

PMP10520 Test Report

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Figures

1) Block Diagram

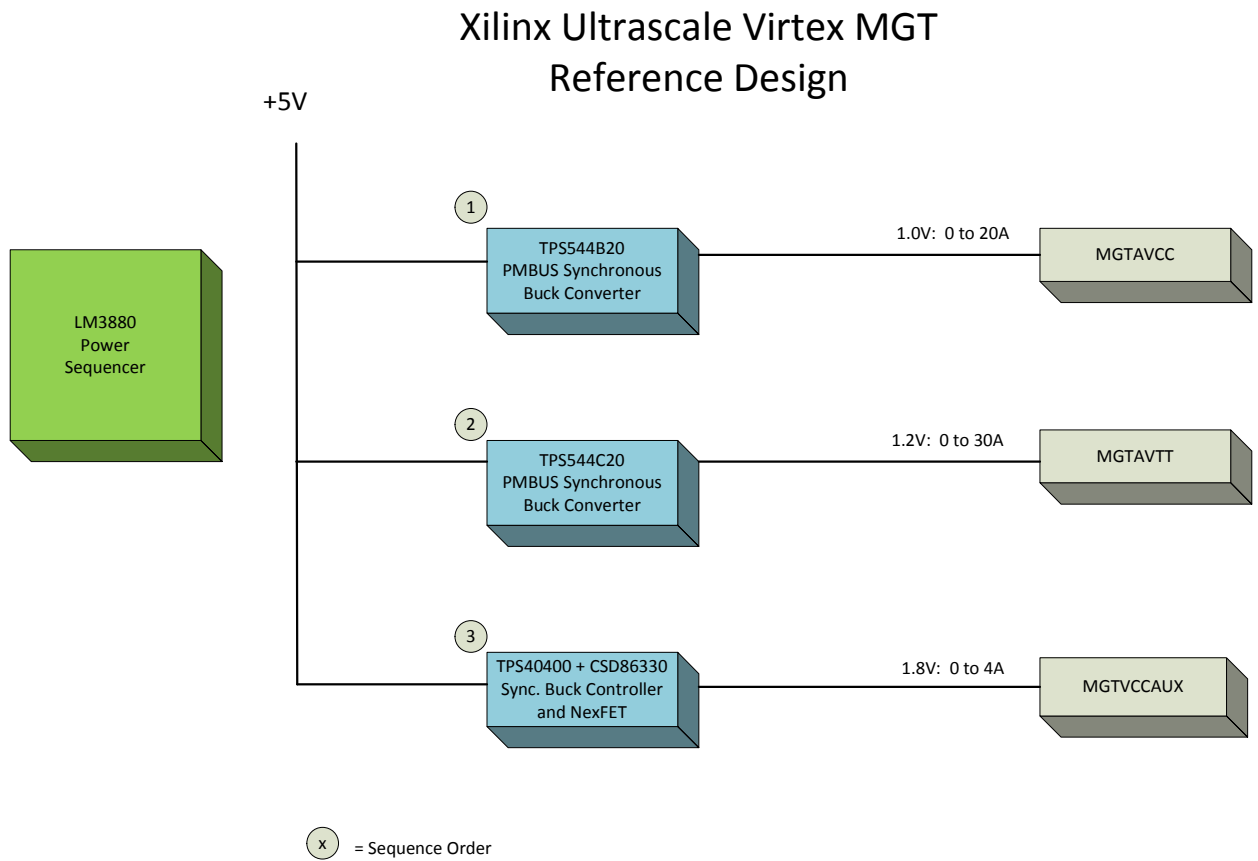


Figure 1. Block Diagram

2) Board Photos

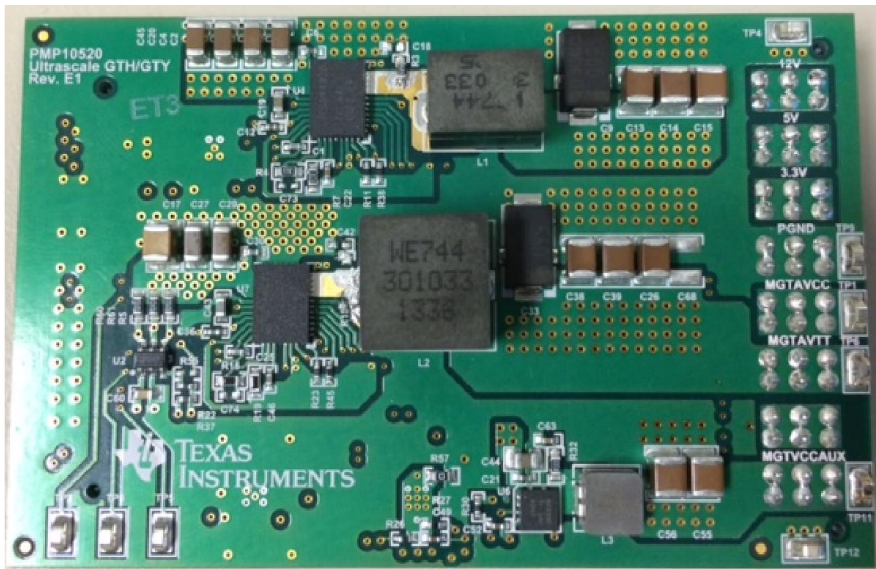


Figure 2. Board Photo Top

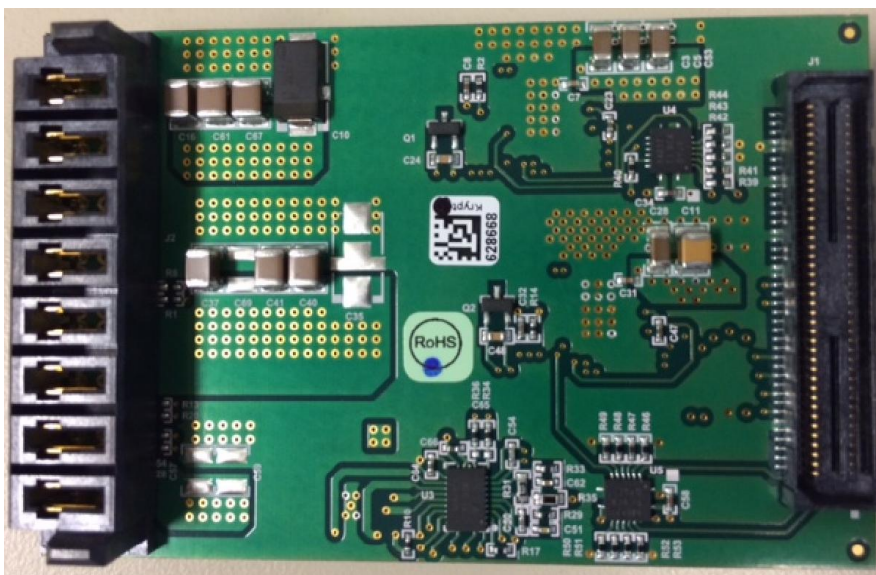


Figure 3. Board Photo Bottom

3) Efficiency

The efficiency of the converters is shown in the figures below. The input voltage is set to 5V.

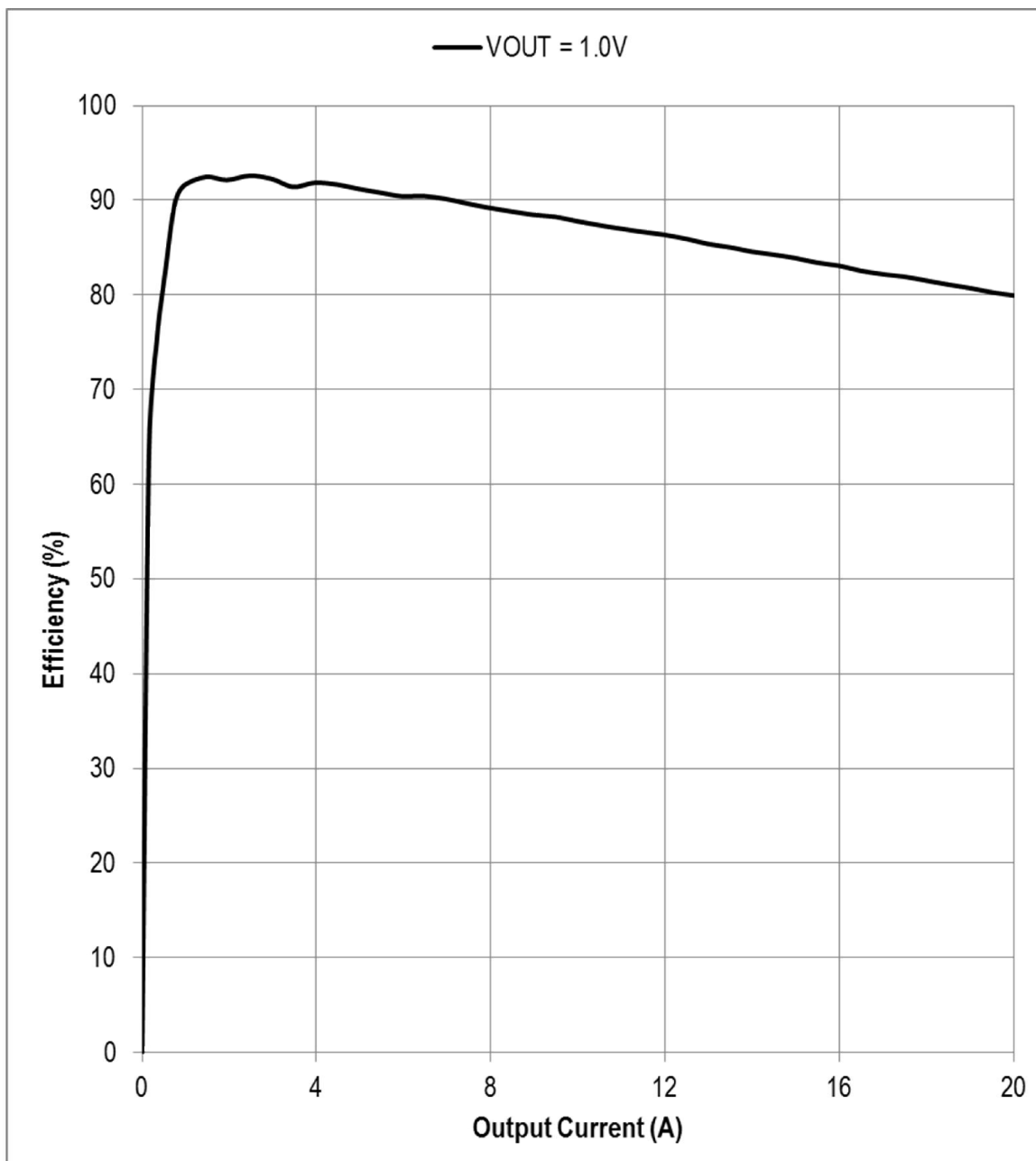


Figure 4. VIN = 5V, MGTAVCC Efficiency

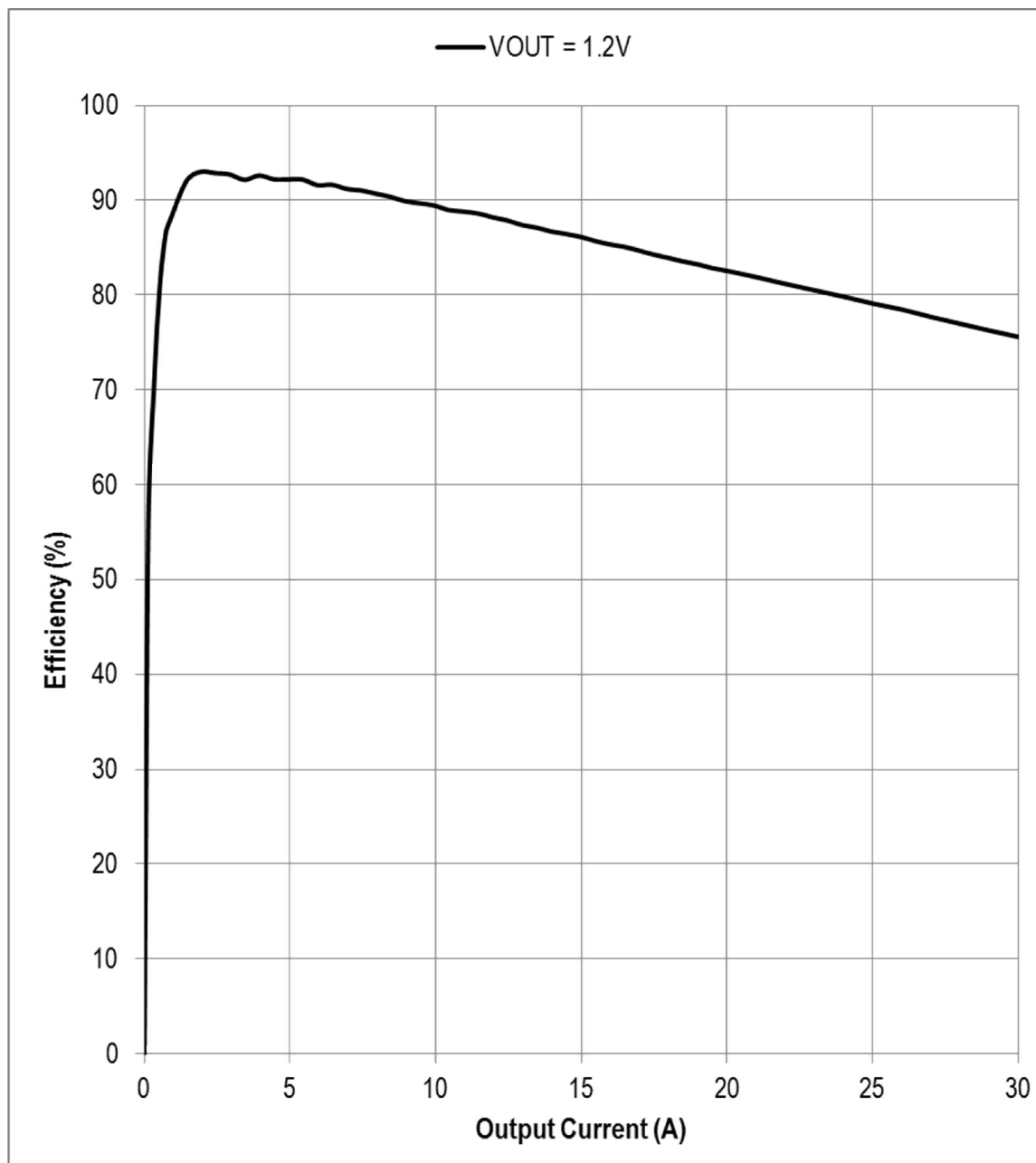


Figure 5. VIN = 5V, MGTAVTT Efficiency

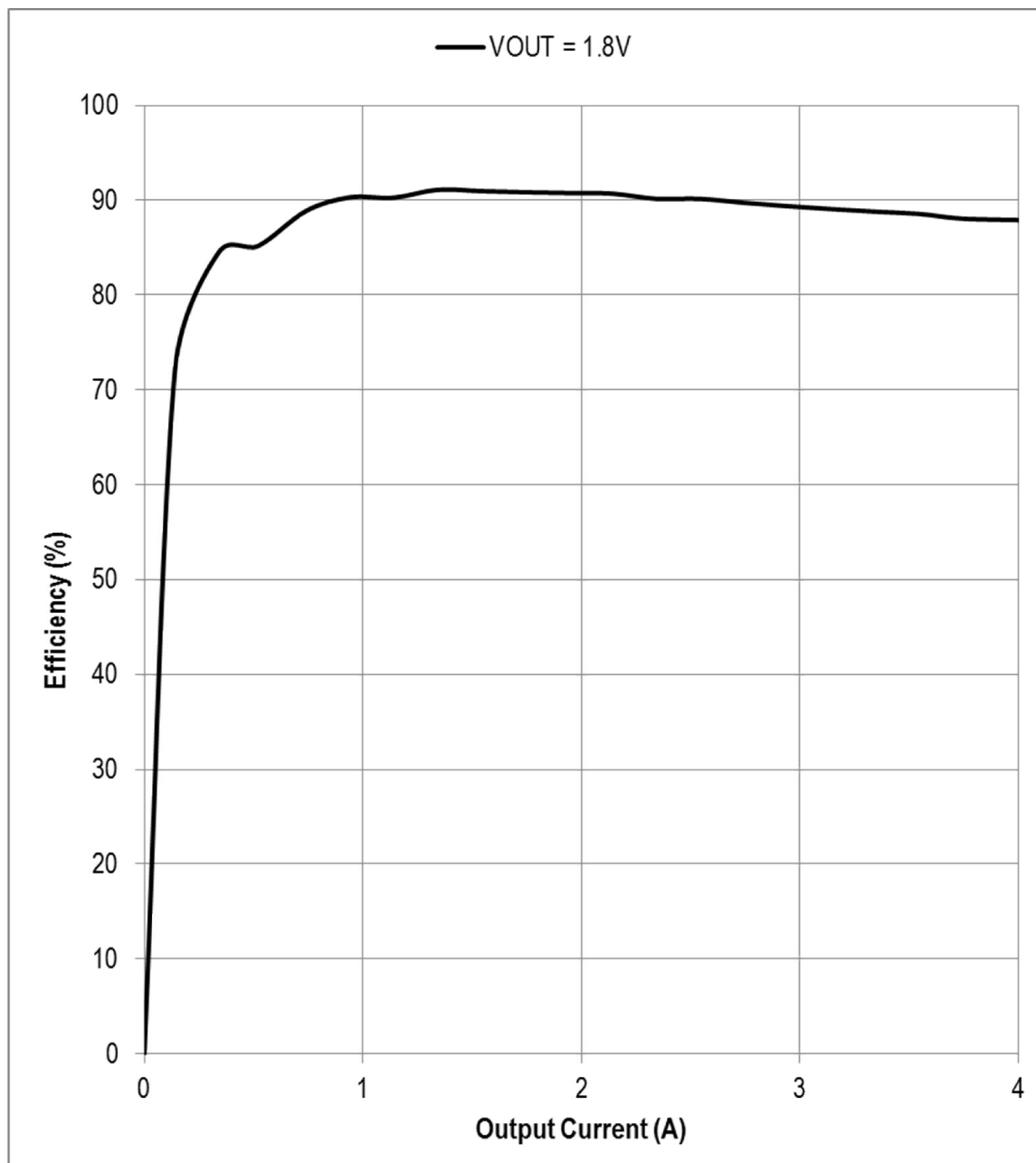


Figure 6. VIN = 5V, MGTVCCAUX Efficiency

4) Load Regulation

The images below show the output load regulation. The input voltage is 5V.

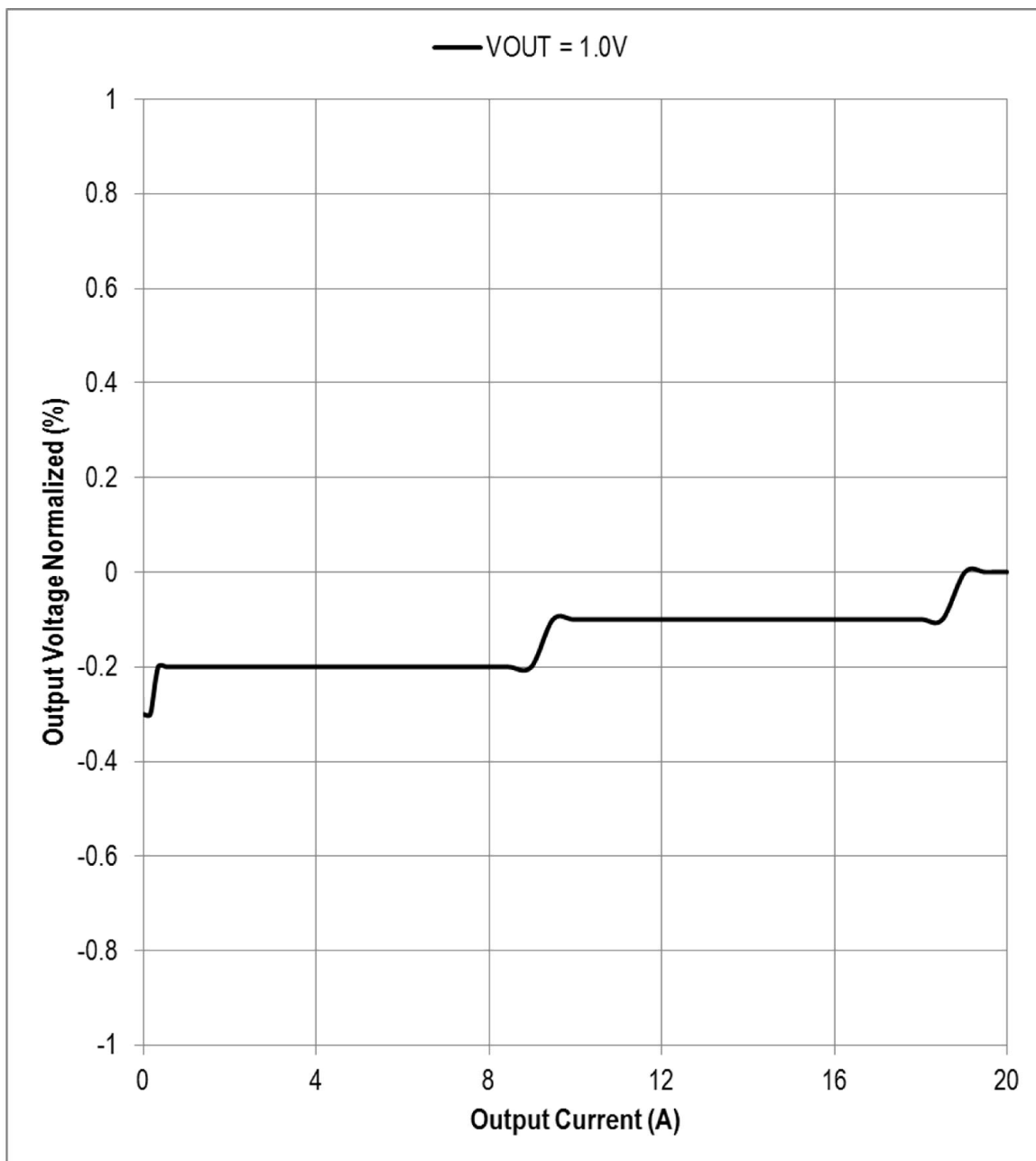


Figure 7. VIN = 5V Load Regulation

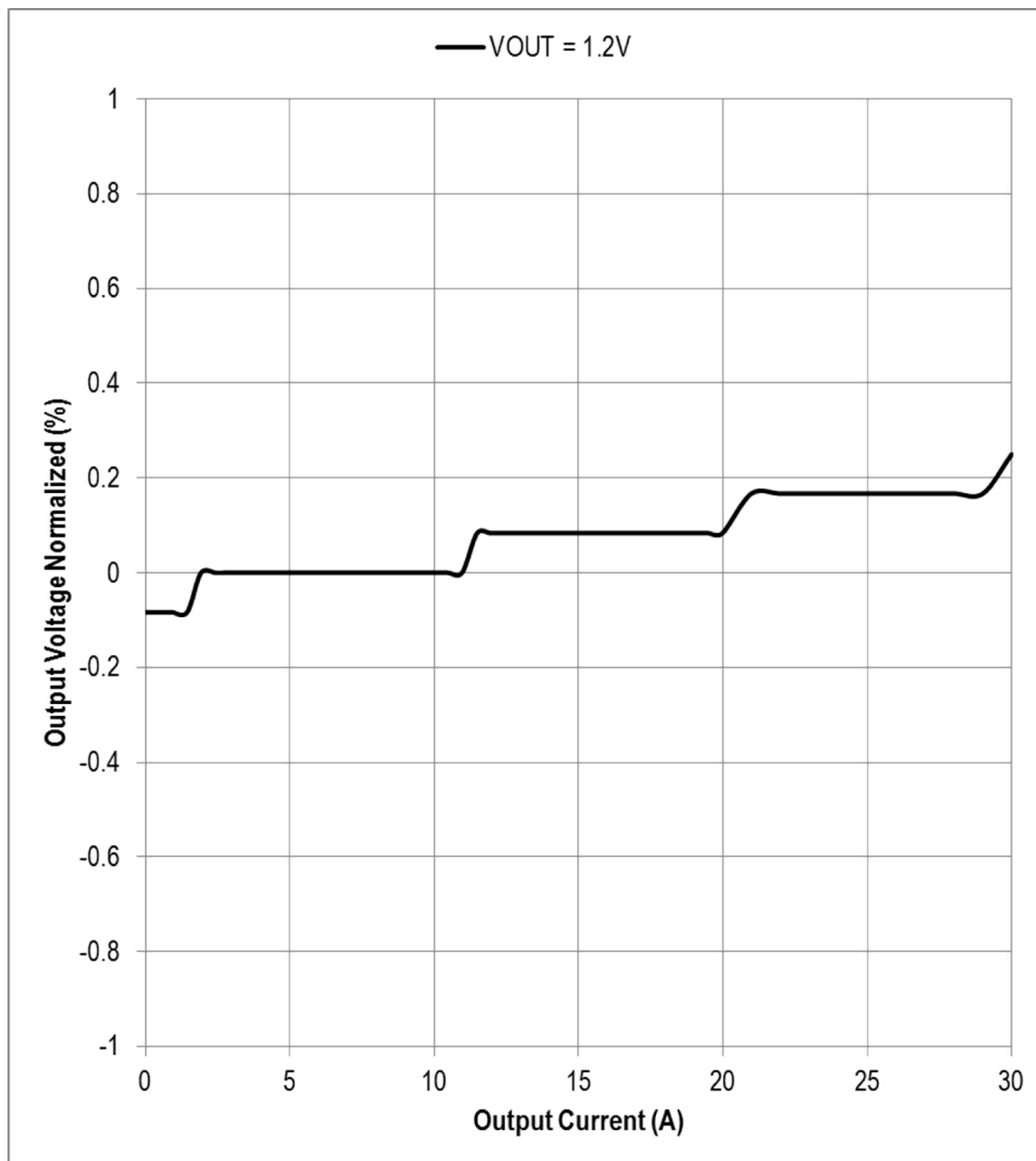


Figure 8. VIN = 5V Load Regulation

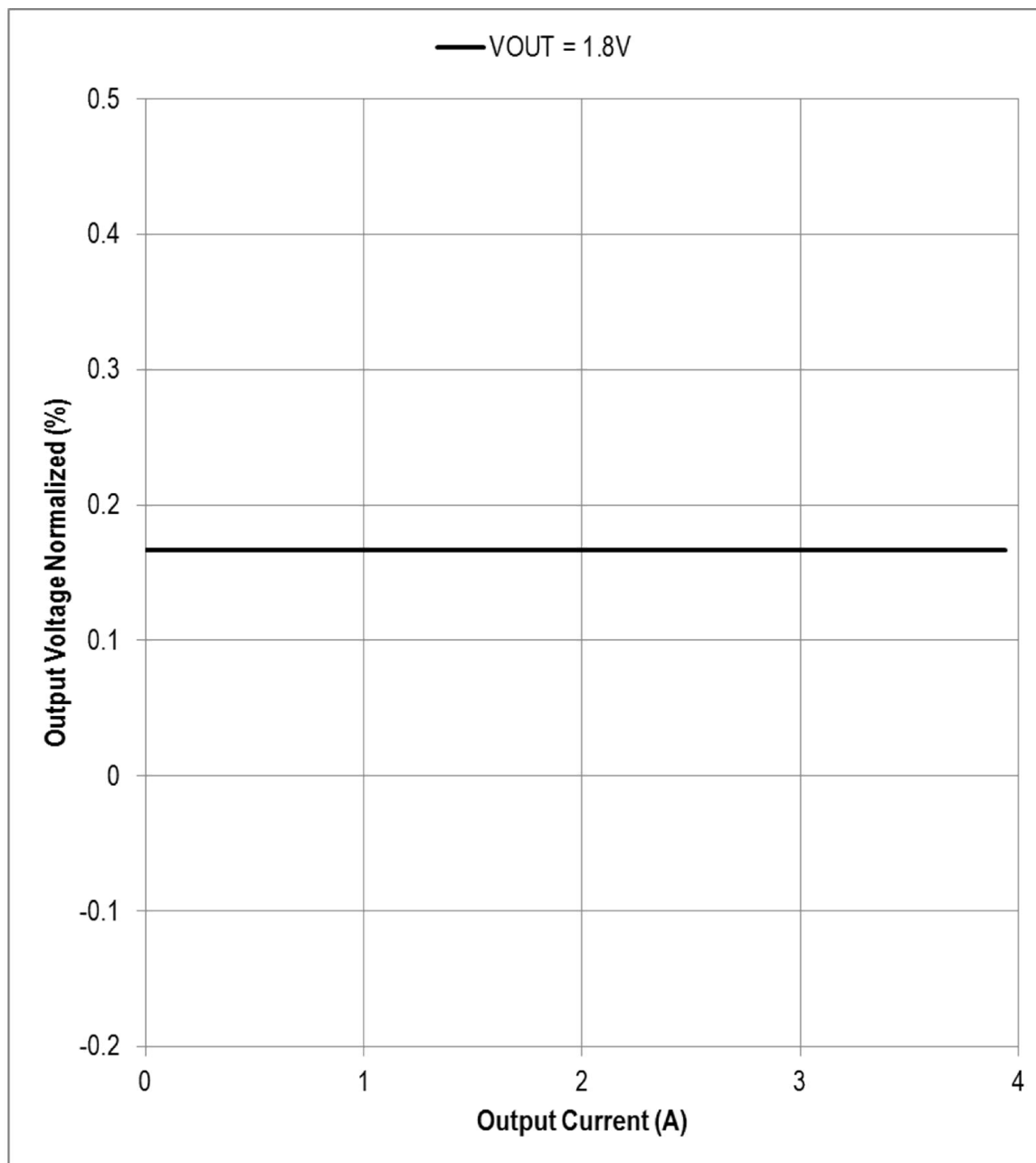
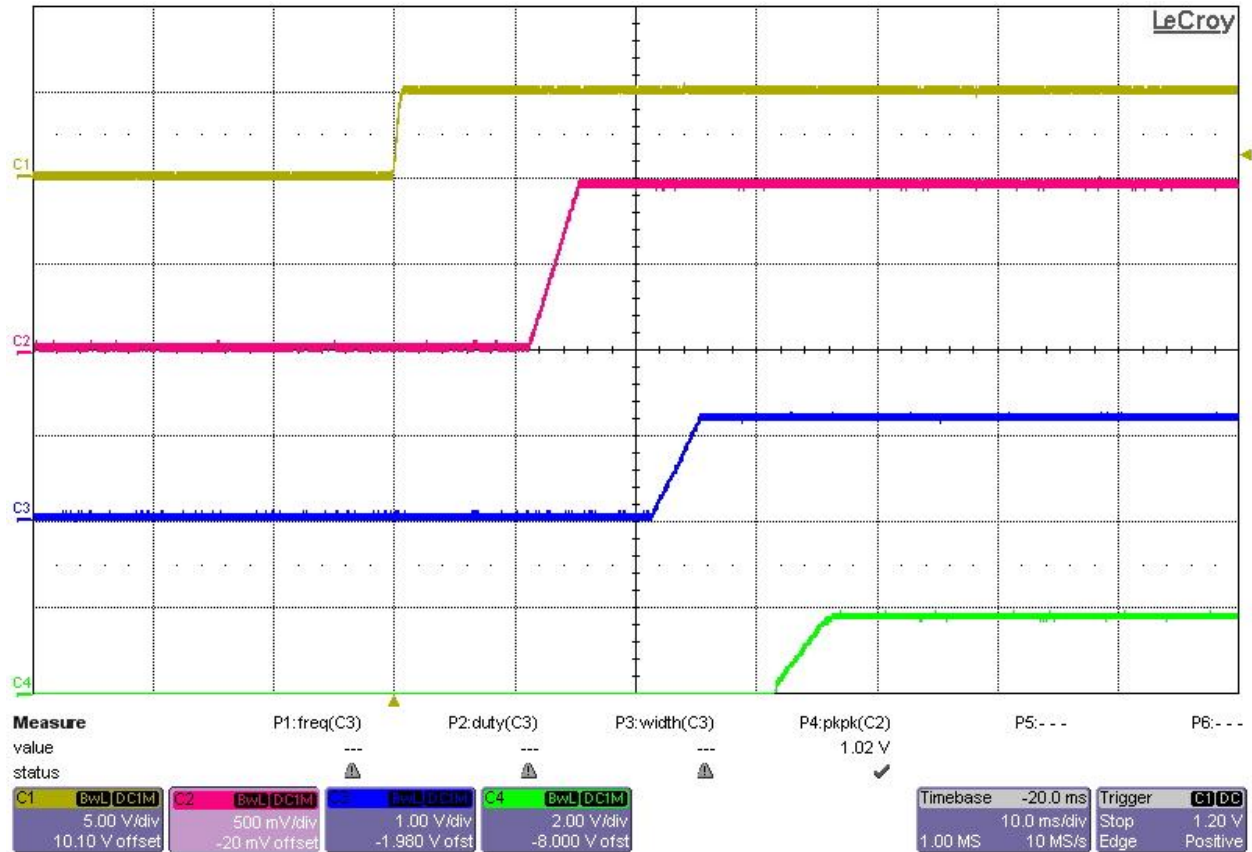


Figure 9. VIN = 5V Load Regulation

5) Startup No Load

The images below shows the startup waveforms. The output is not loaded. The input voltage is set to 5V.



Ch.1: VIN = 5V

Ch.2: MGTAVCC = 1.0V

Ch.3: MGTAVTT = 1.2V

Ch.4: MGTVCCAUX = 1.8V

Figure 10. VIN = 5V Startup with No Load

6) Output Voltage Ripple

The images below shows the output voltage ripple when load is fully applied. The input voltage is 5V.

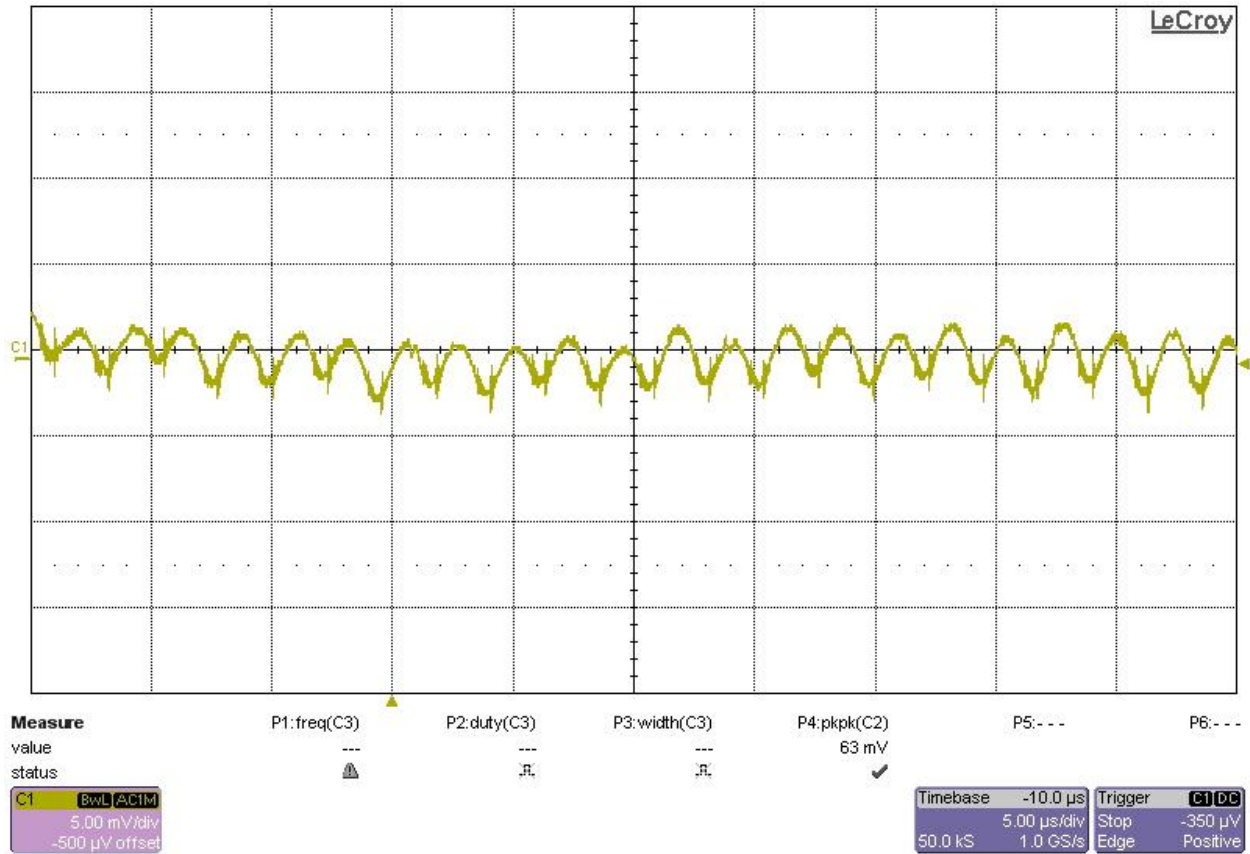


Figure 11. VIN = 5V, VOUT = 1.0V, IOU = 20A Output Ripple Voltage

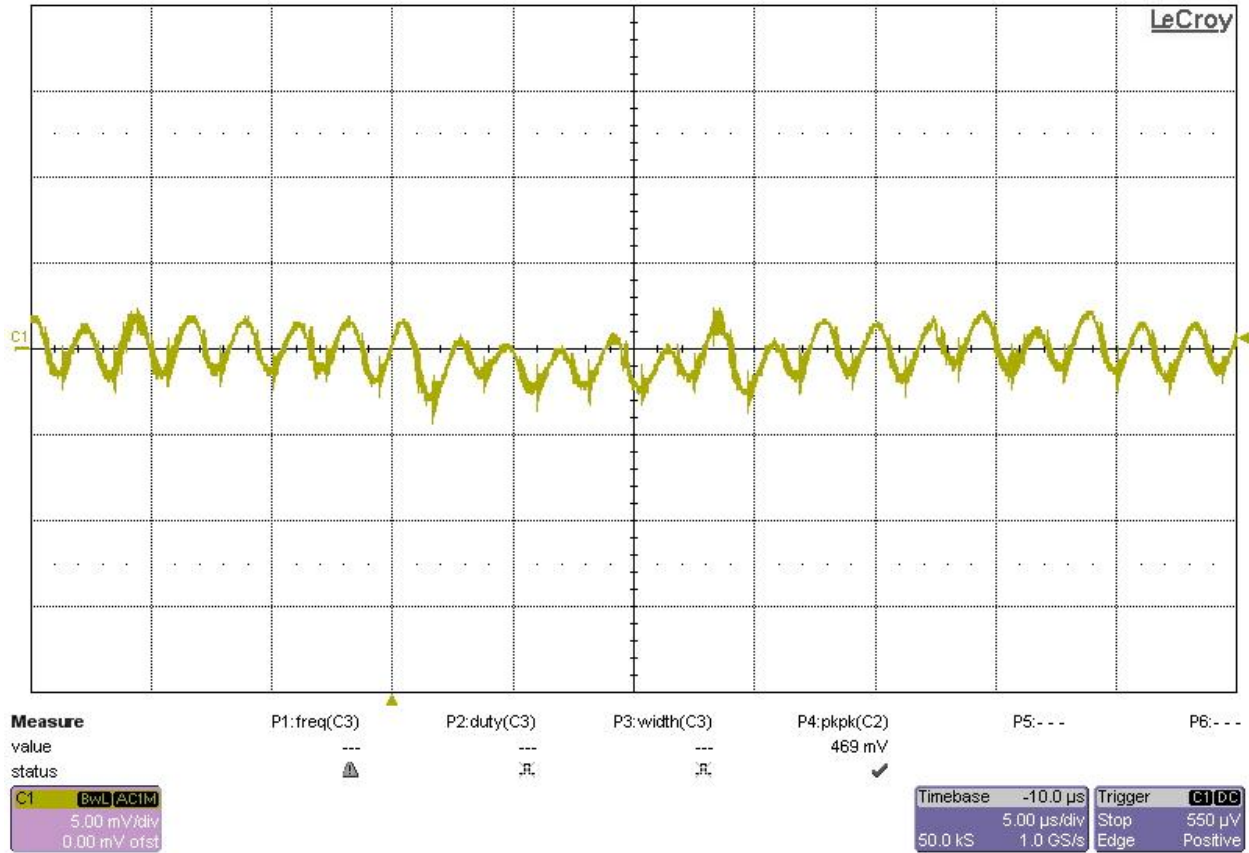


Figure 12. VIN = 5V, VOUT = 1.2V, IOOUT = 30A Output Ripple Voltage

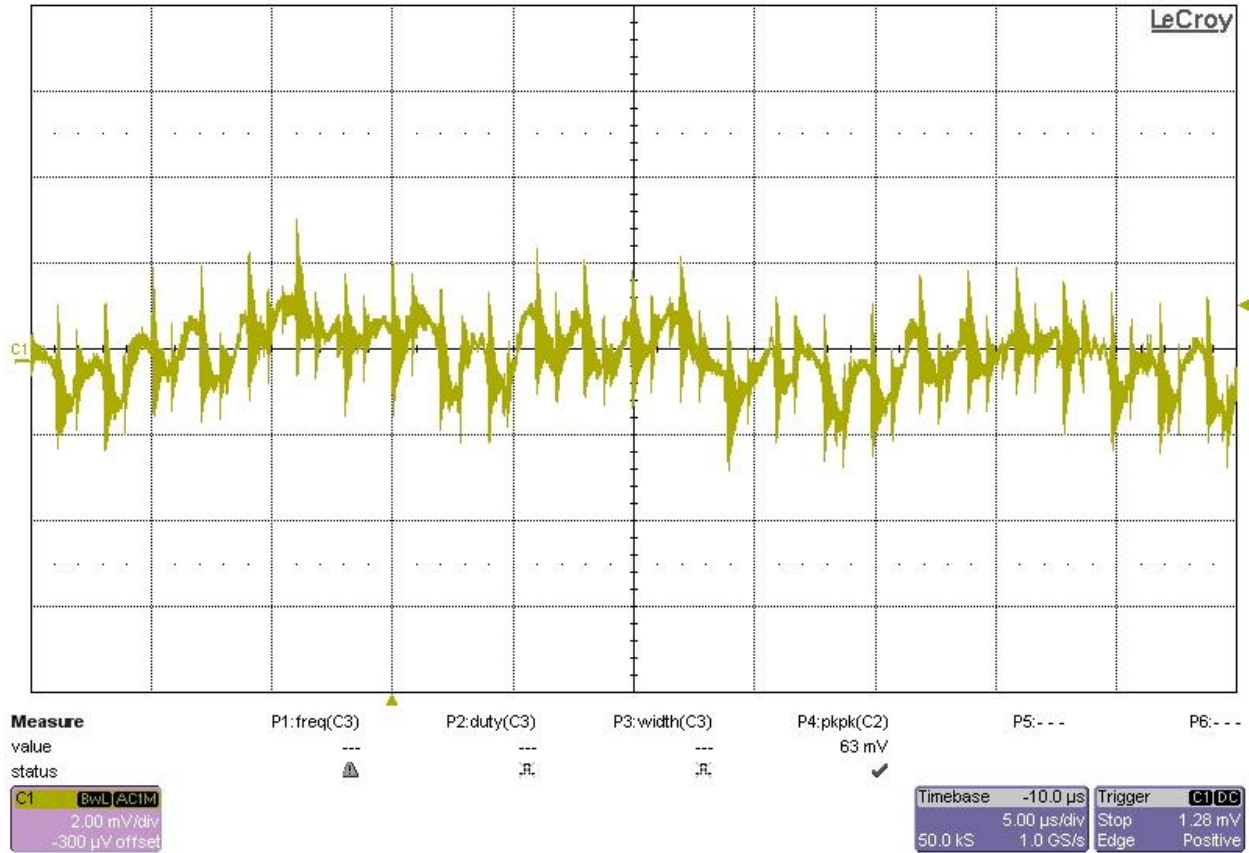


Figure 13. VIN = 5V, VOUT = 1.8V, IOU = 4A Output Ripple Voltage

7) Load Transients

The transient response of the converters is shown below. The input voltage is 5V. The output current is pulsed from no load to 50% load.

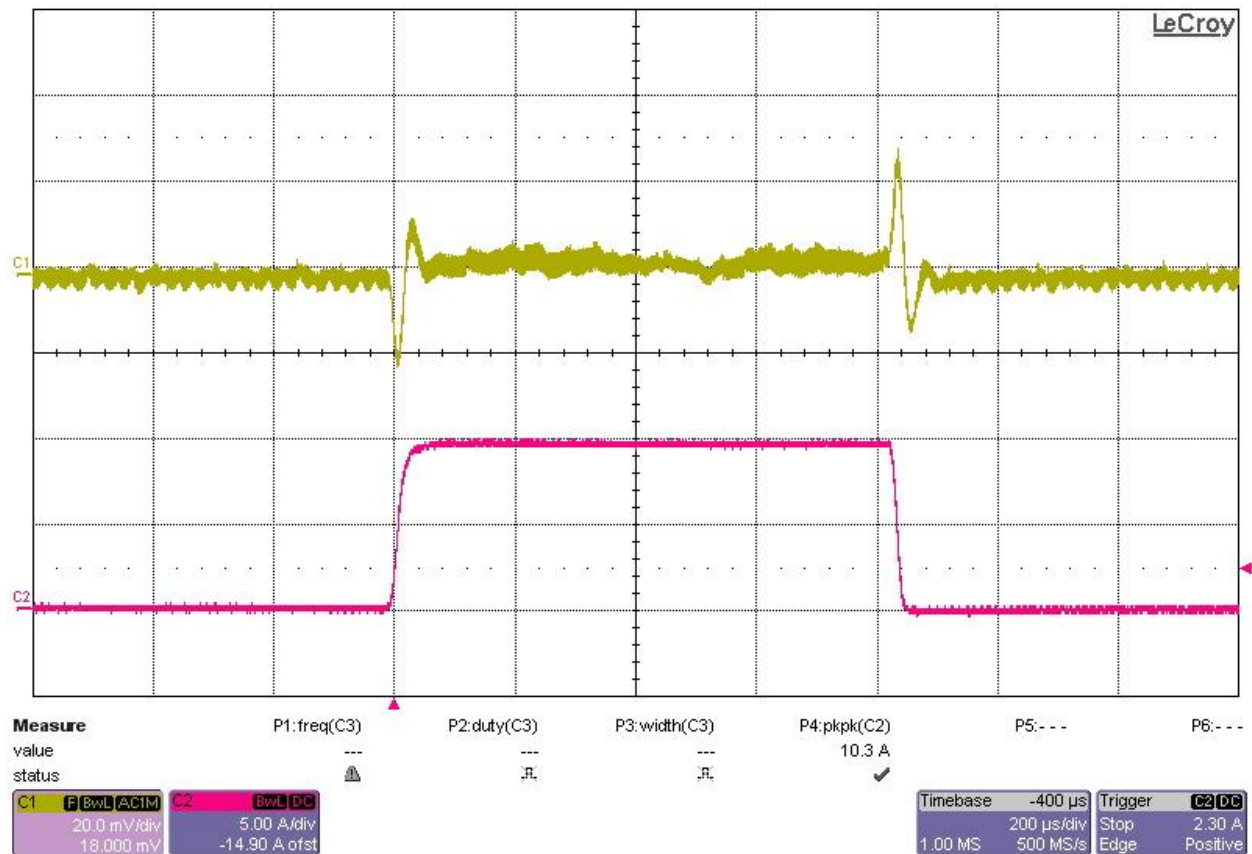


Figure 14. VIN = 5V, VOUT = 1.0V, 0A to 10A Load Transient

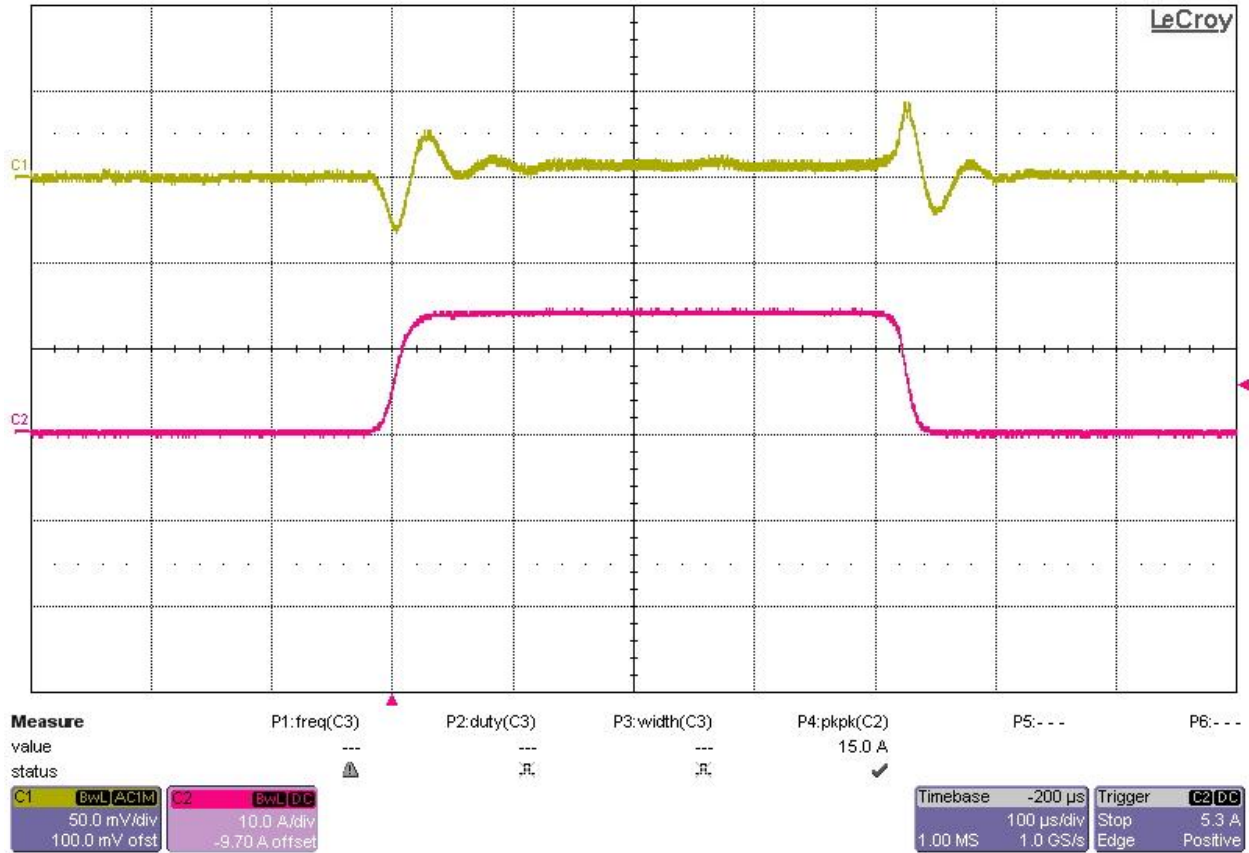


Figure 15. VIN = 5V, VOUT = 1.2V, 0A to 15A Load Transient

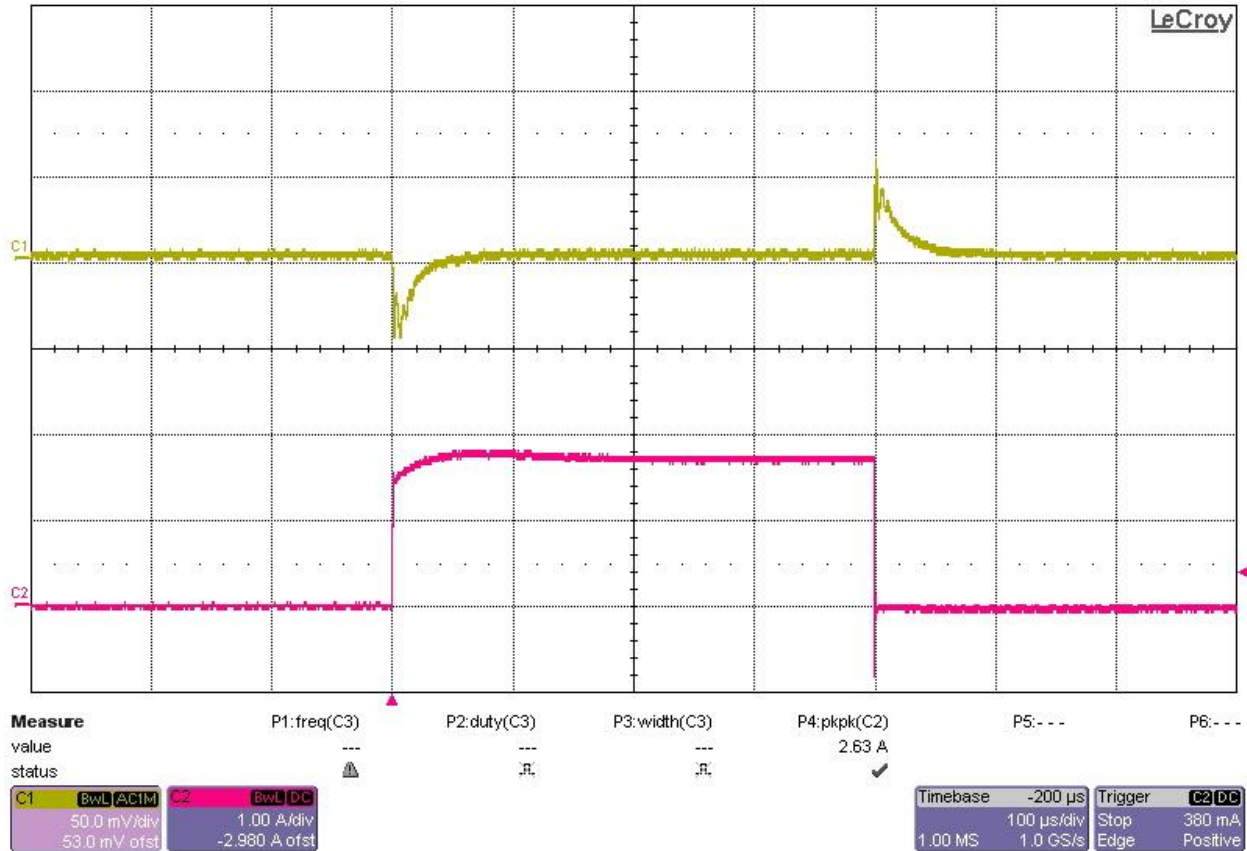


Figure 16. VIN = 5V, VOUT = 1.8V, 0A to 2A Load Transient

8) Bode Plots

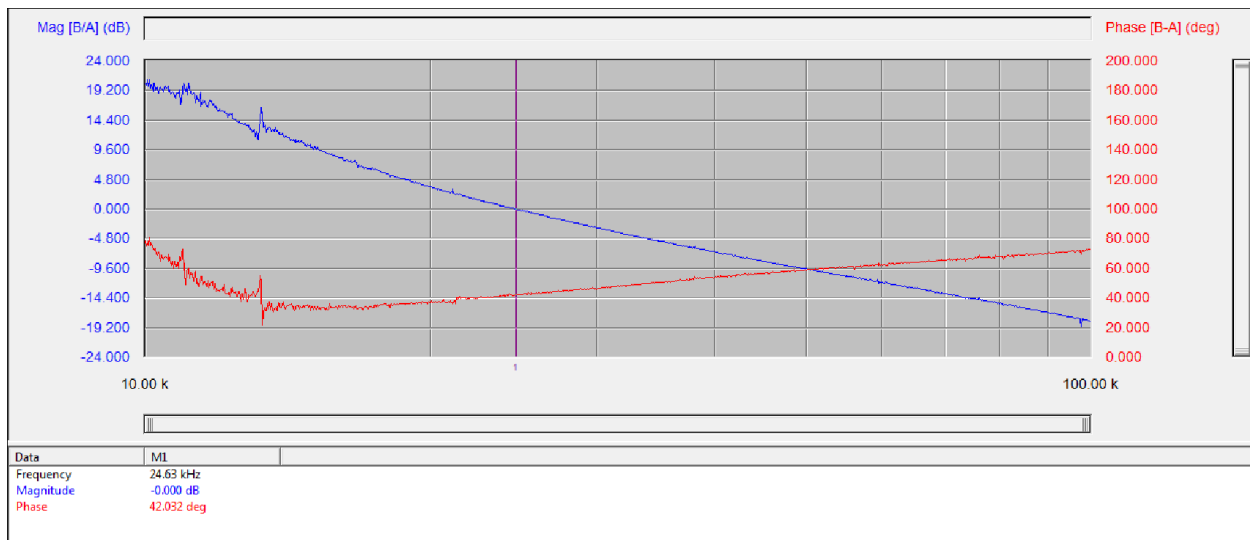


Figure 17. MGTAVCC Bode Plot

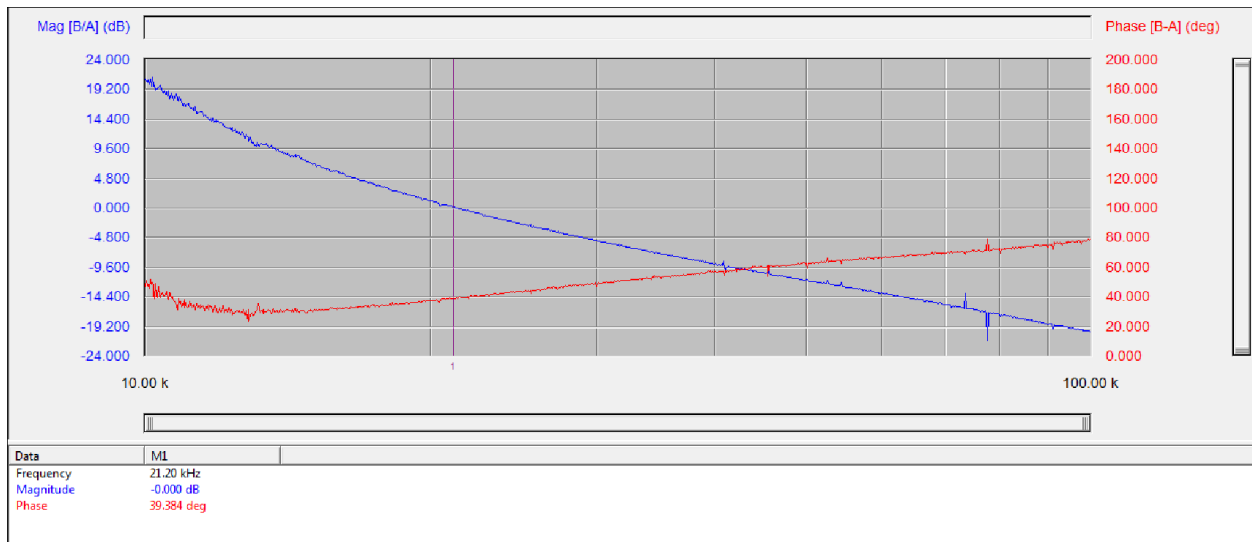


Figure 18. MGTAVTT Bode Plot

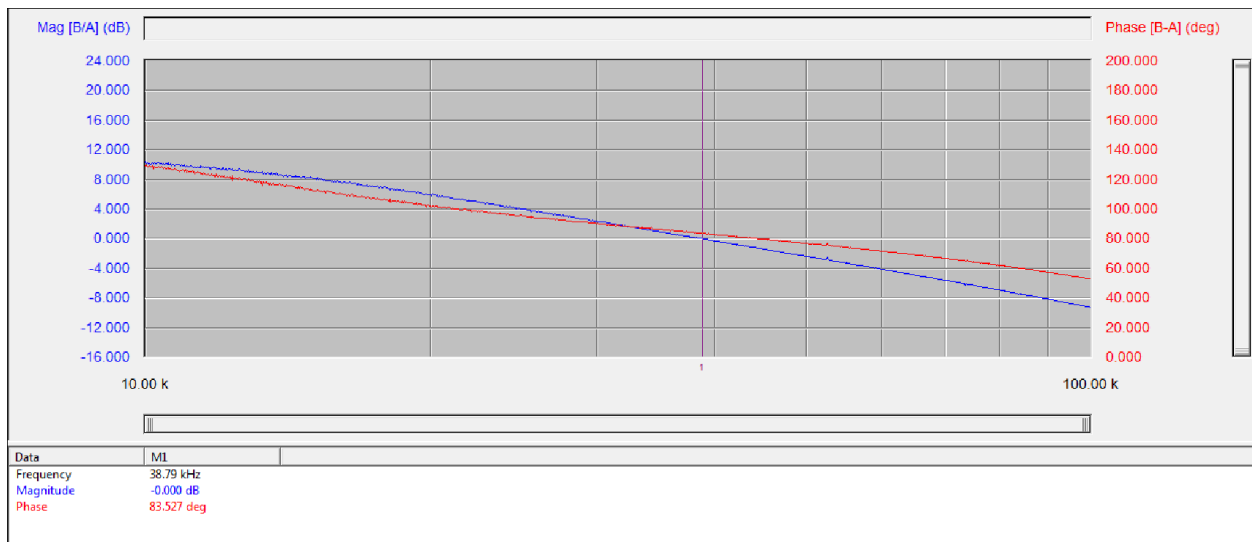


Figure 19. MGTVCCAUX Bode Plot

9) Thermal Images

Thermal images for each power supply rail are shown below at full load. While each individual rail is at full load, the remaining rails do not draw any current.

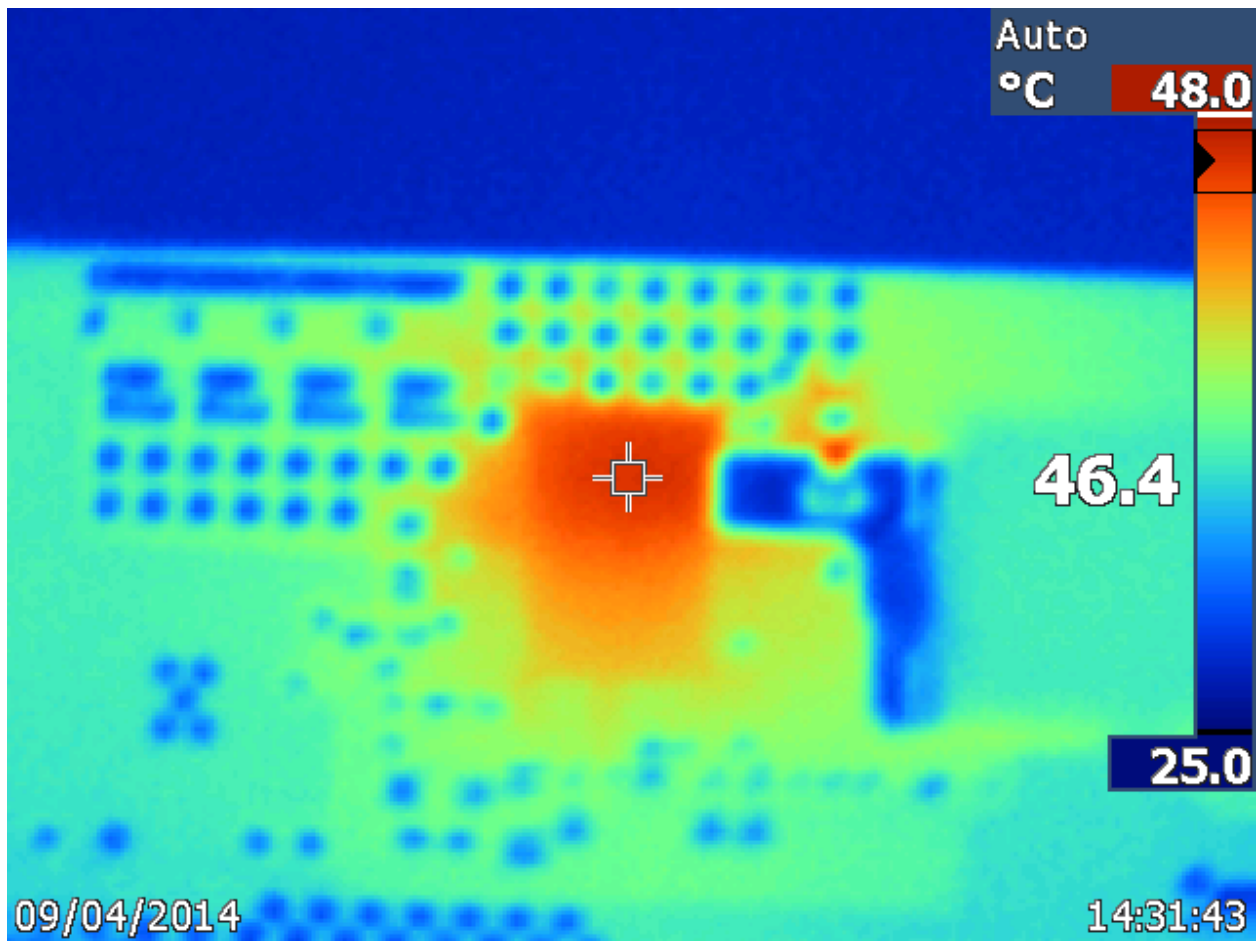


Figure 20. VIN = 5V, VOUT = 1.0V, IOU = 20A Thermal Image

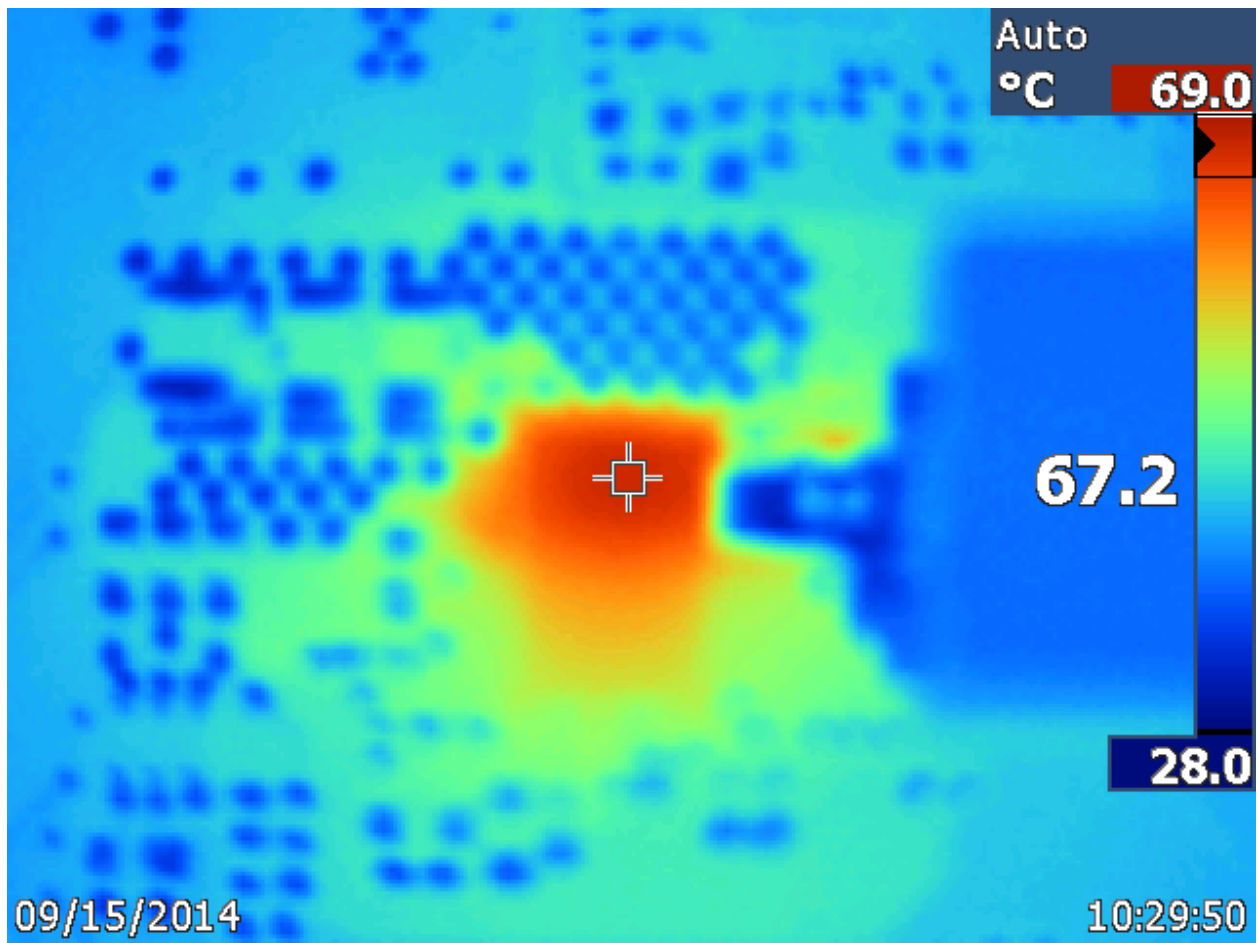


Figure 21. VIN = 5V, VOUT = 1.2V, IOU = 30A Thermal Image

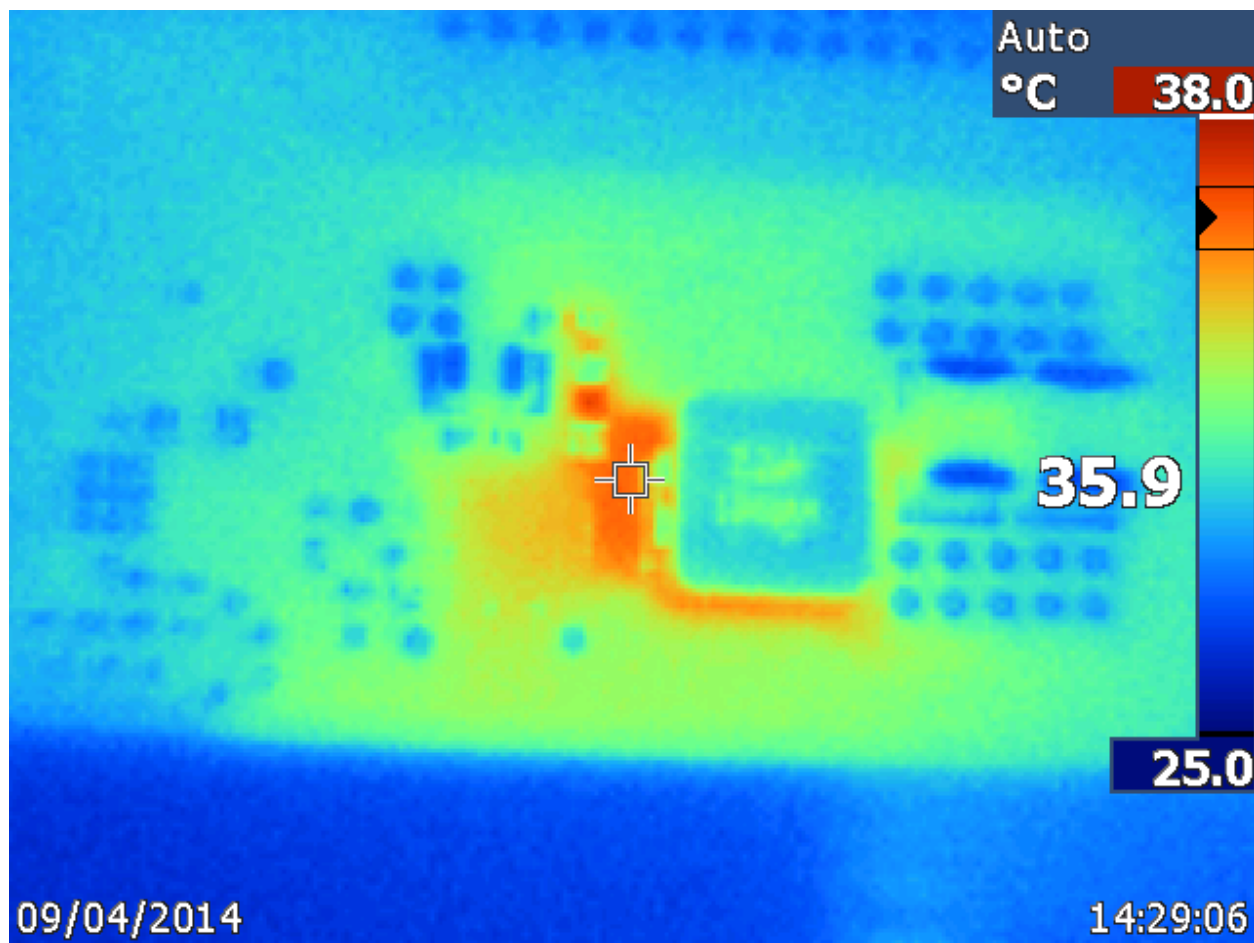


Figure 22. VIN = 5V, VOUT = 1.8V, IOU = 4A Thermal Image

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