



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

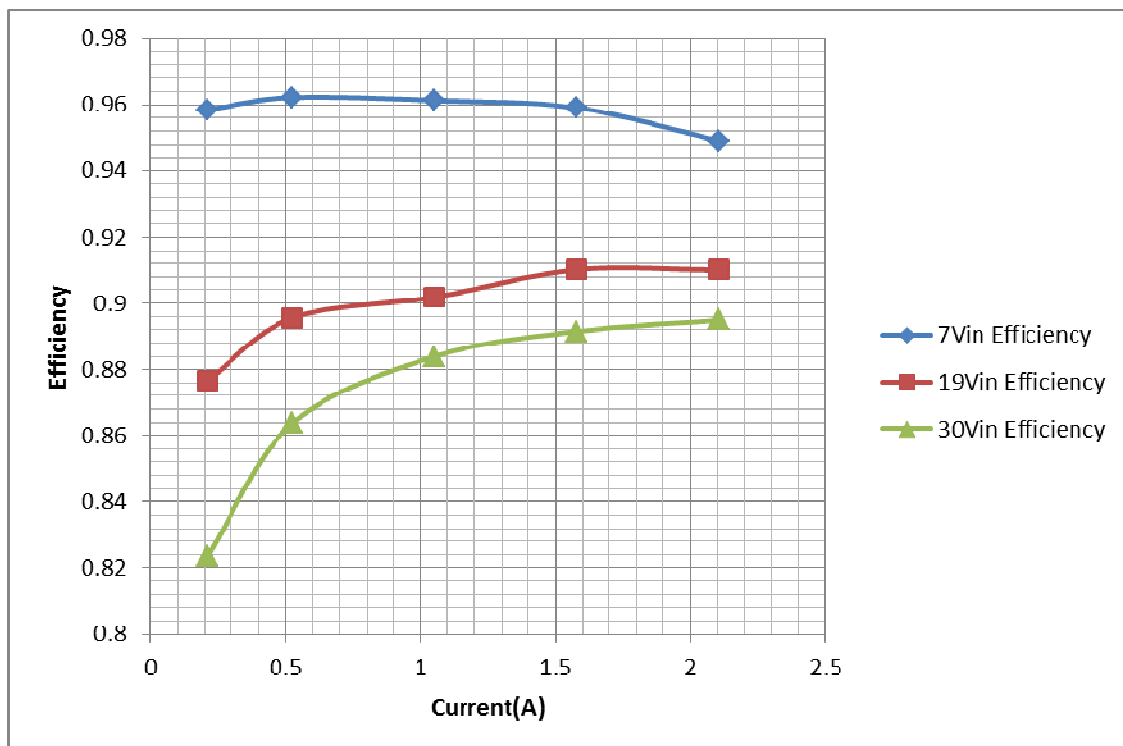
Multi-meter (voltage): Agilent 34401A

DC Source: GPS 3303C

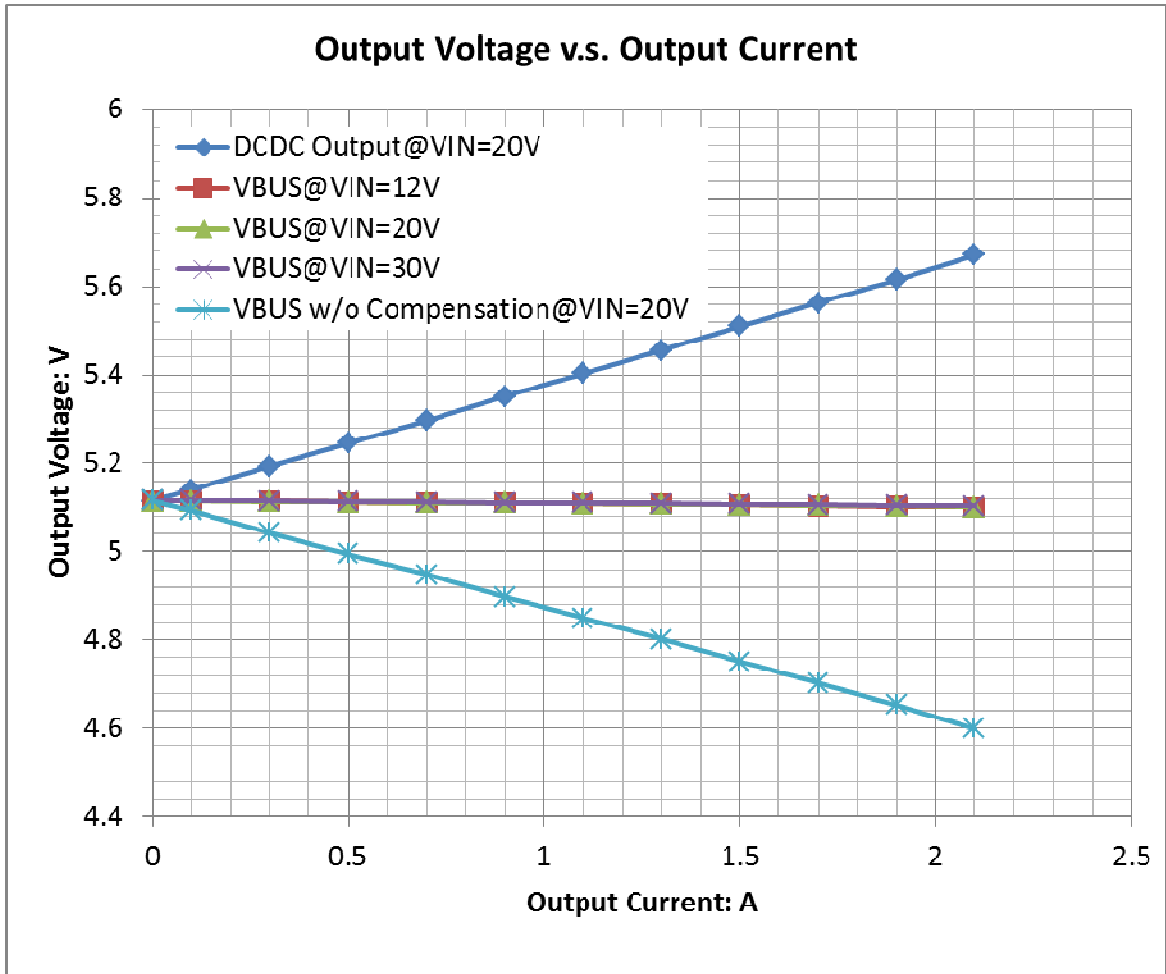
E-Load: Chroma 63101 module

2 Performance data and waveform

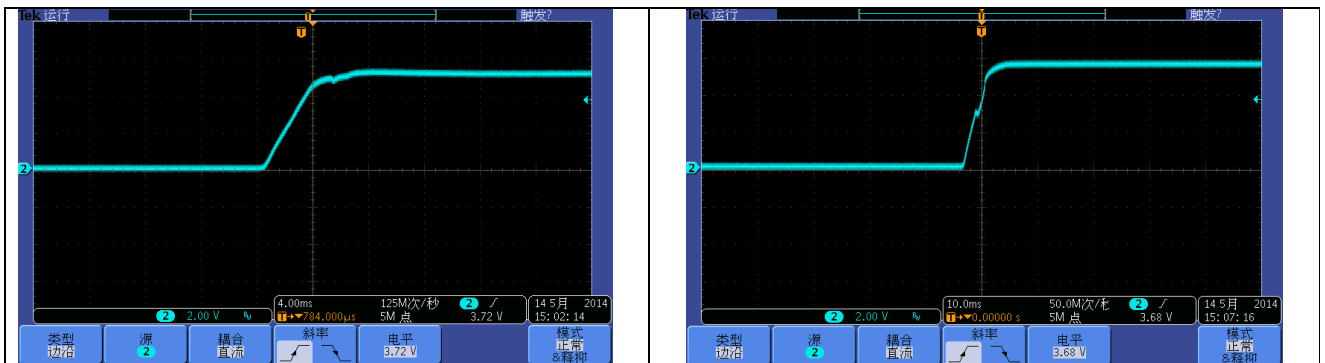
2.1 EFFICIENCY

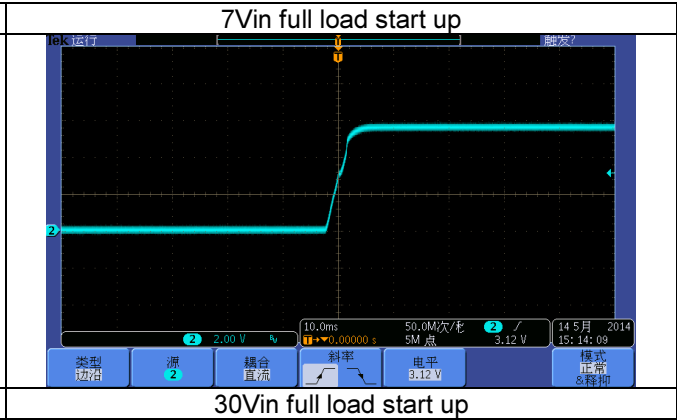
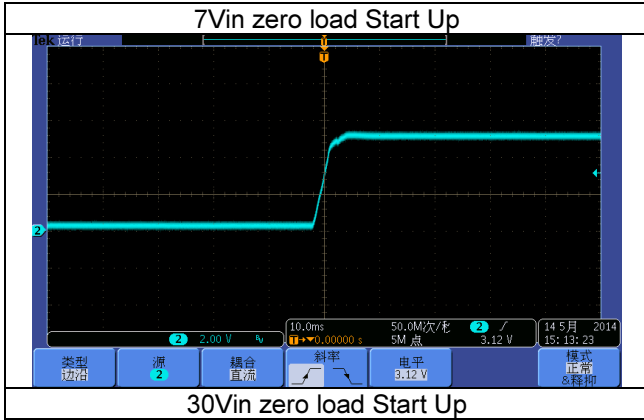


2.2 Cable compensation over output current

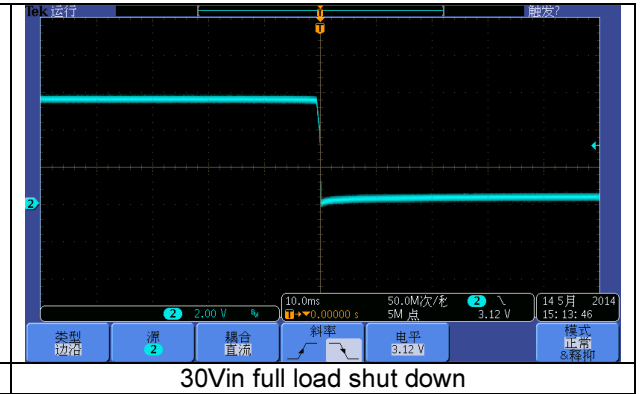
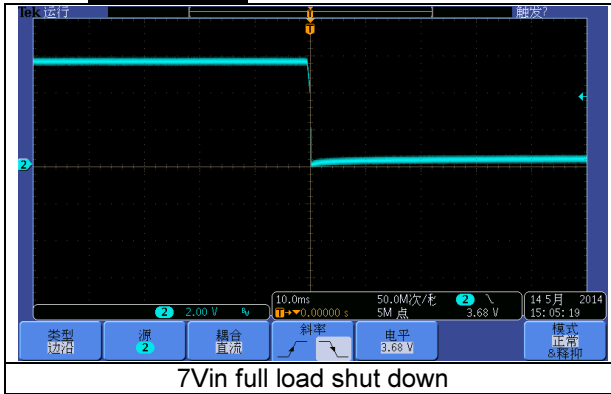


2.3 Start Up

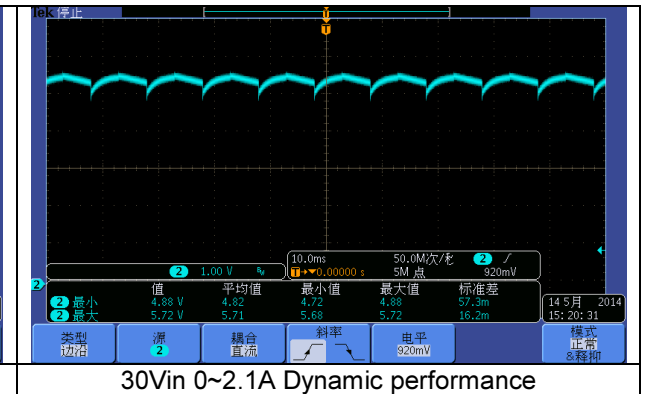
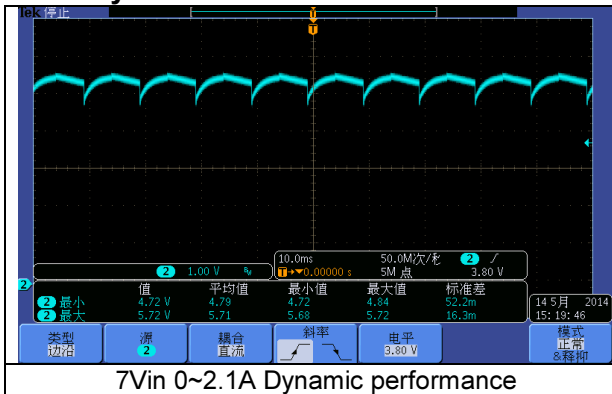


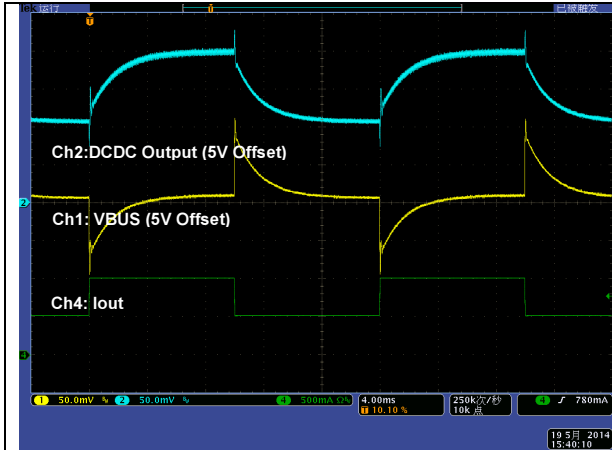


2.4 Shut down

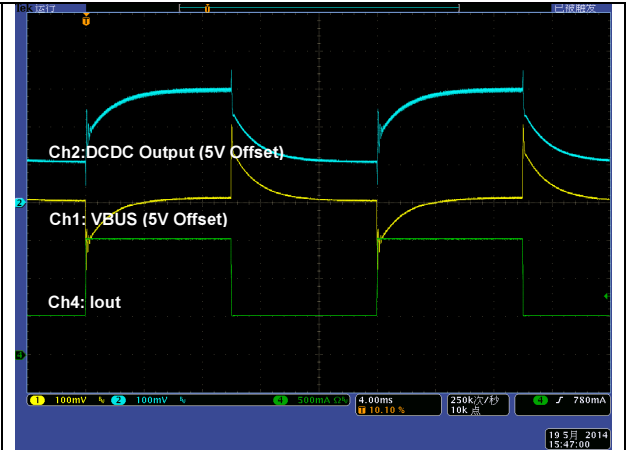


2.5 Dynamic Performance



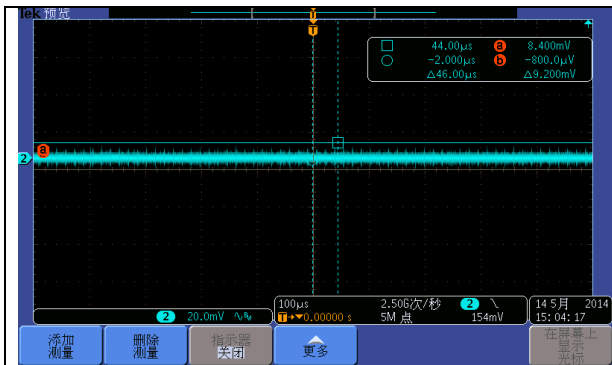


20Vin 0.5A~1A Dynamic performance

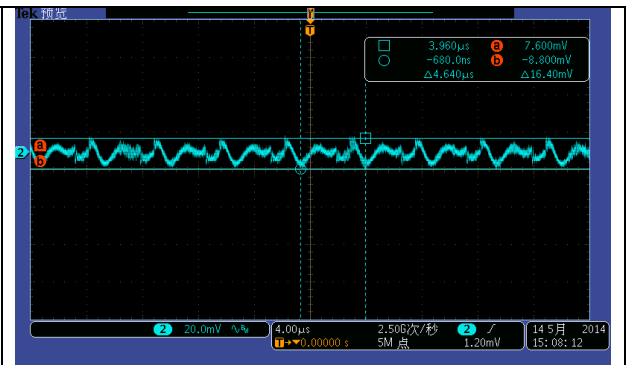


20Vin 0.5A~1.5A Dynamic performance

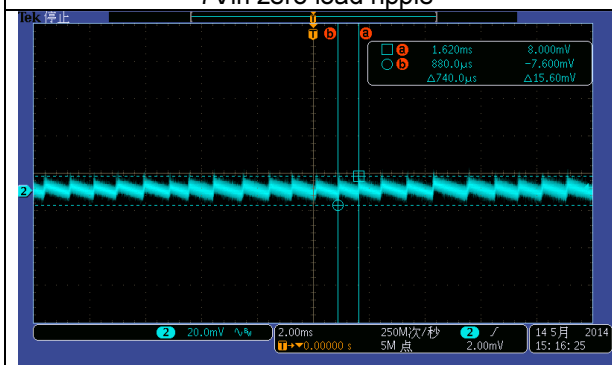
2.6 OUTPUT Voltage Ripple



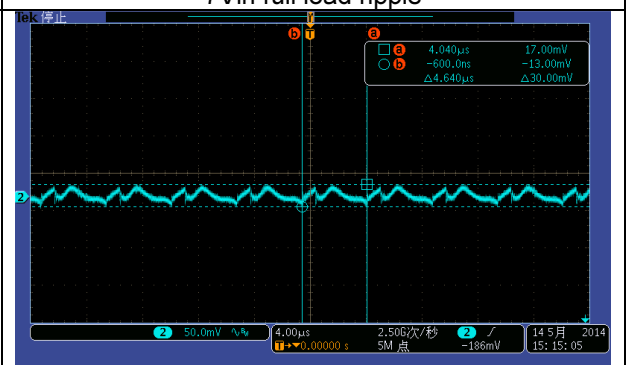
7Vin zero load ripple



7Vin full load ripple

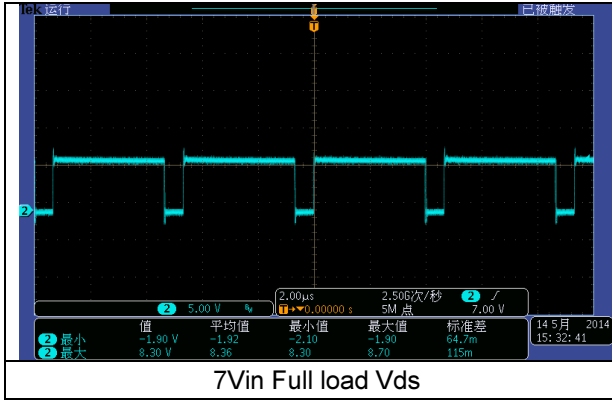


30Vin zero load ripple

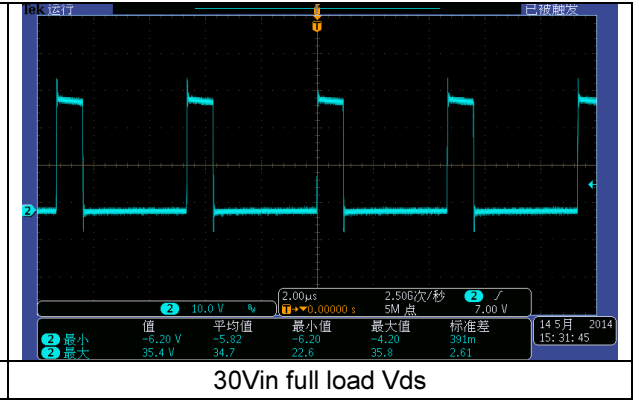


30Vin full load ripple

2.7 Mosfet Vds

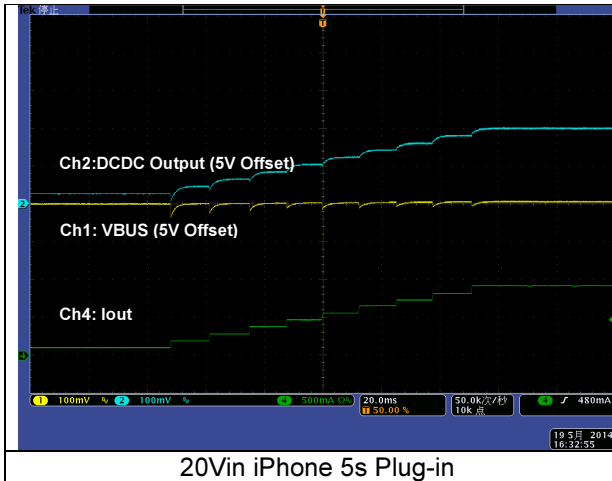


7Vin Full load Vds

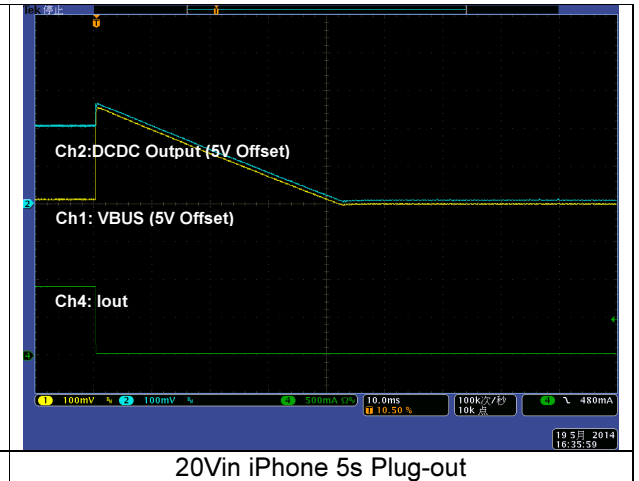


30Vin full load Vds

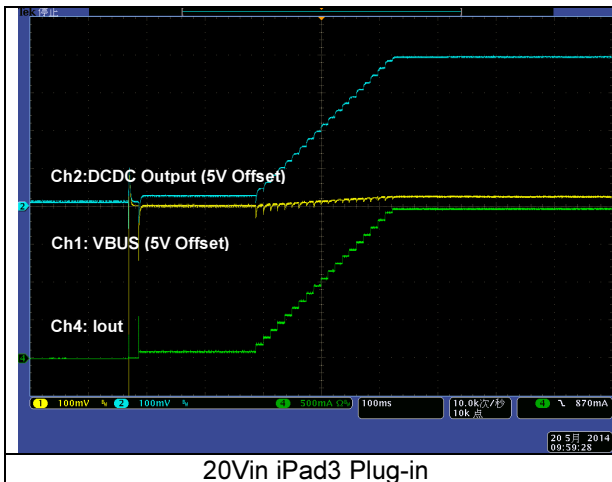
2.8 Portable Device Plug-in and Plug-out



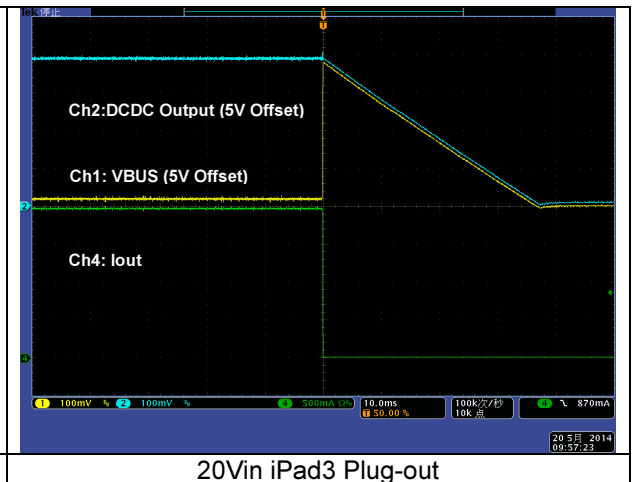
20Vin iPhone 5s Plug-in



20Vin iPhone 5s Plug-out



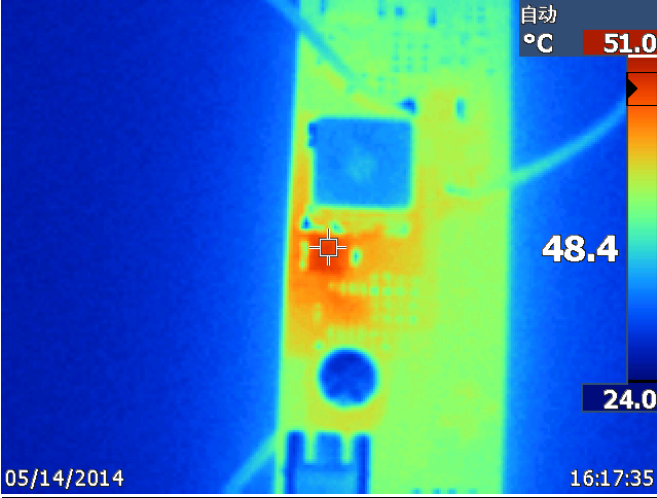
20Vin iPad3 Plug-in



20Vin iPad3 Plug-out

2.9 Thermal Performance

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



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