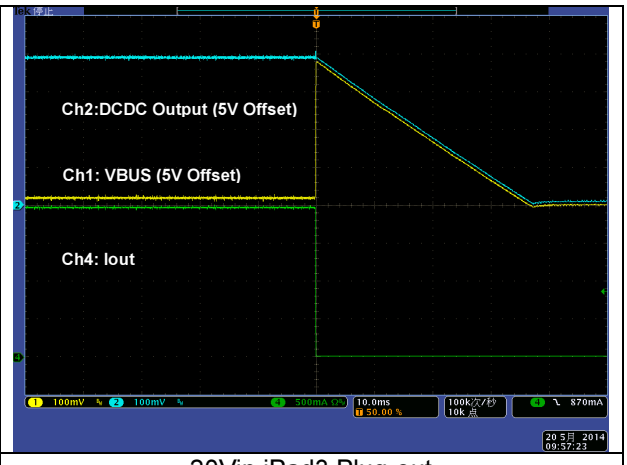



20Vin iPhone 5s Plug-in


20Vin iPhone 5s Plug-out



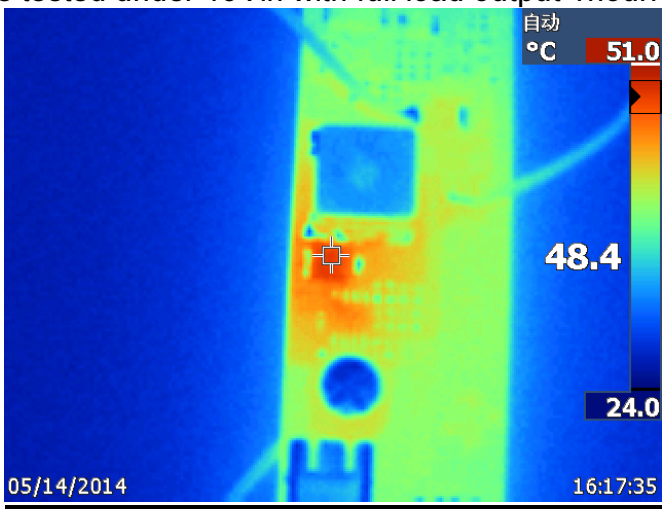

20Vin iPad3 Plug-in




20Vin iPad3 Plug-out

## 2.9 Thermal Performance

The thermal is tested under 19Vin with full load output 1hour.



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