PMP10613 Test Report

Contents

Figures

1) Block Diagram

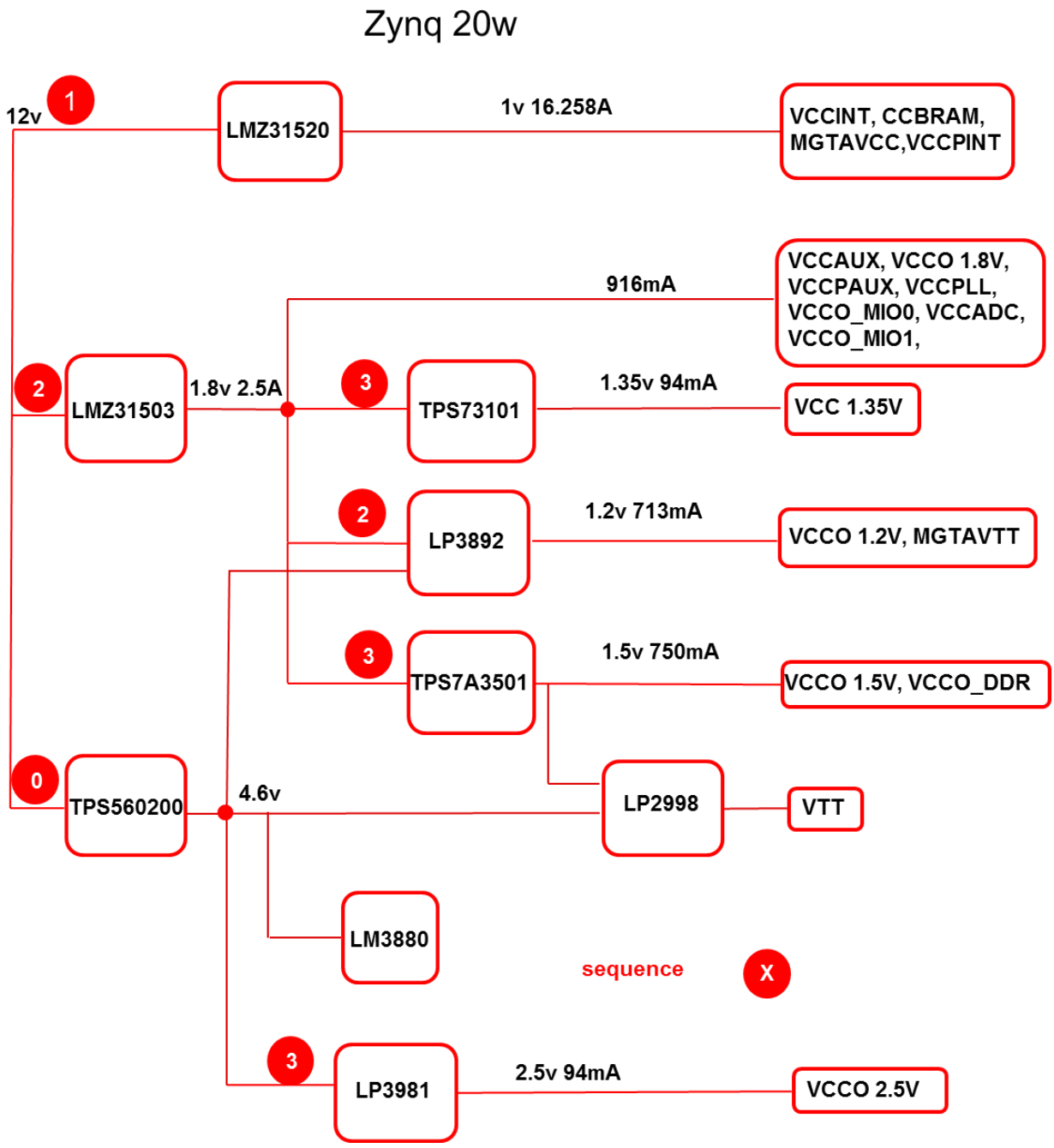

Figure 1. Block Diagram

2) Board Photos

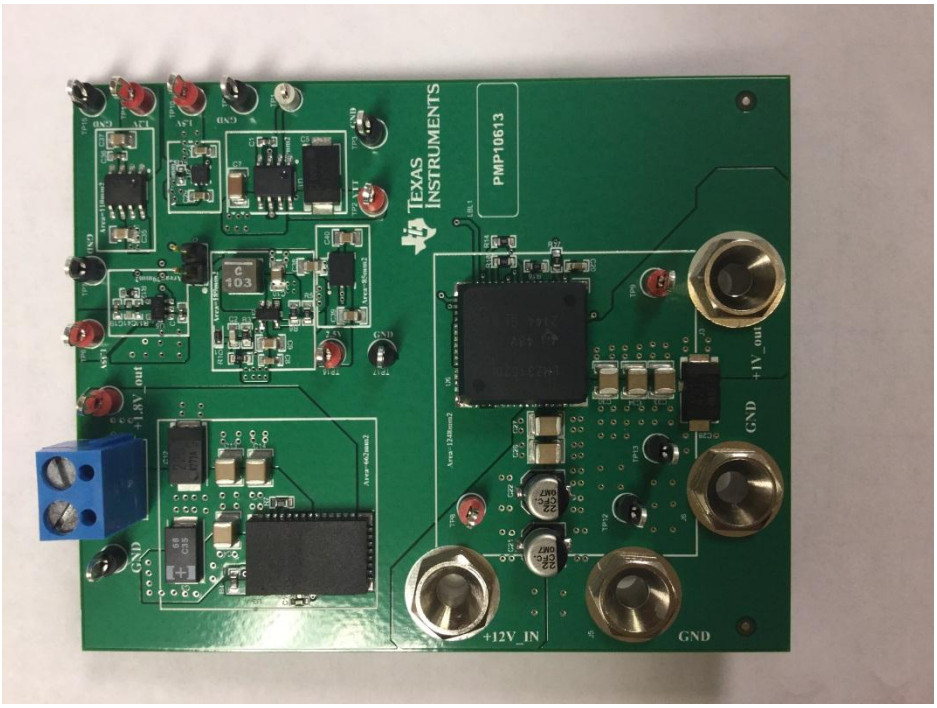

Figure 2. Board Photo Top

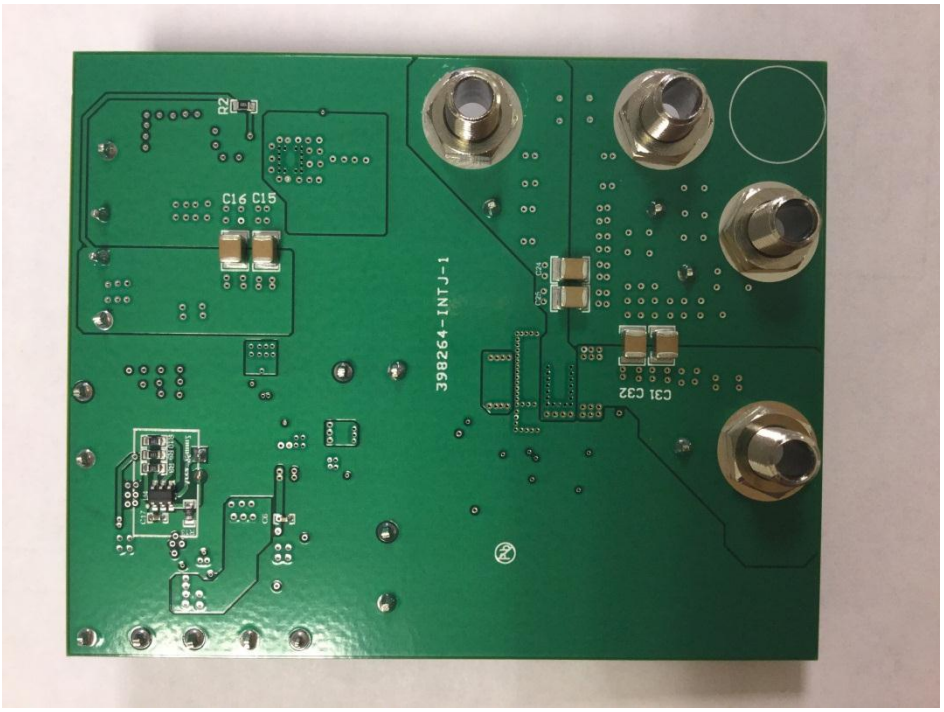

Figure 3. Board Photo Bottom

3) Startup Waveforms

one LM3880 is used for power sequencing as shown in figures 4, 5,

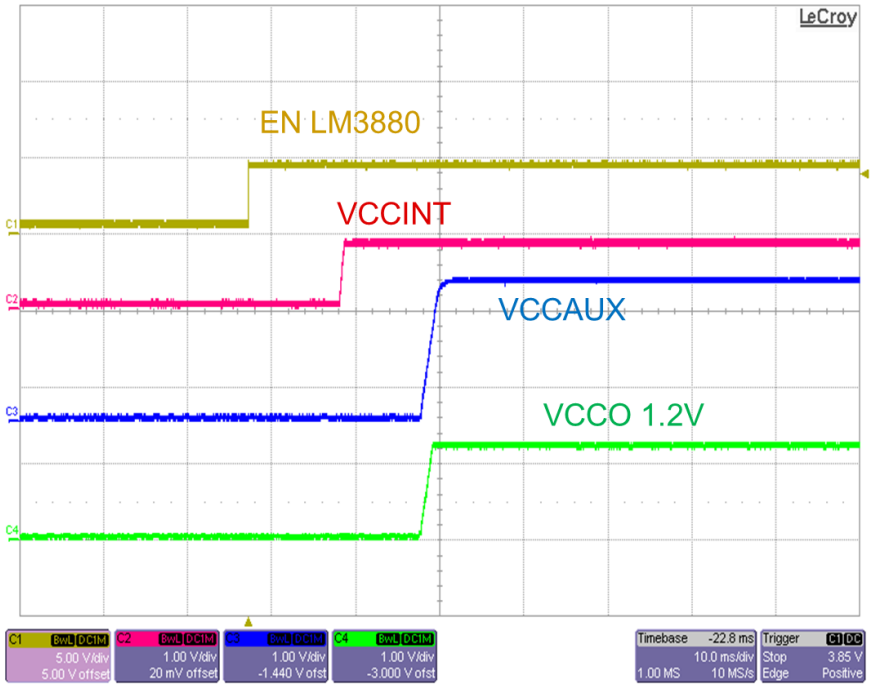

Figure 4. Startup Waveform

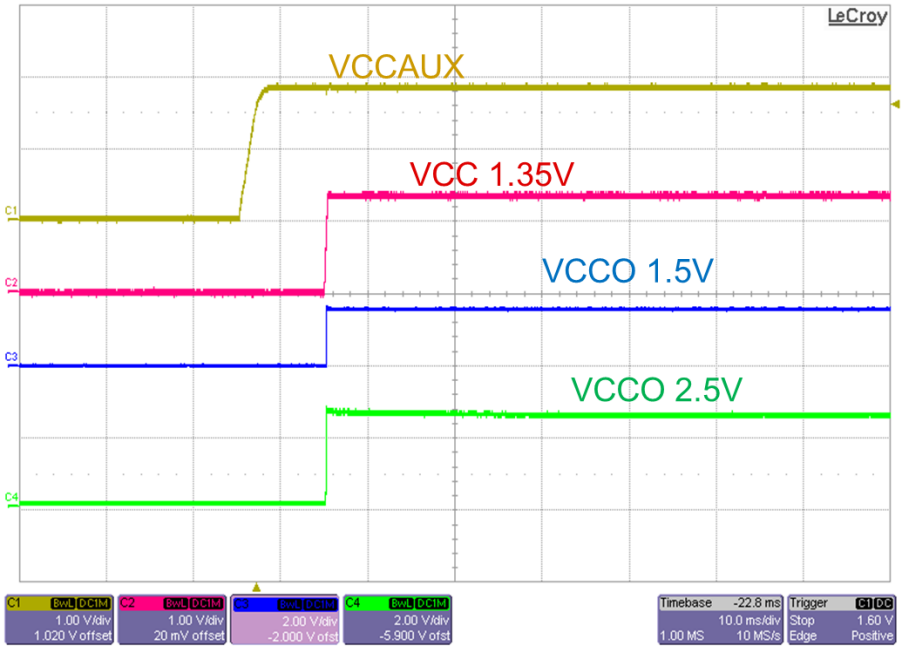

Figure 5. Startup Waveform

4) Efficiency

The efficiency of the converters is shown in the figures below. The input voltage is set to 12V.

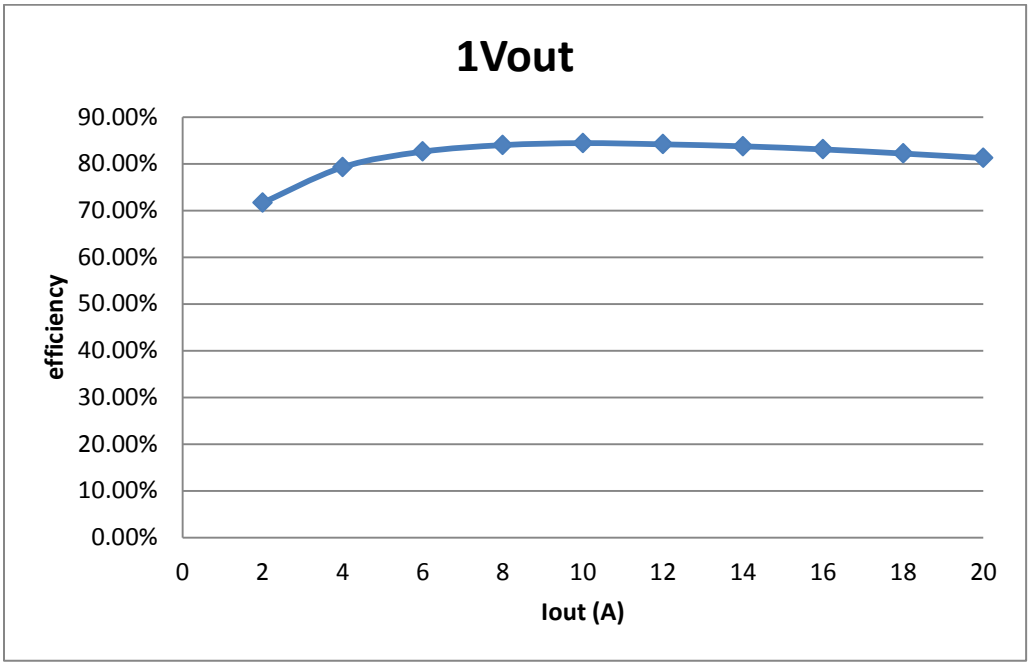

Figure 6. VIN = 12V, VCCINT Efficiency

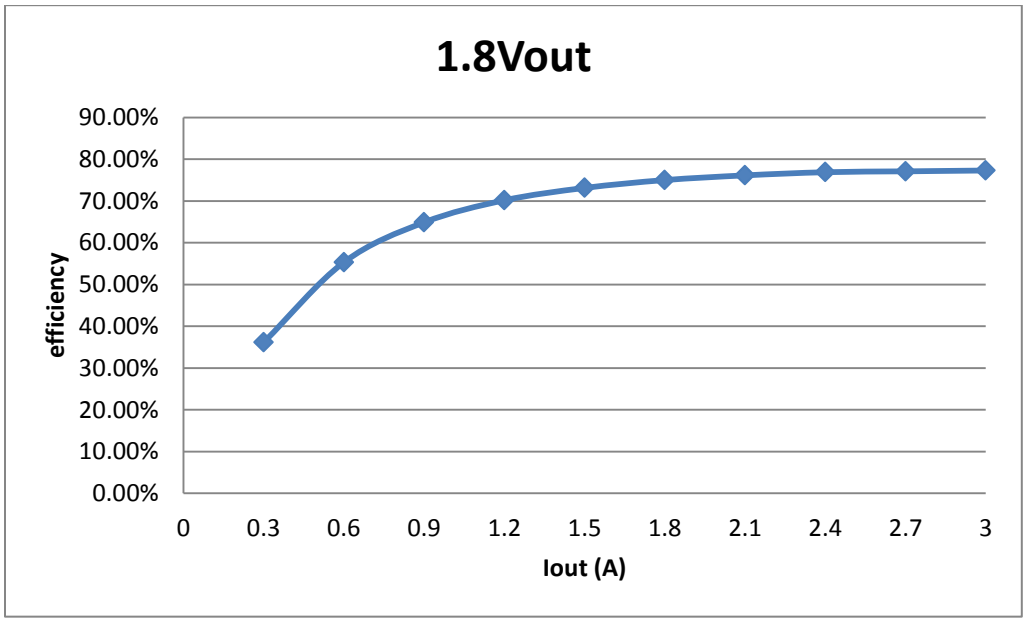

Figure 7. VIN = 12V, VCCAUX Efficiency

Note: The reason why the VCCAUX efficiency is a little lower than the datasheet is the iq of the LMZ31520.

5) Load Regulation

The images below show the output load regulation. The input voltage is 12V.

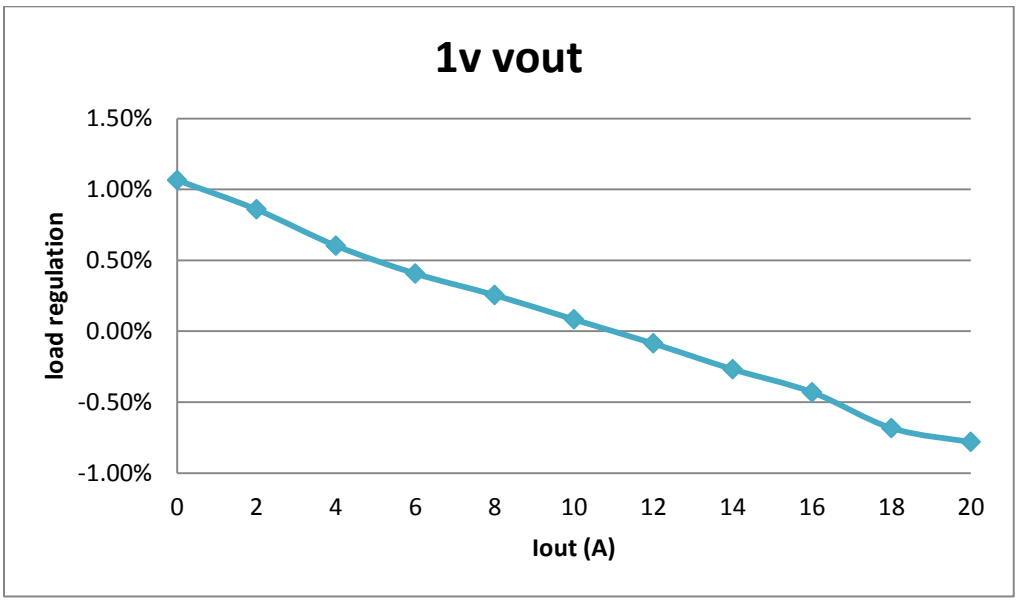

Figure 8. VIN = 12V, VCCINT Load Regulation

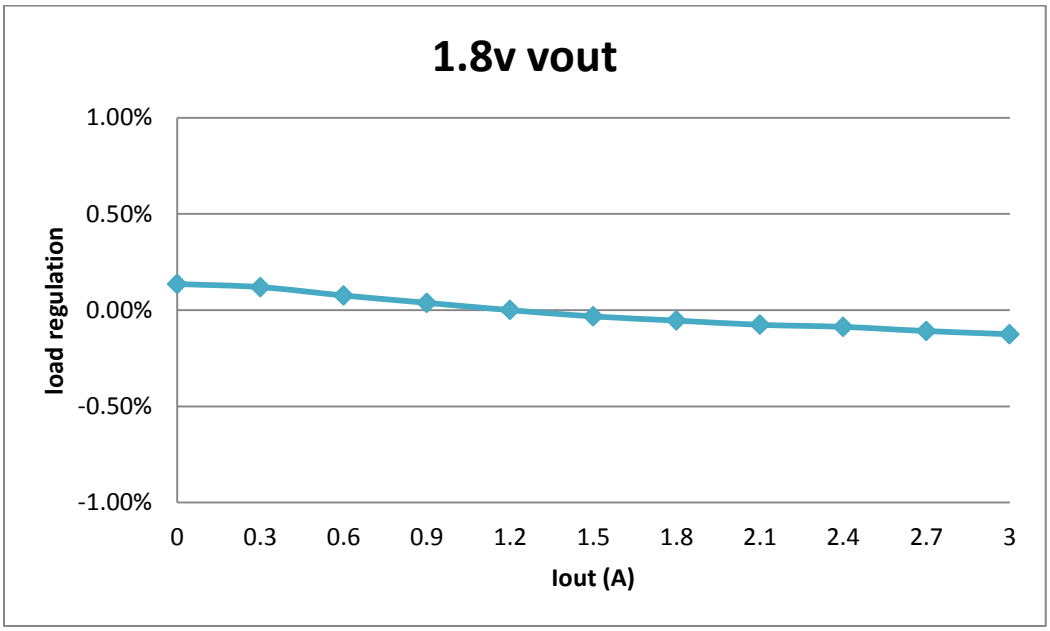

Figure 9. VIN = 12V, VCCAUX Load Regulation

6) Output Voltage Ripple

The images below shows the output voltage ripple when load is fully applied. The input voltage is 12V.

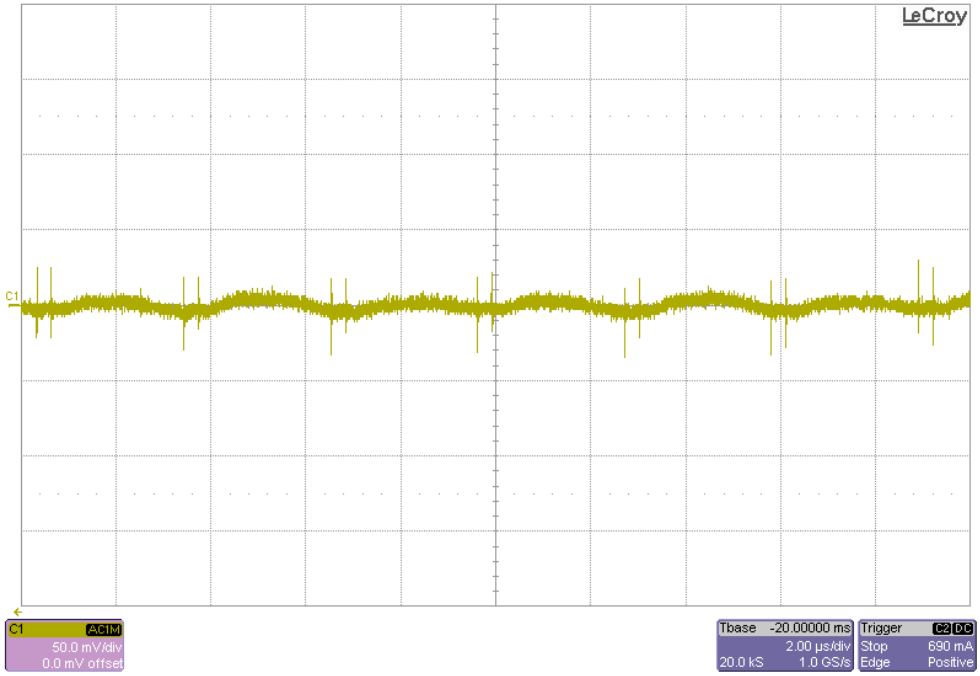

Figure 10. VIN = 12V, VCCINT Output Ripple @ IOUT = 20A

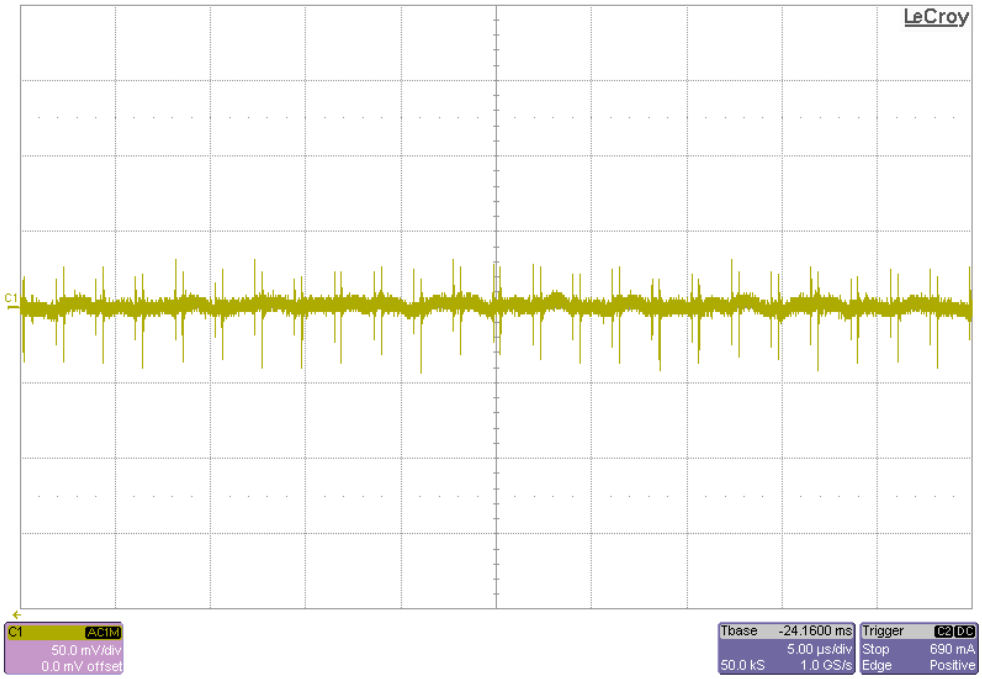

Figure 11. VIN = 12V, VCCAUX Output Ripple @ IOUT = 3A

7) Load Transients

The transient response of the converters is shown below. The input voltage is 12V. The output current is pulsed from 0 to 50% load.

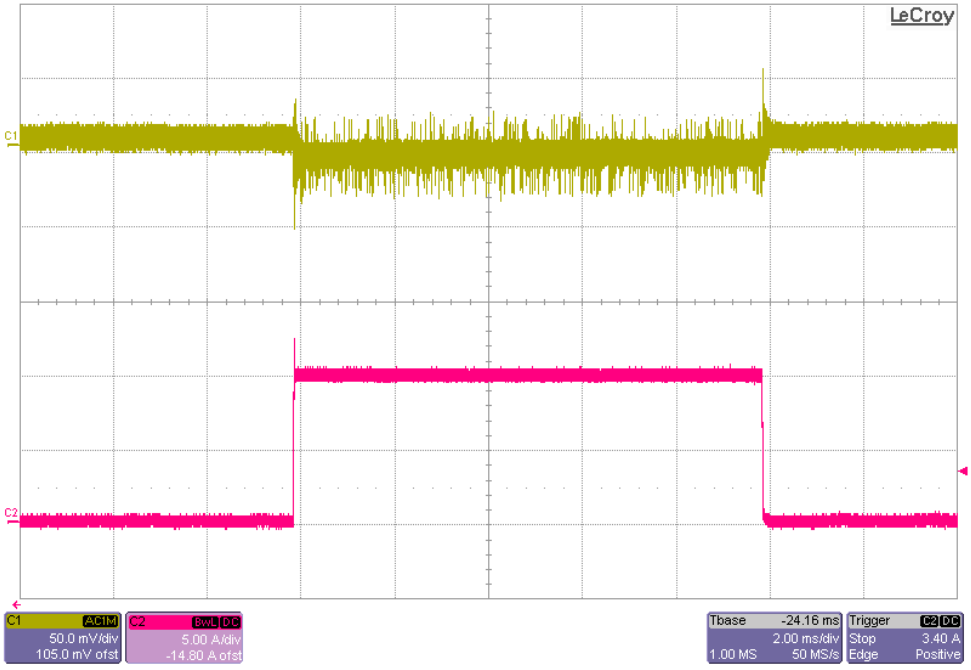

Figure 12. VIN = 12V, VCCINT Load Transient slew rate=1A/us

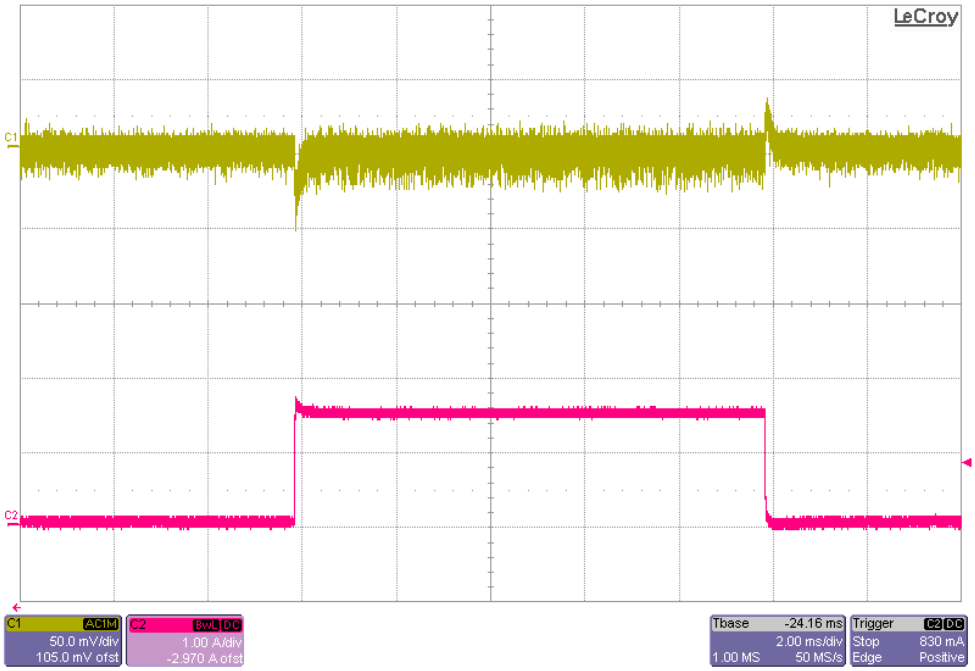

Figure 13. VIN = 12V, VCCAUX Load Transient slew rate=1A/us

8) Thermal Image

Thermal images at full load of each device are shown below, the remaining rails are not drawing any current during these tests. The input voltage is 12V.

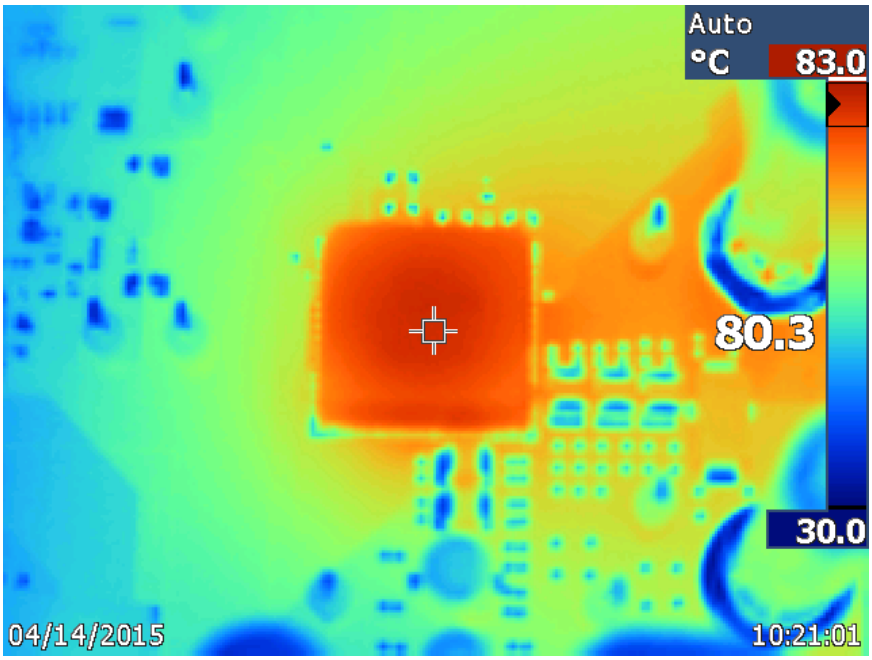

Figure 14. VIN = 12V, VCCINT Thermal Image @ 20A

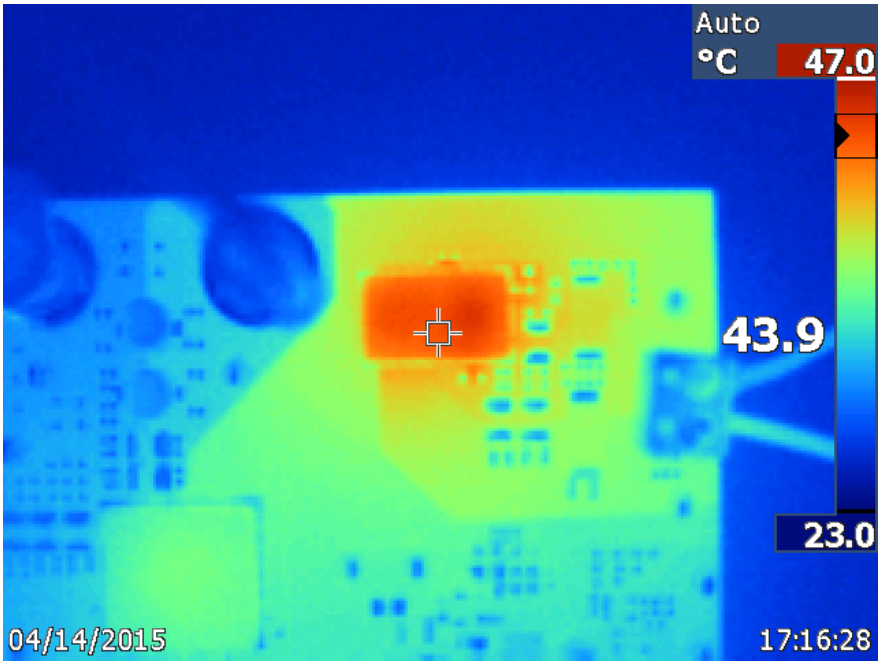

Figure 15. VIN = 12V, VCCAUX Thermal Image @ 3A

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