

PMP9407 Test Report

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Figures

1) Block Diagram

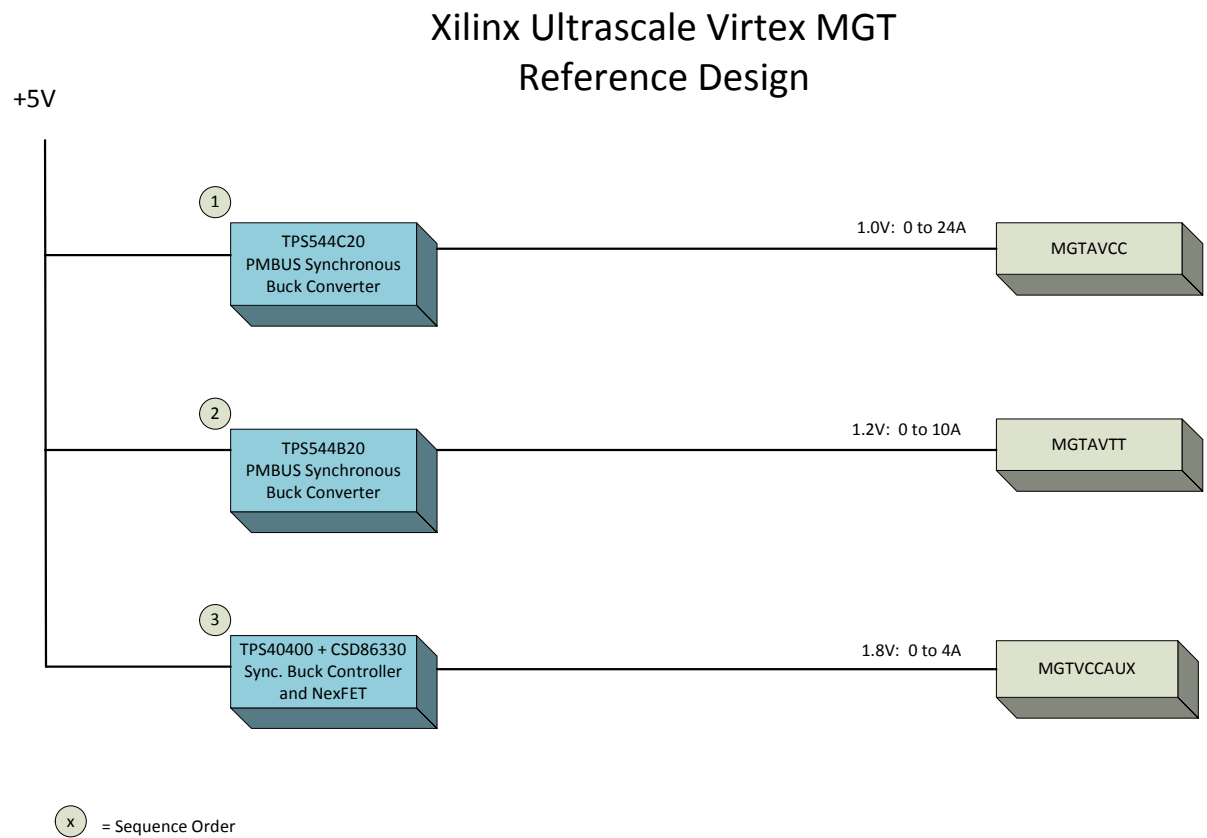


Figure 1. Block Diagram

2) Board Photos

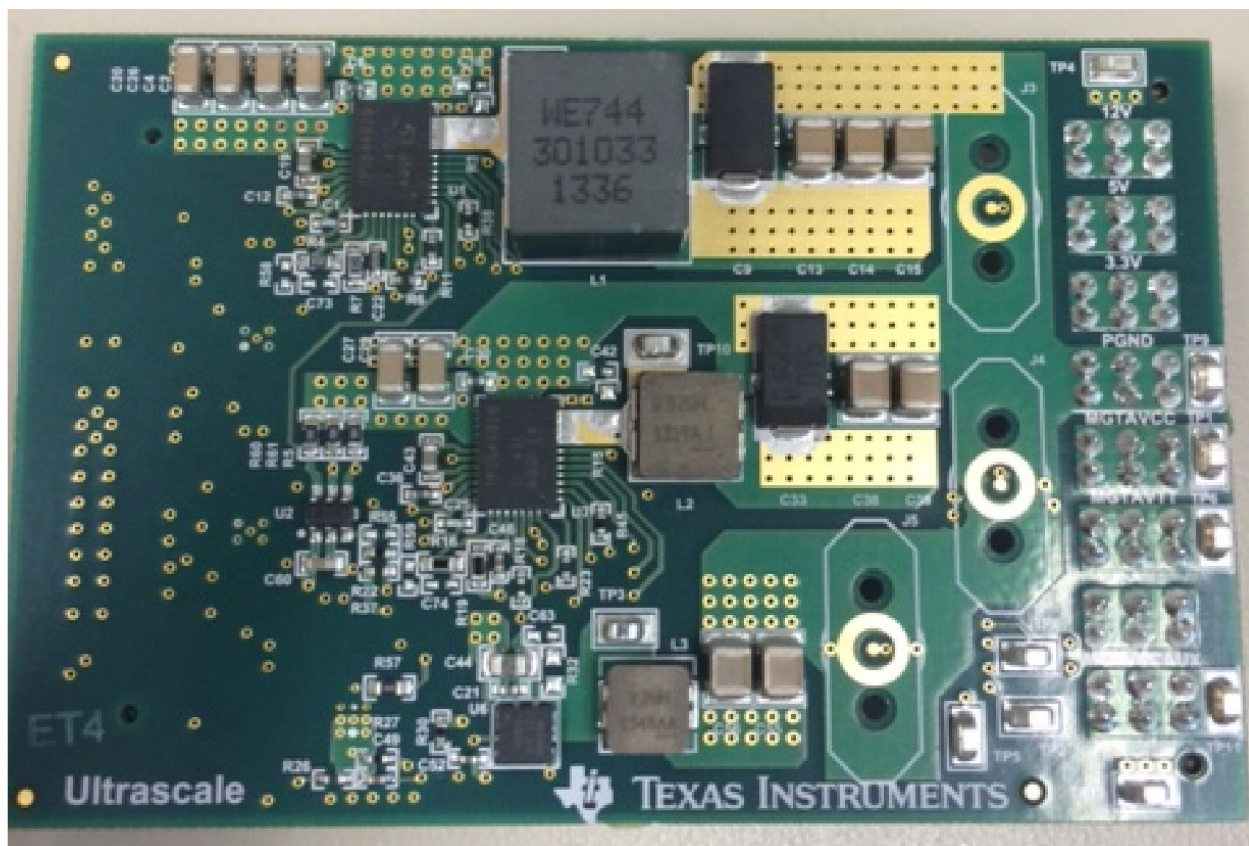


Figure 2. Board Photo Top

3) Efficiency

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

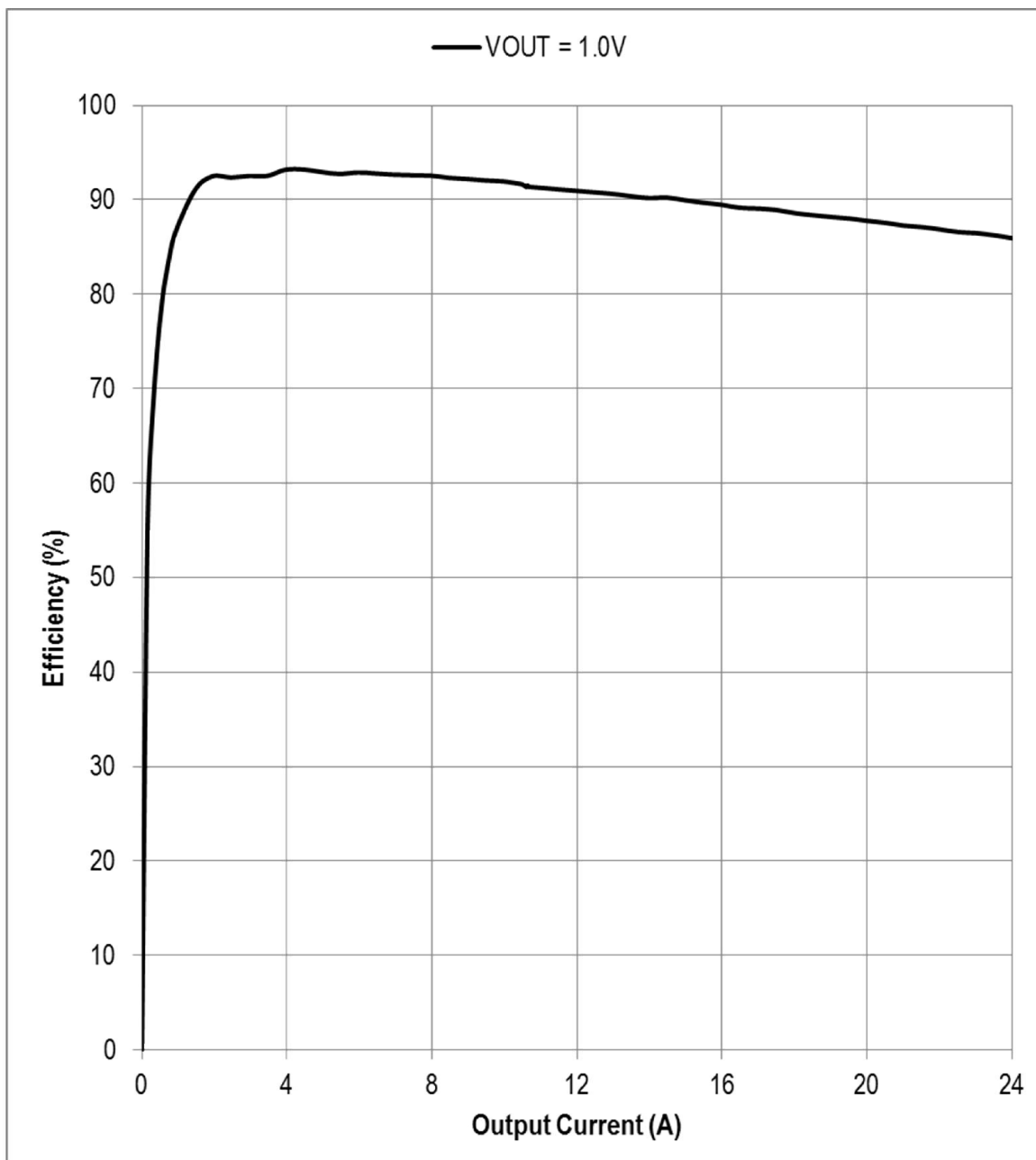


Figure 4. VIN = 5V, MGTAVCC Efficiency

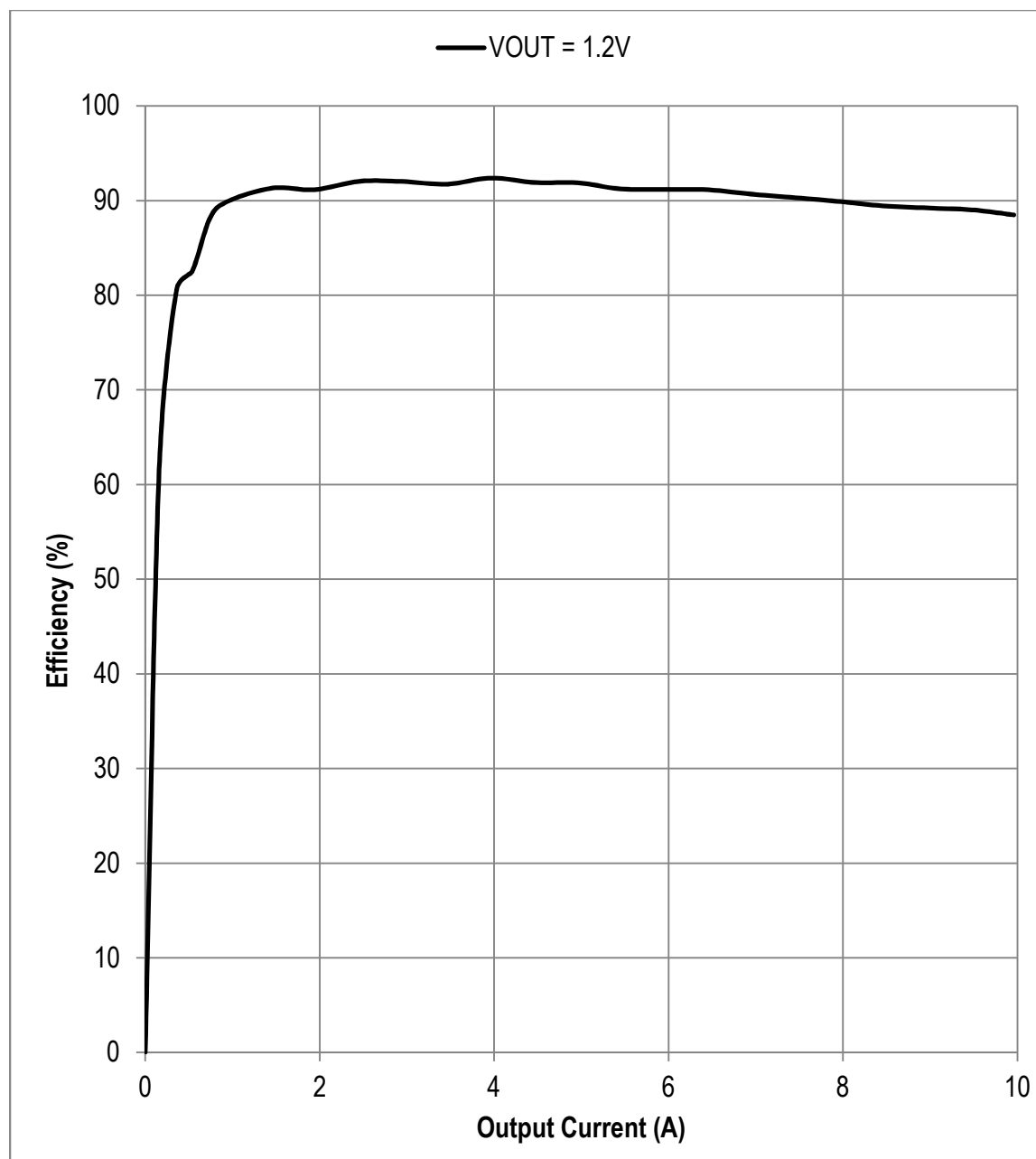


Figure 5. VIN = 5V, MGTA VTT Efficiency

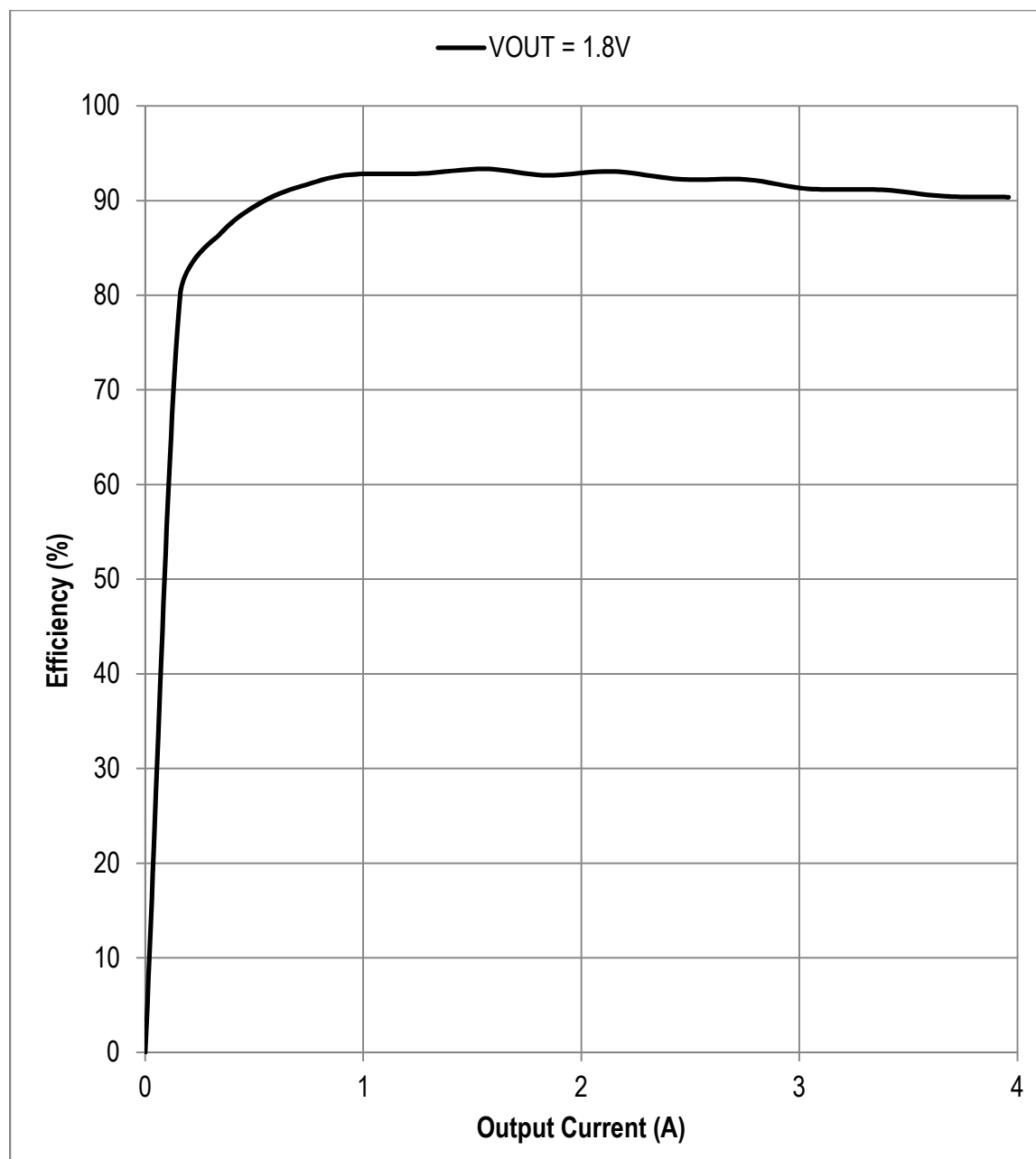


Figure 6. VIN = 5V, MGTVCCAUX Efficiency

4) Load Regulation

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

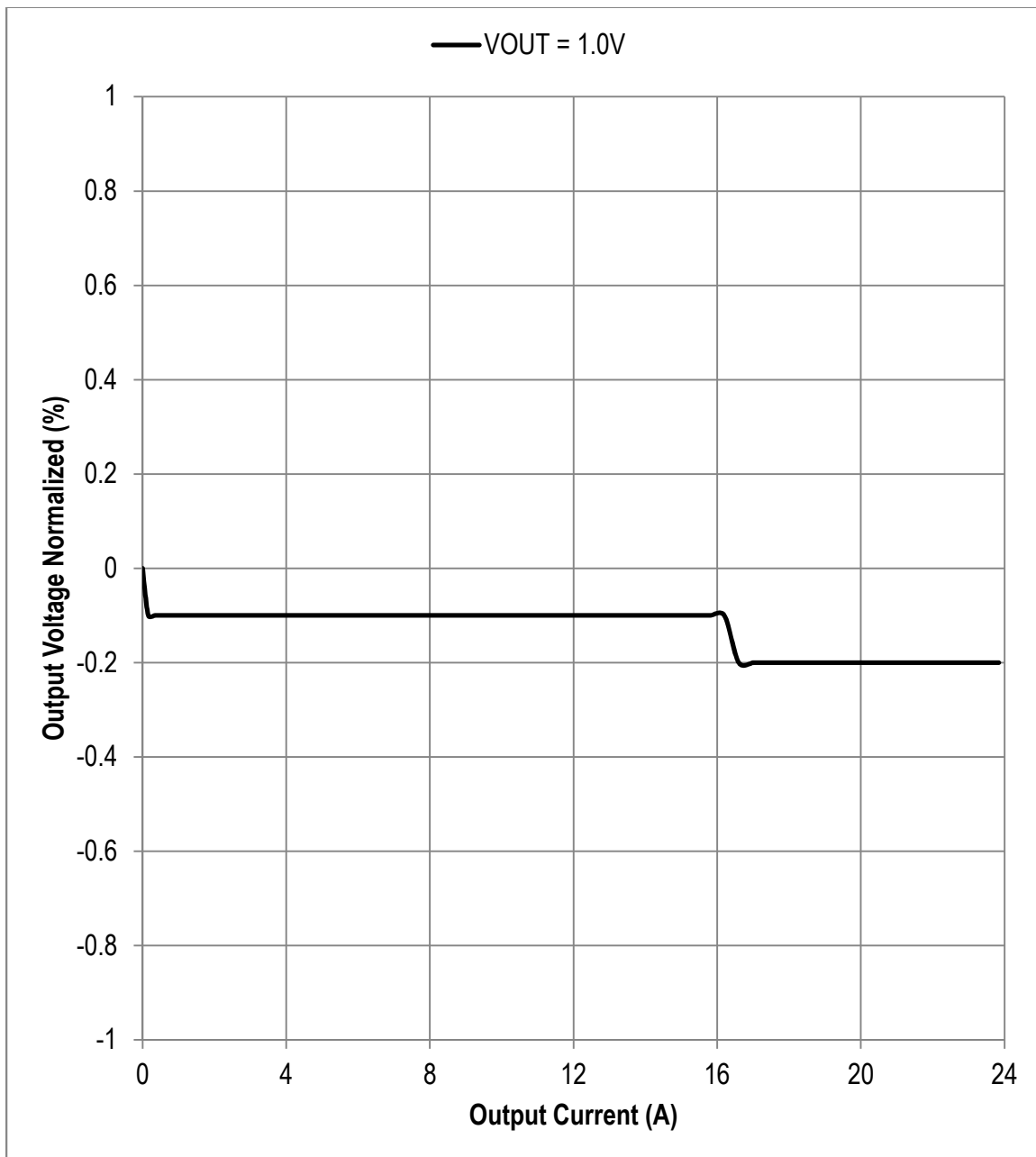


Figure 7. VIN = 5V Load Regulation

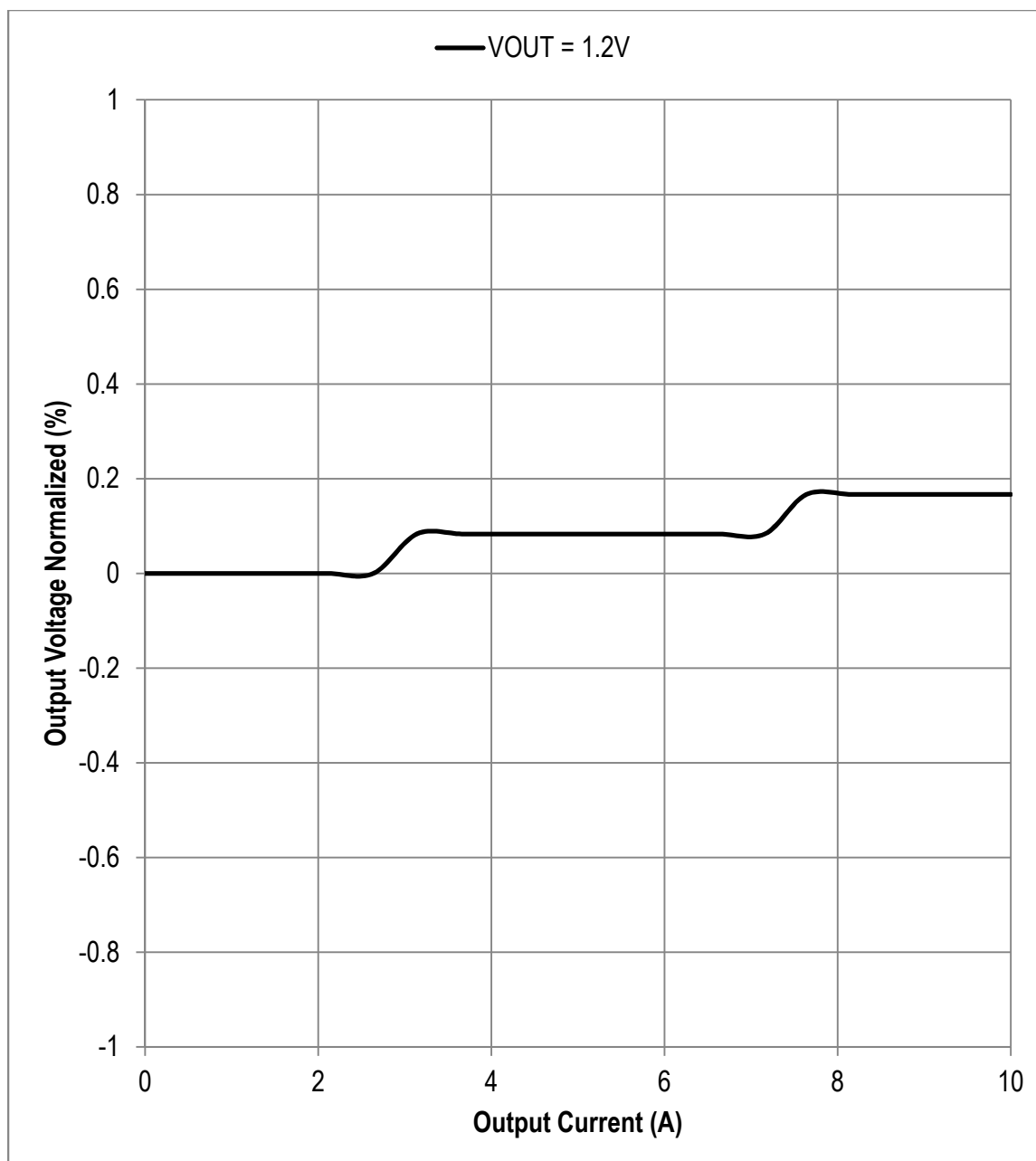


Figure 8. VIN = 5V Load Regulation

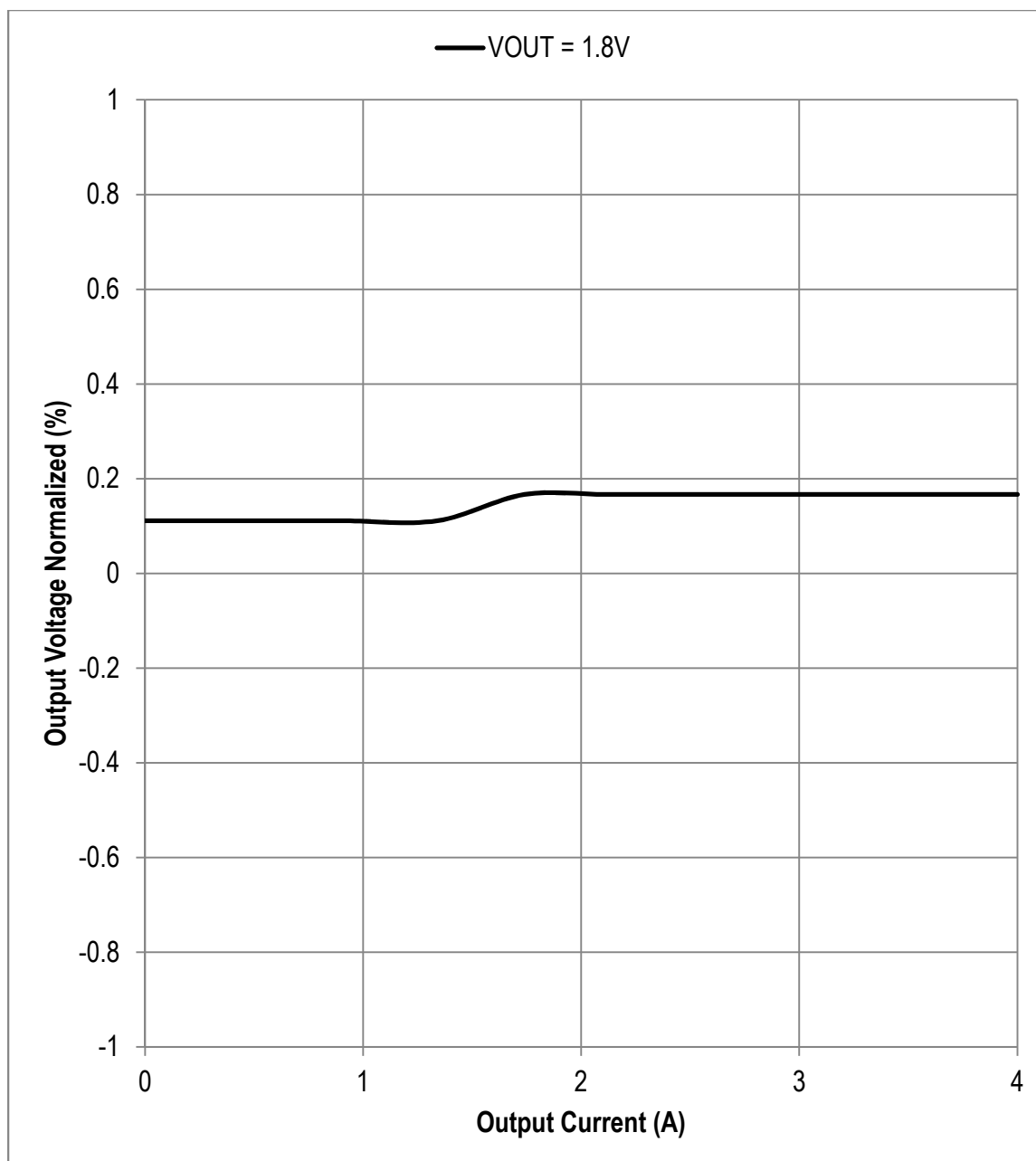
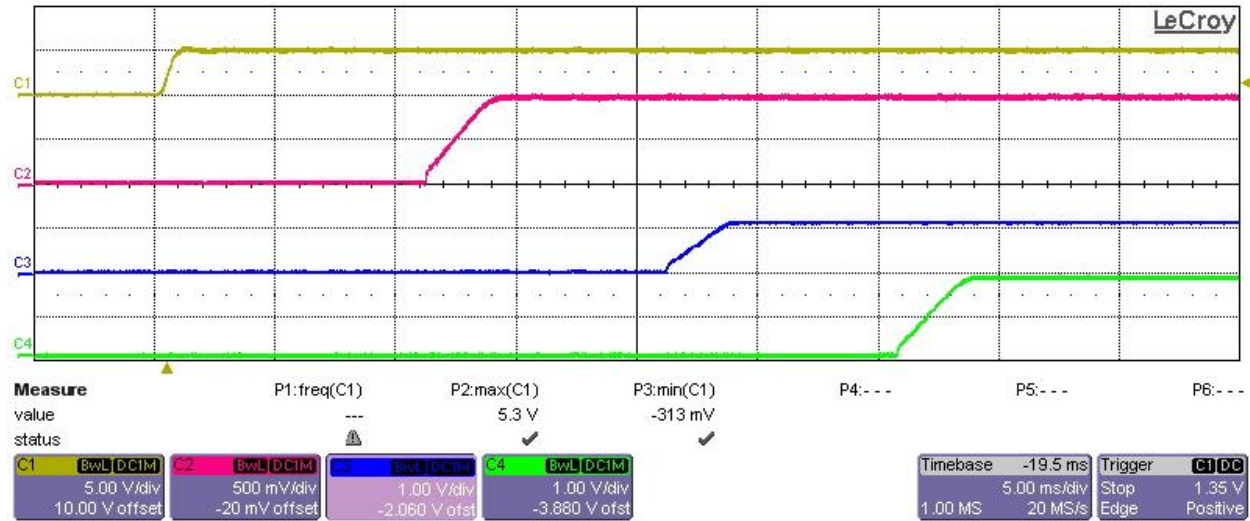


Figure 9. VIN = 5V Load Regulation

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.

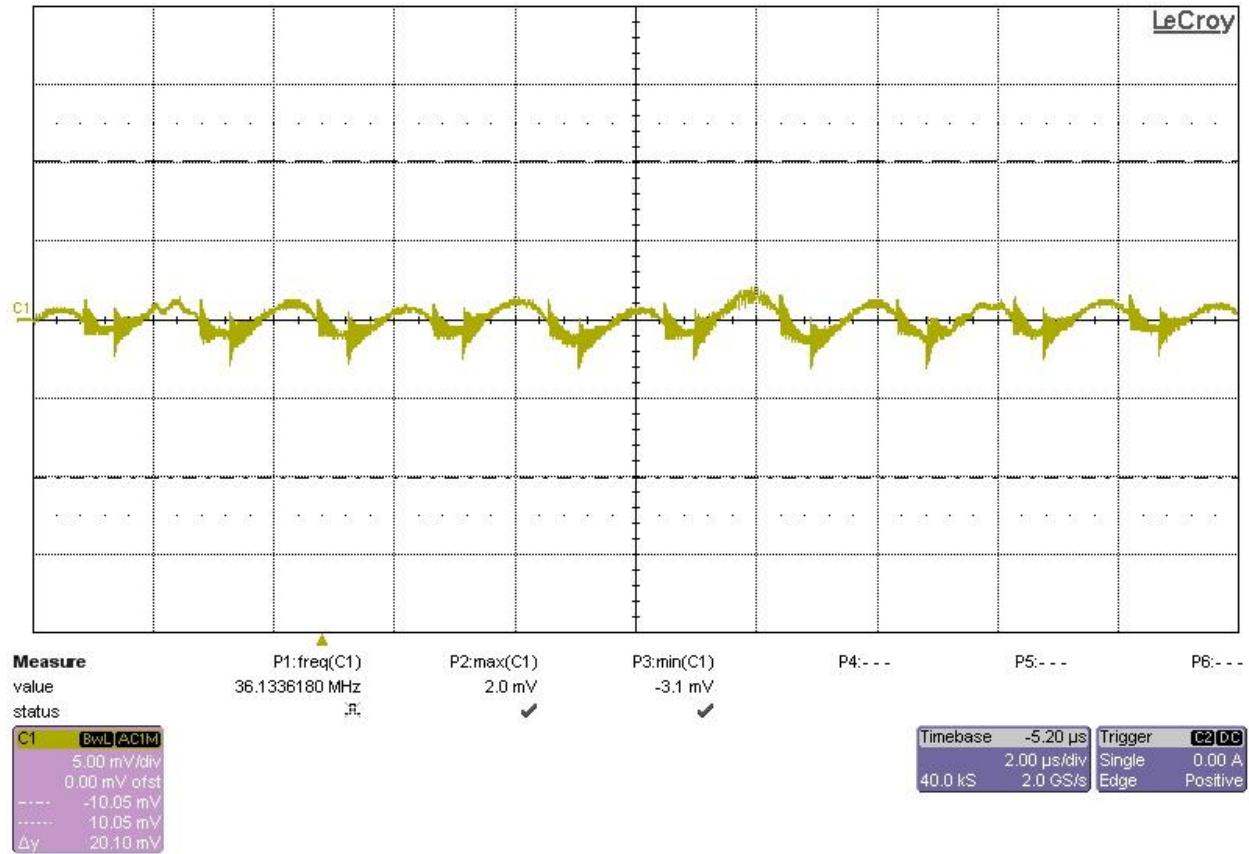


Figure 11. VIN = 5V, VOUT = 1.0V, IOU = 24A Output Ripple Voltage

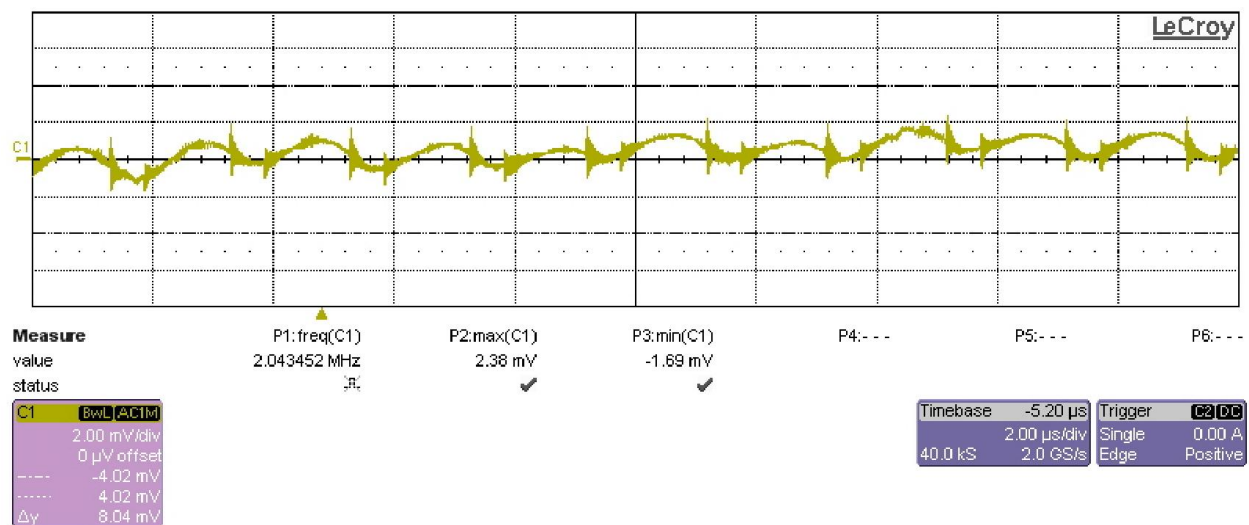


Figure 12. VIN = 5V, VOUT = 1.2V, IOU = 10A Output Ripple Voltage

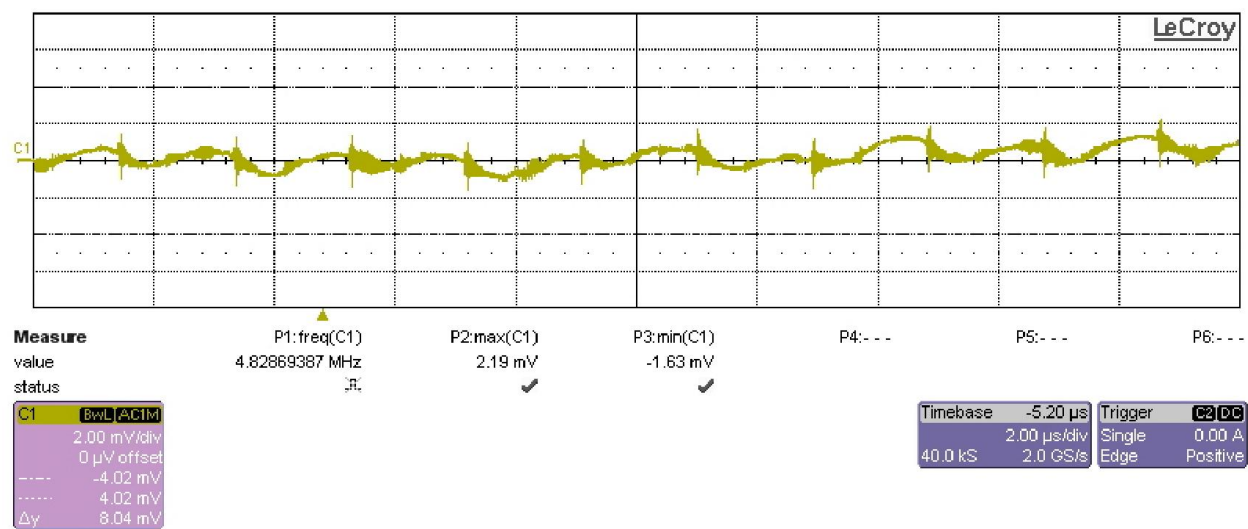


Figure 13. VIN = 5V, VOUT = 1.8V, IOUT = 4A Output Ripple Voltage

7) Load Transients

The transient response of the converters is shown below. The input voltage is 5V. The output current is pulsed from 50% load to full load.

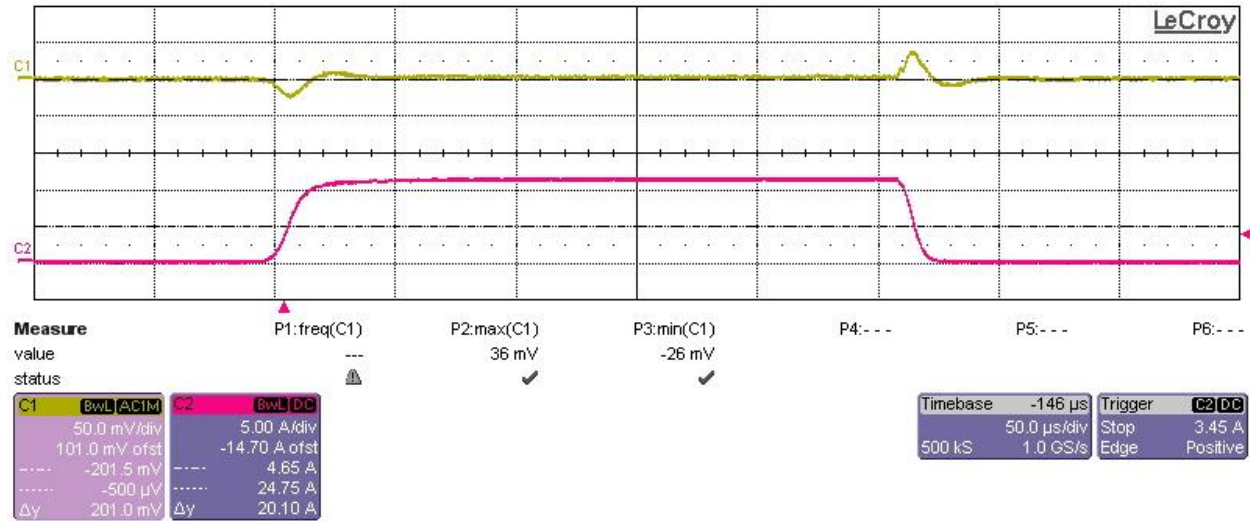


Figure 14. VIN = 5V, VOUT = 1.0V, 0A to 12A Load Transient

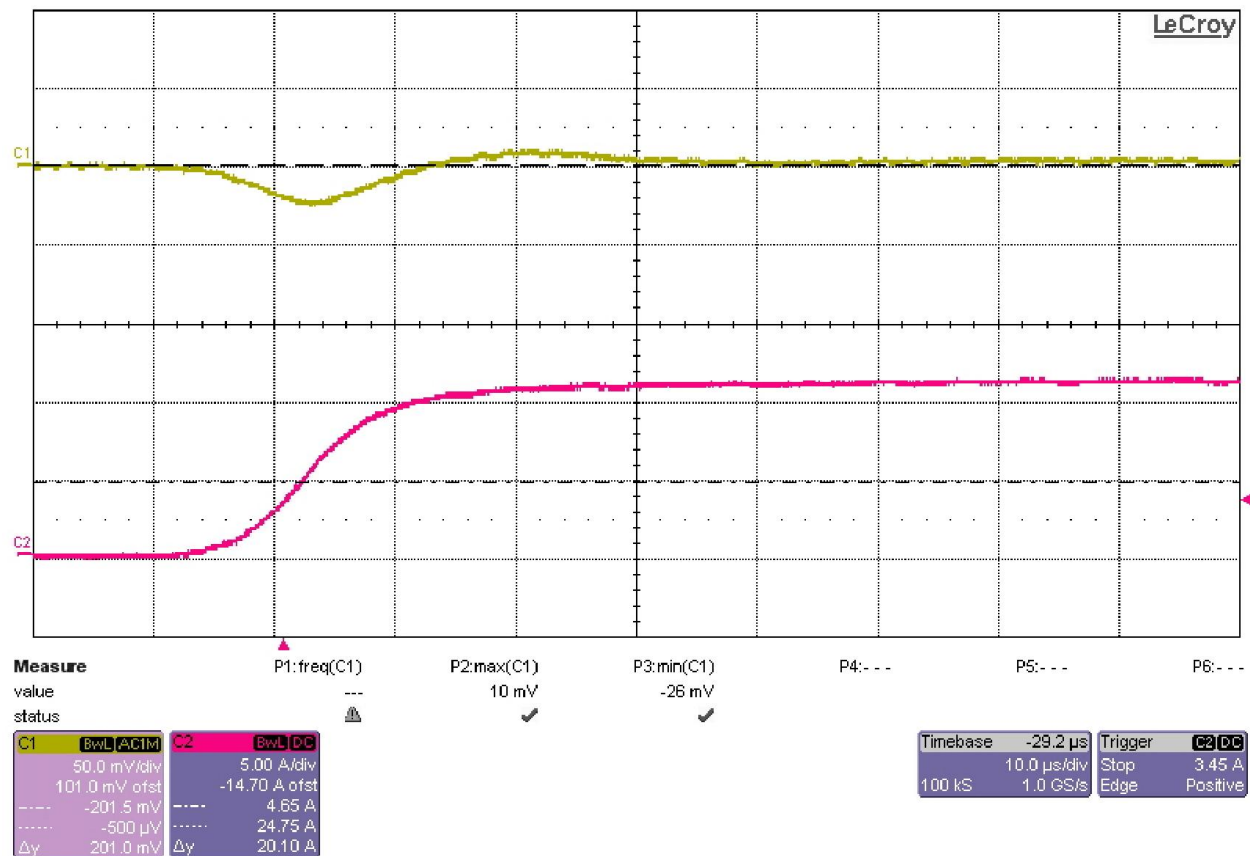


Figure 15. VIN = 5V, VOUT = 1.0V, 0A to 12A Load Transient

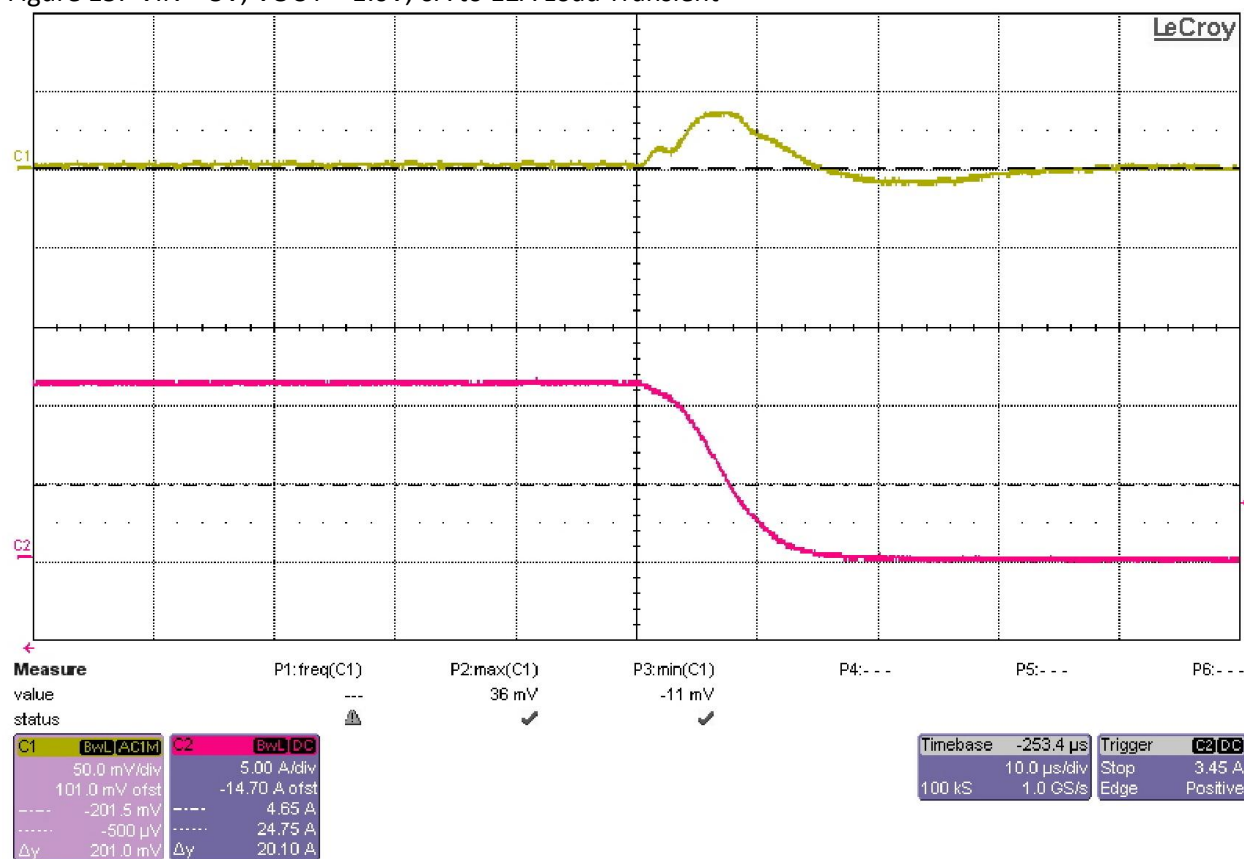


Figure 16. VIN = 5V, VOUT = 1.0V, 0A to 12A Load Transient

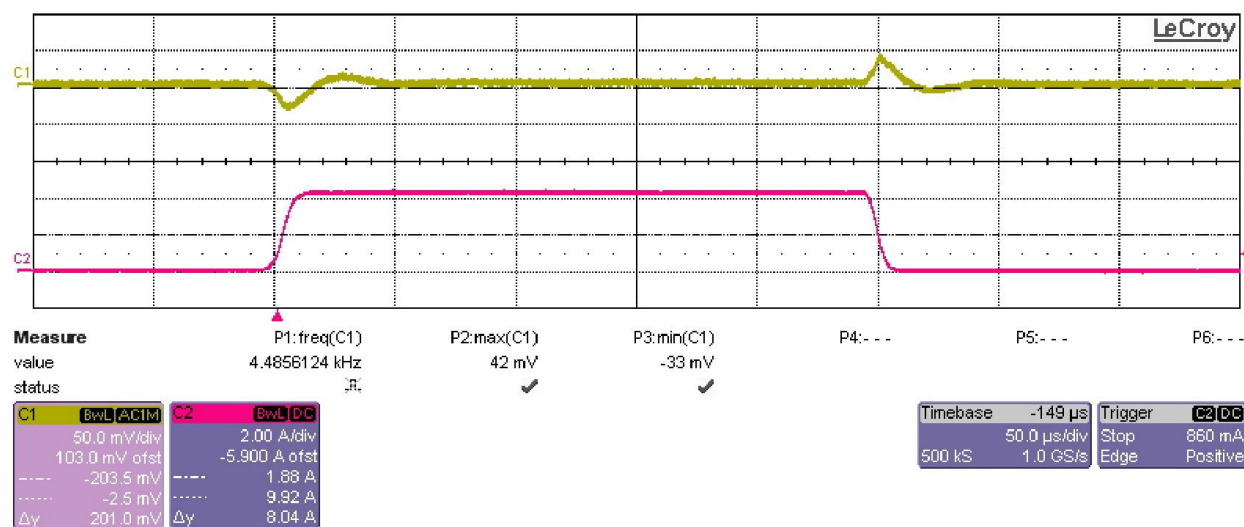


Figure 17. VIN = 5V, VOUT = 1.2V, 0A to 5A Load Transient

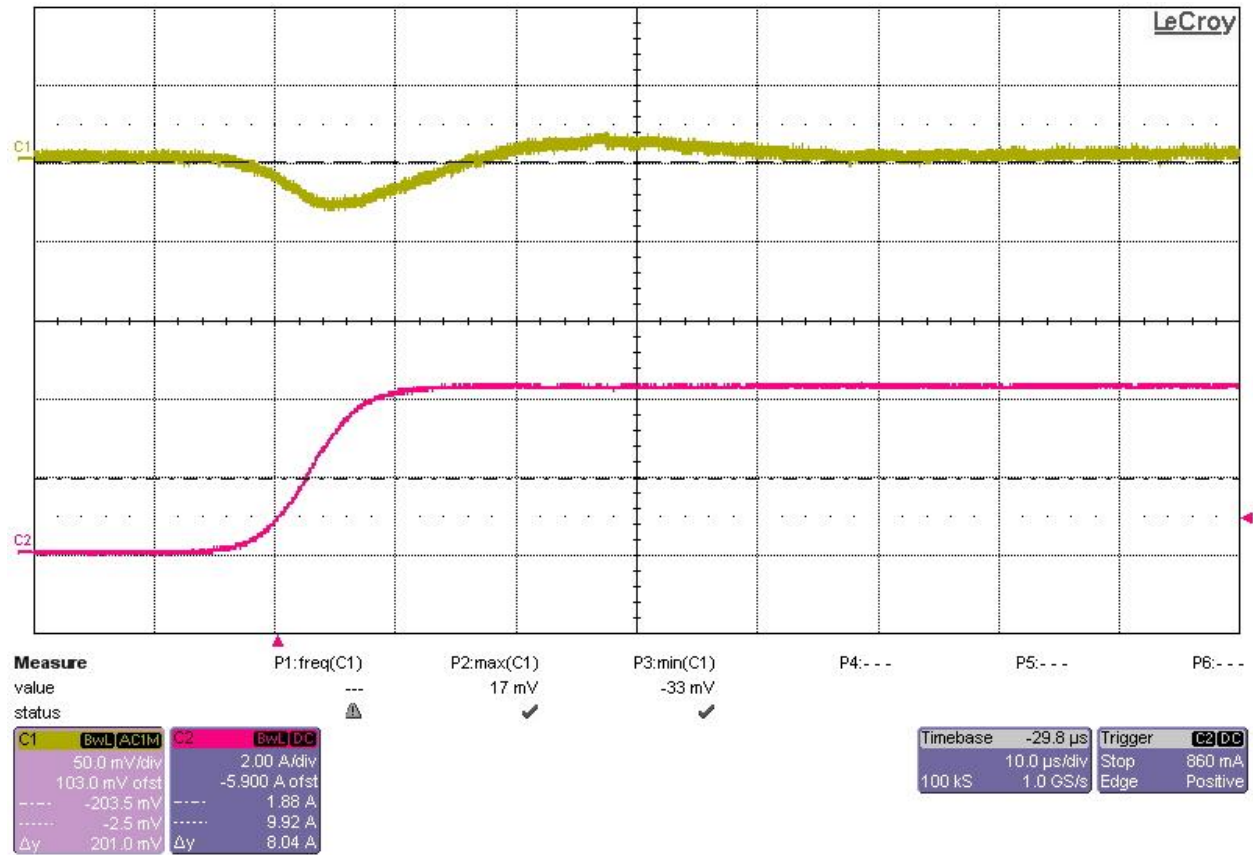


Figure 18. VIN = 5V, VOUT = 1.2V, 0A to 5A Load Transient

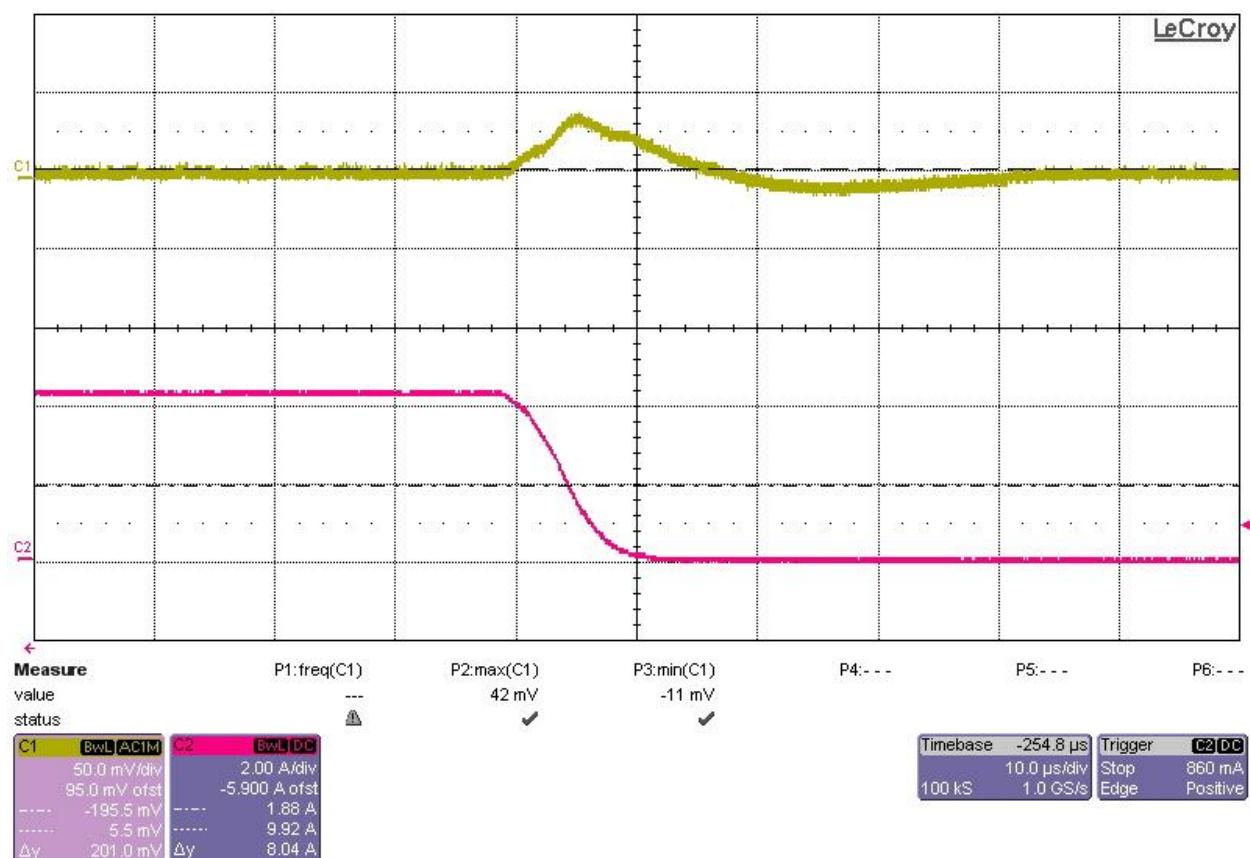


Figure 19. VIN = 5V, VOUT = 1.2V, 0A to 5A Load Transient

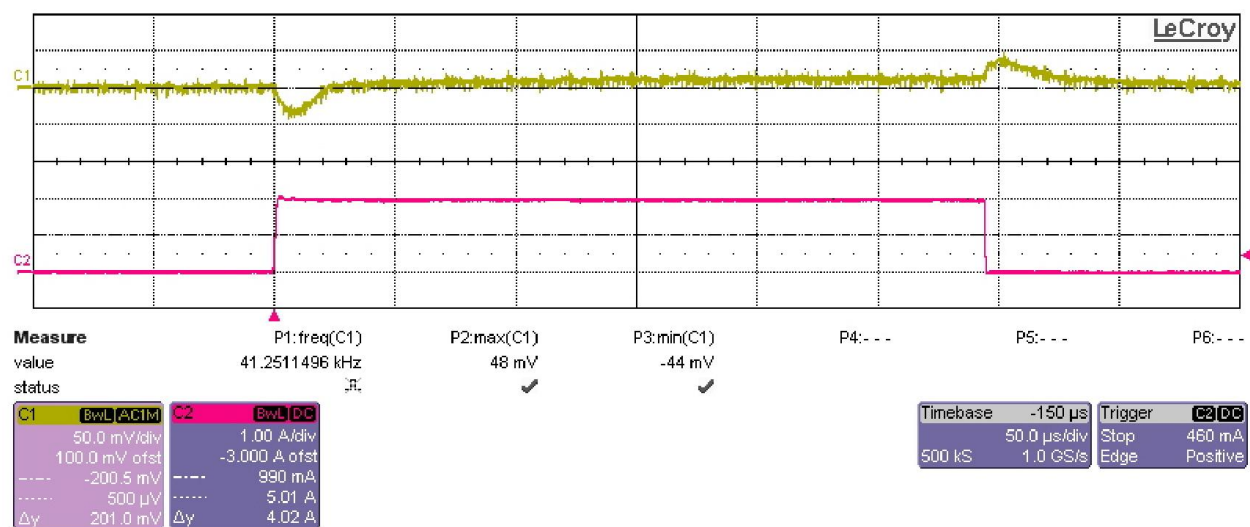


Figure 20. VIN = 5V, VOUT = 1.8V, 0A to 2A Load Transient

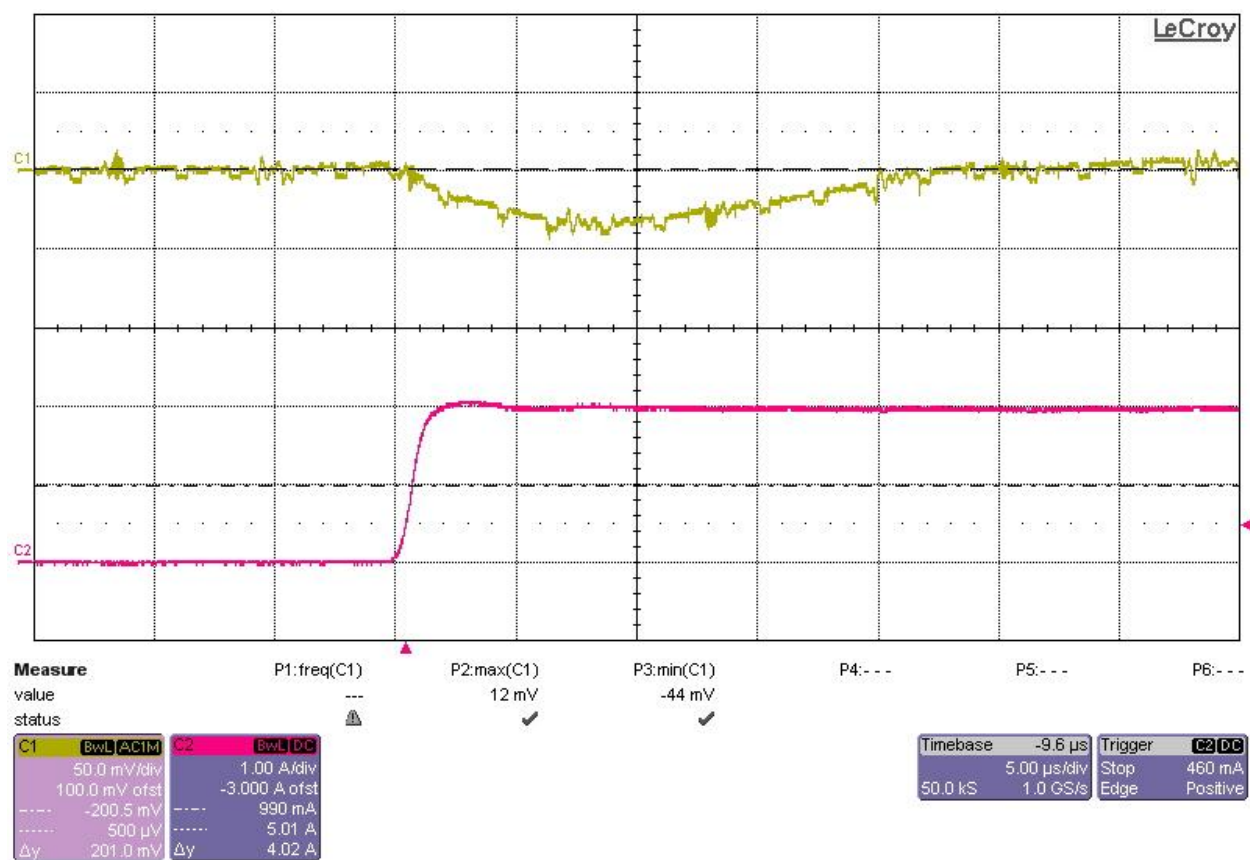


Figure 21. VIN = 5V, VOUT = 1.8V, 0A to 2A Load Transient

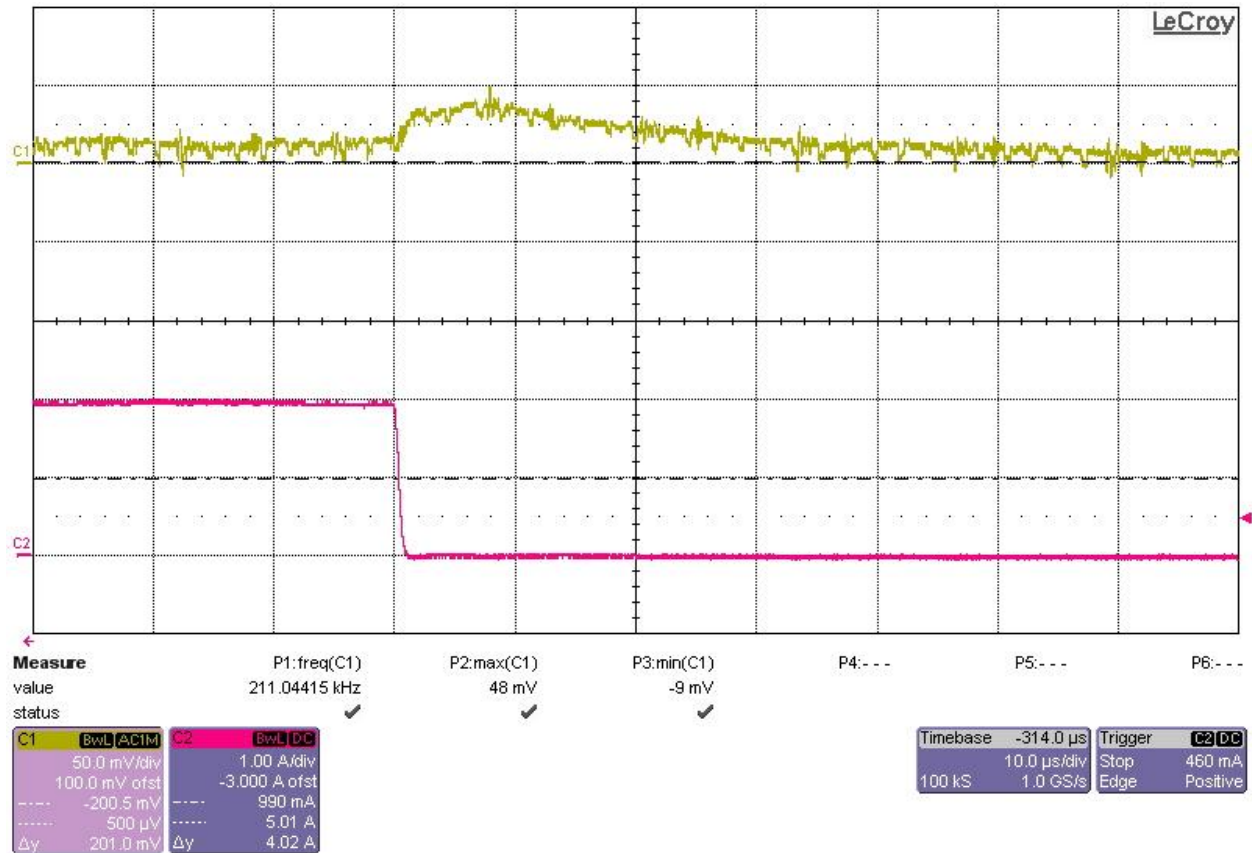


Figure 22. VIN = 5V, VOUT = 1.8V, 0A to 2A Load Transient

8) Bode Plots

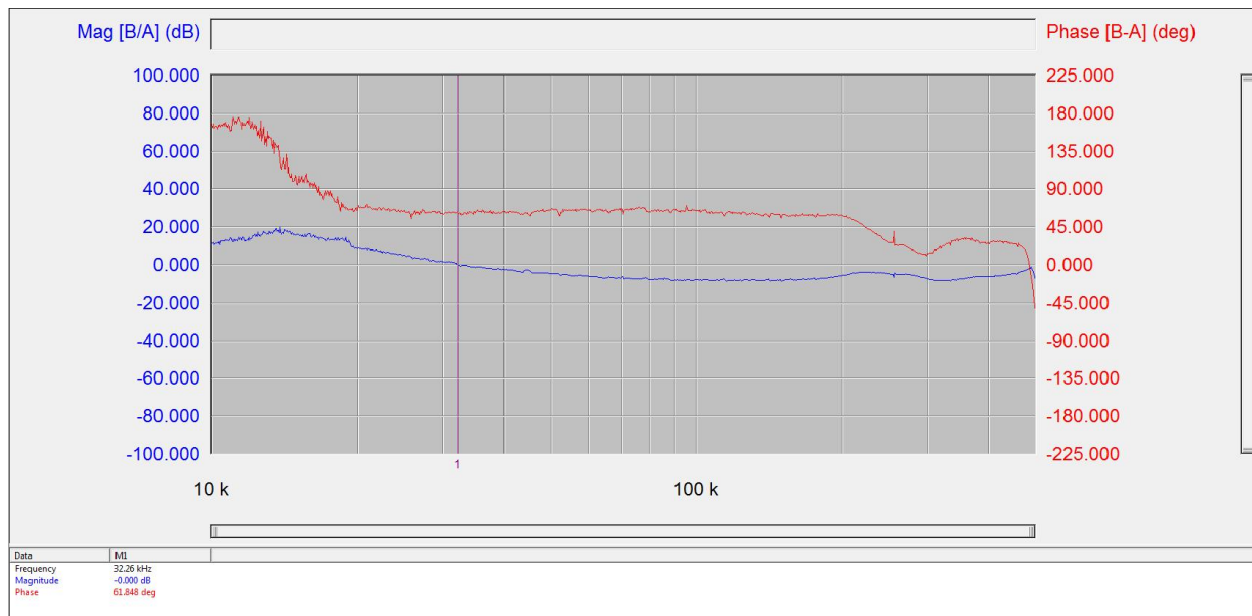


Figure 23. MGTAVCC Bode Plot

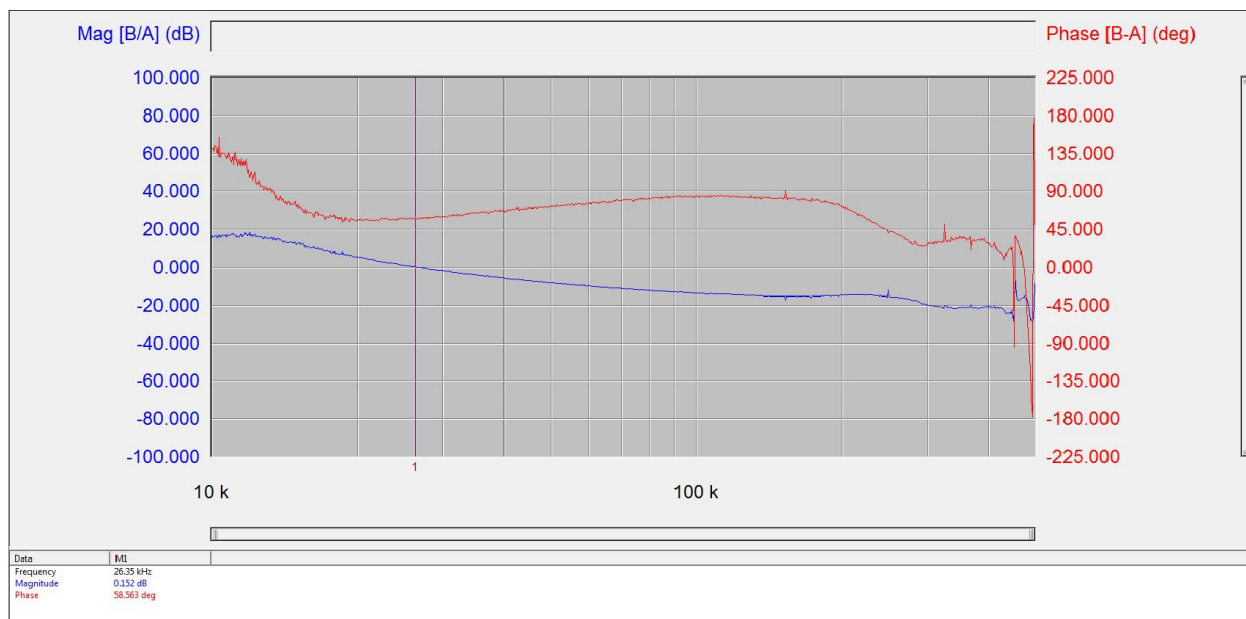


Figure 24. MGTAVTT Bode Plot

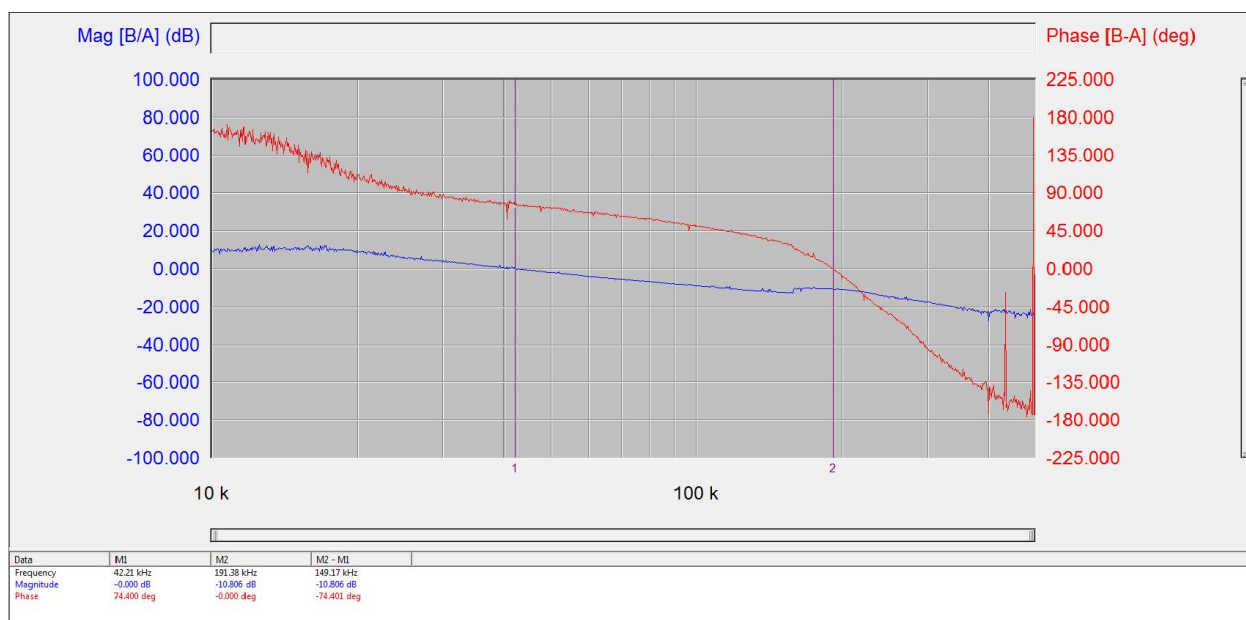


Figure 25. MGTVCCAUX Bode Plot

9) Thermal Images

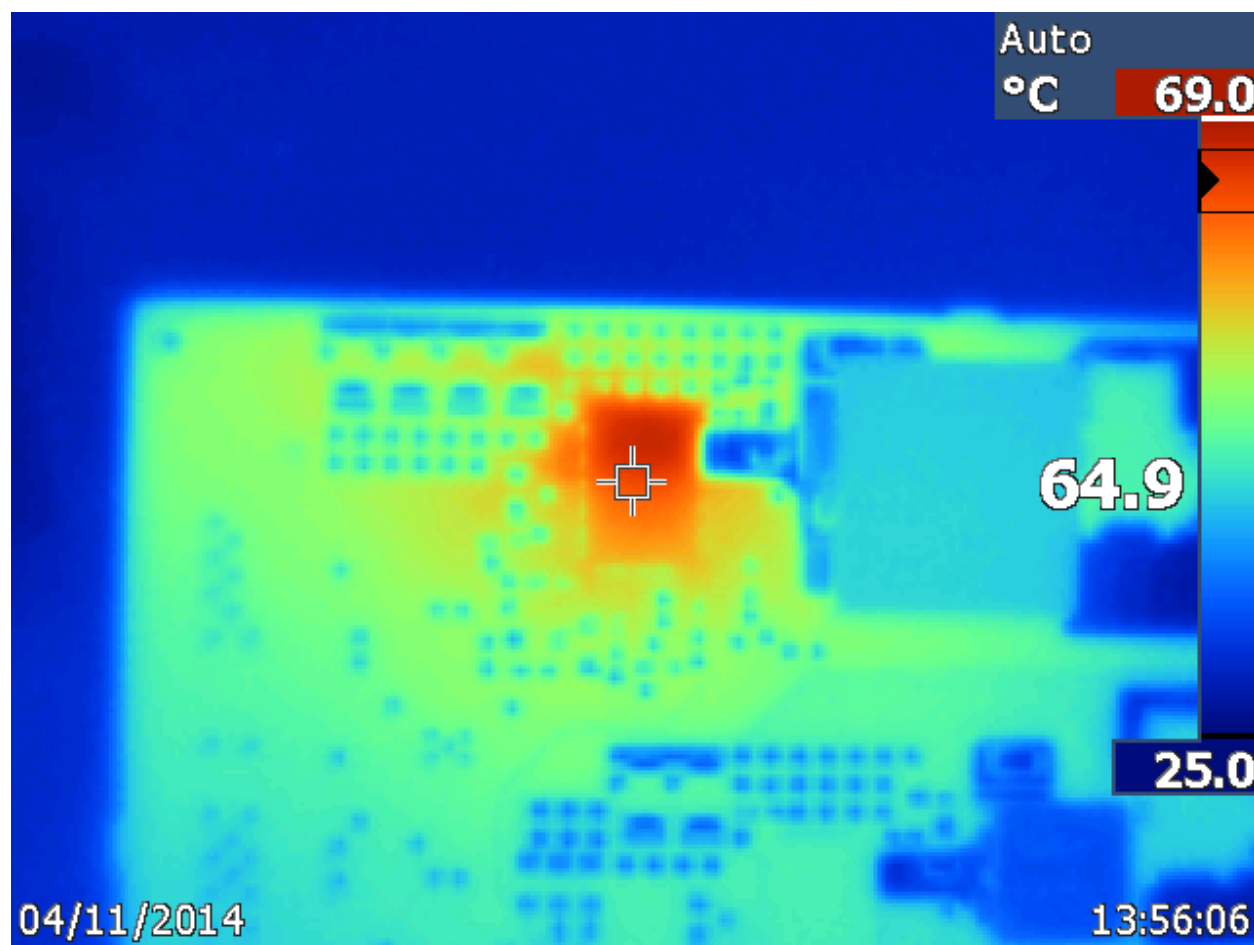


Figure 26. VIN = 5V, VOUT = 1.0V, IOU = 24A Thermal Image

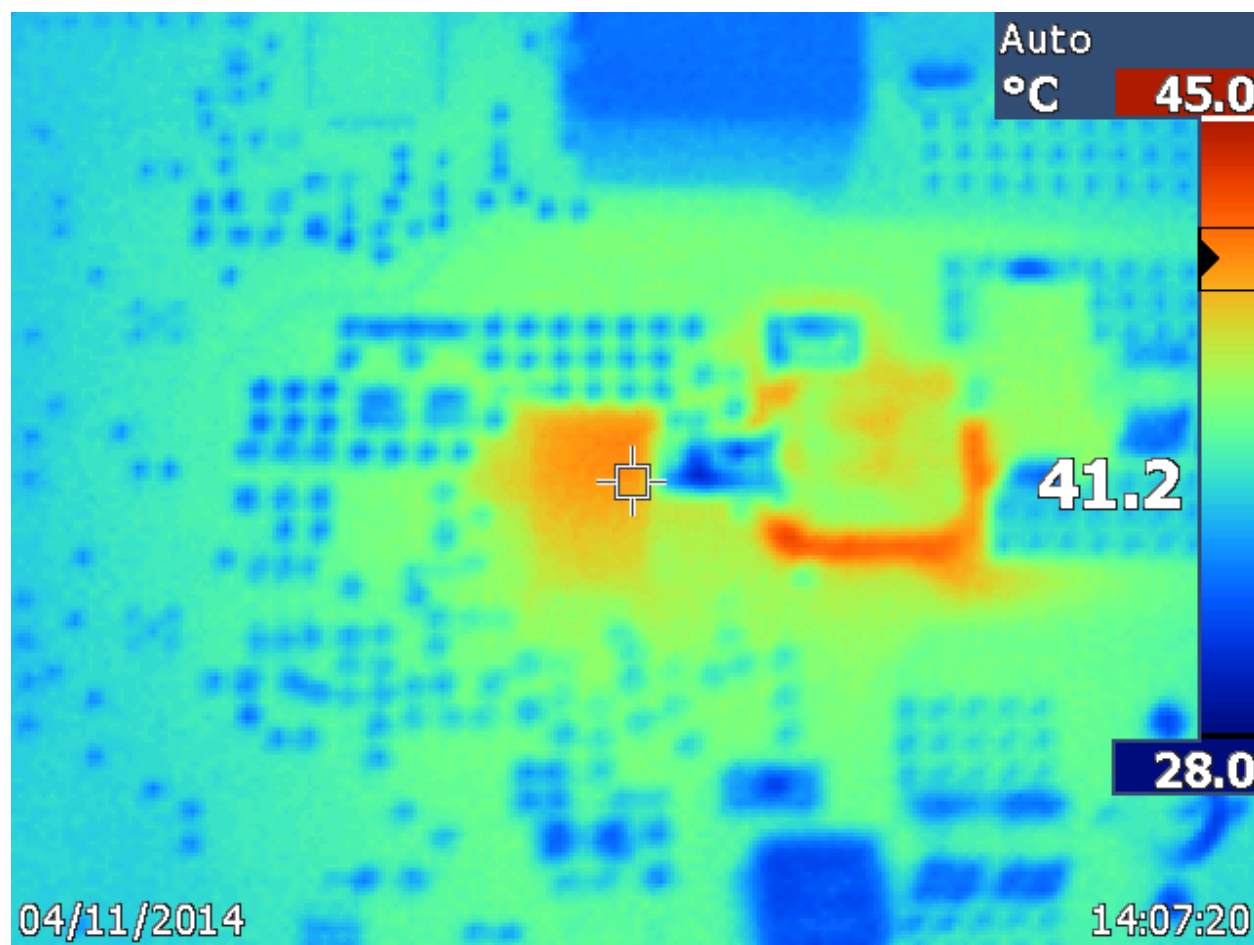


Figure 27. VIN = 5V, VOUT = 1.2V, IOU = 10A Thermal Image

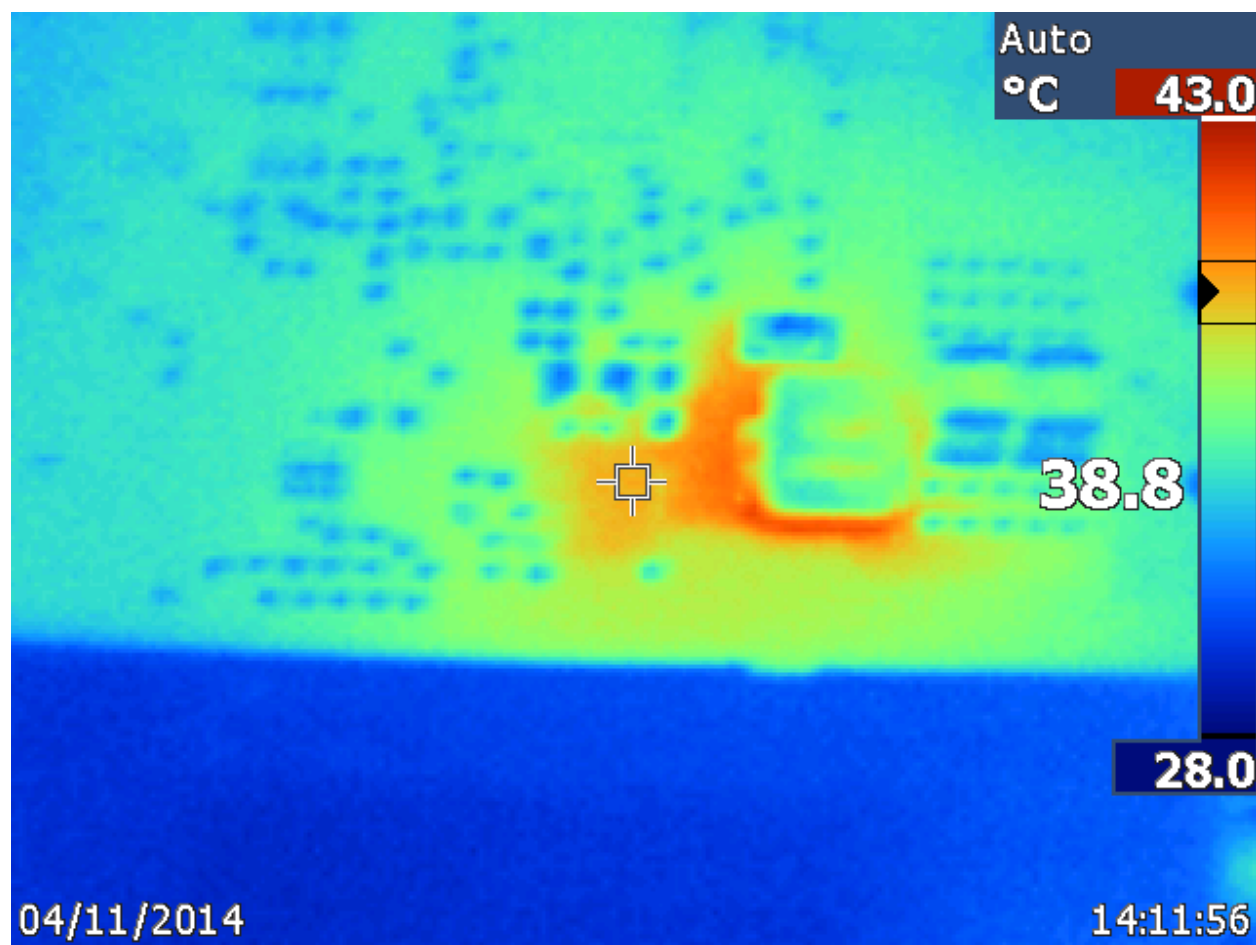


Figure 28. VIN = 5V, VOUT = 1.8V, IOOUT = 4A Thermal Image

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