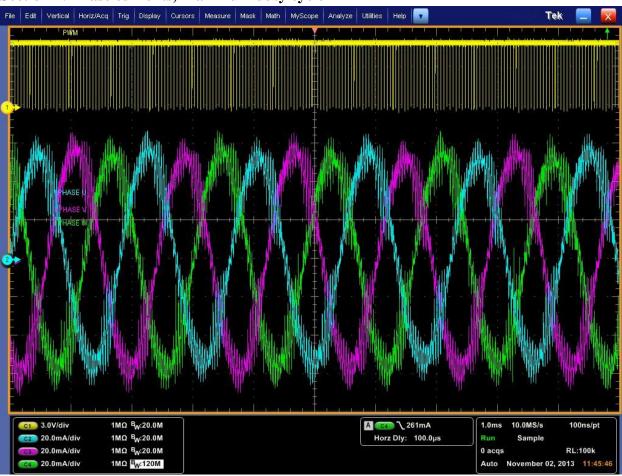


## 5V, 3-Phase, Sensorless, Sinusoidal Motor System With Variable Speed Control

Motor Waveform Data (Tests performed with common 5V motor, no load)

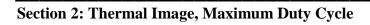
- 1. Phase currents, Maximum duty cycle
- 2. Thermal image, maximum duty cycle
- 3. Phase currents, 75% duty cycle
- 4. Thermal image, 75% duty cycle
- 5. Phase currents, 50% duty cycle
- 6. Thermal image, 50% duty cycle
- 7. Phase currents, 25% duty cycle
- 8. Thermal image, 25% duty cycle
- 9. Phase currents, 5% duty cycle
- 10. Thermal image, 5% duty cycle

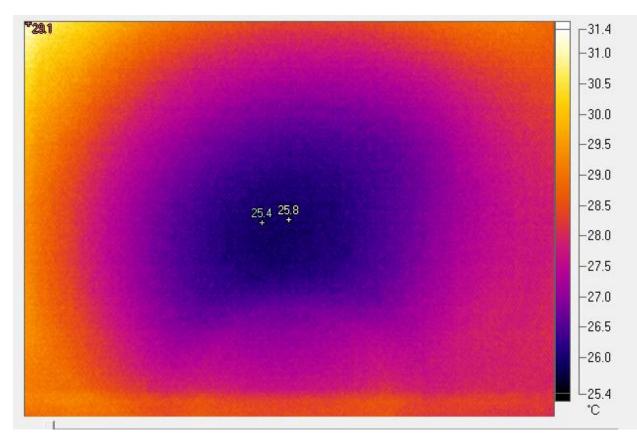




## Section 1: Phase currents, Maximum duty cycle

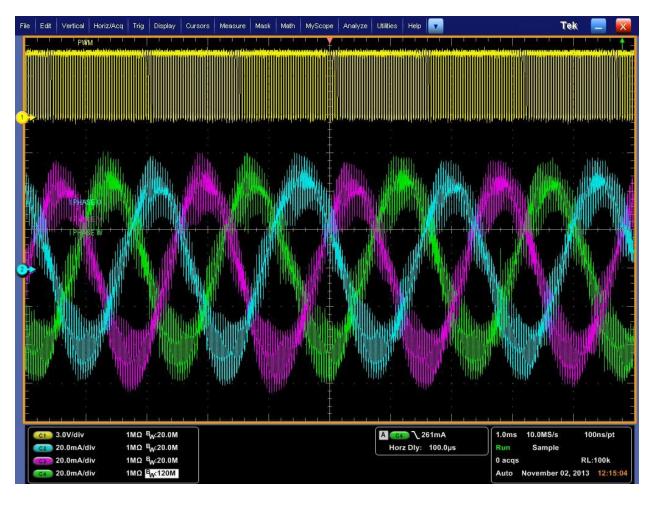






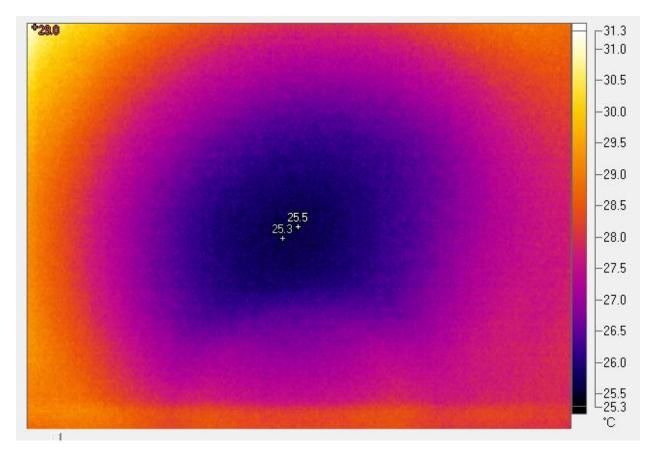


Section 3: Phase currents, 75% duty cycle



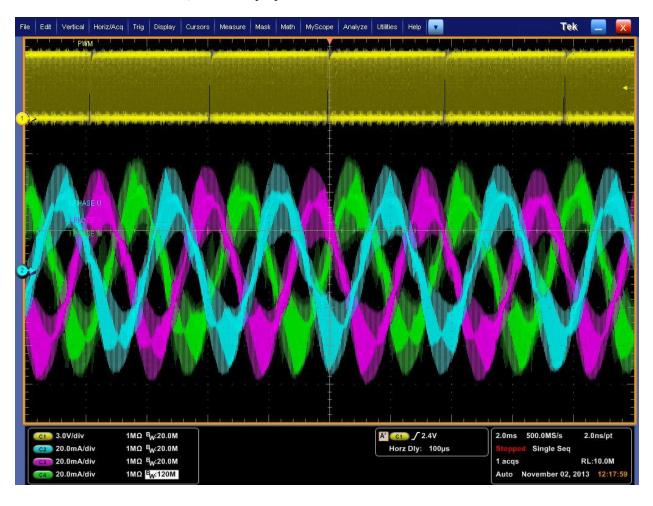


Section 4: Thermal Image, 75% Duty Cycle



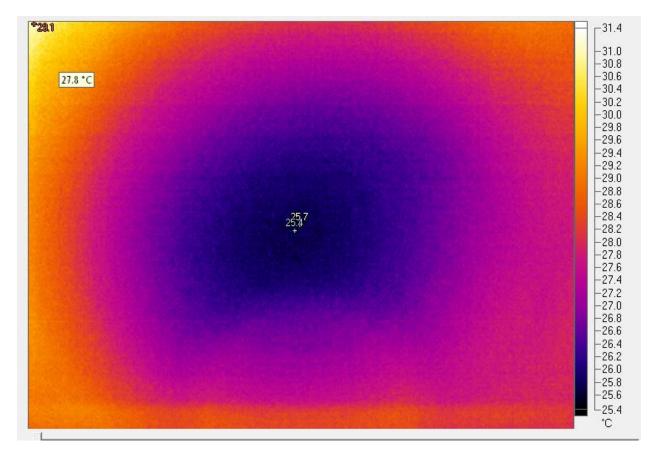


Section 5: Phase currents, 50% duty cycle



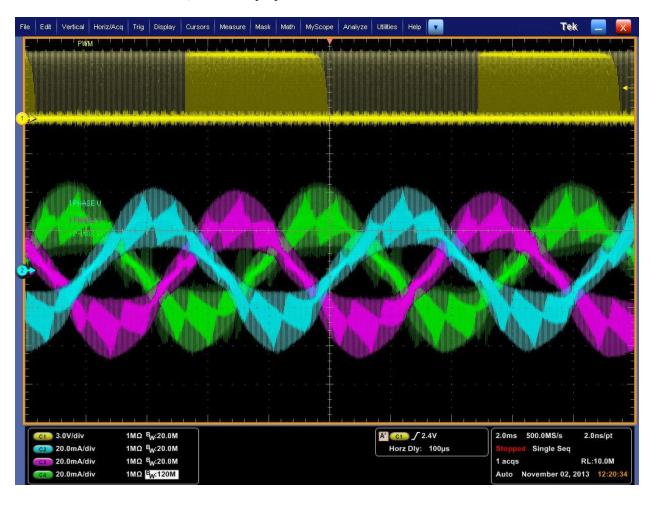


Section 6: Thermal Image, 50% Duty Cycle



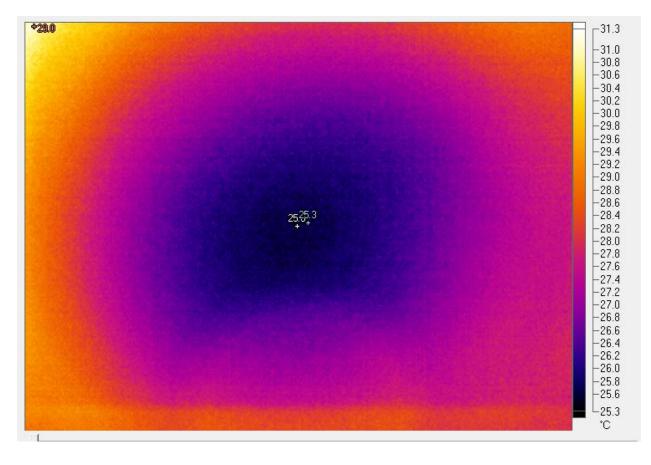


Section 7: Phase currents, 25% duty cycle





Section 8: Thermal Image, 25% Duty Cycle



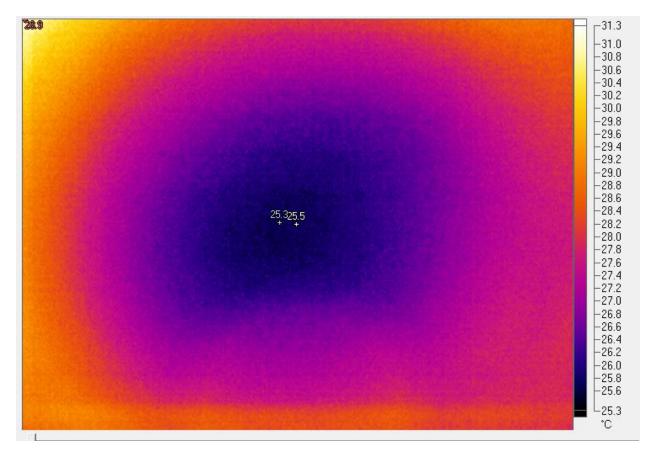


File Edit Vertical Horiz/Acq Trig Display Cursors Measure Mask Math MyScope Analyze Utilities Help 🔽 Tek PWM • Y 8 PHASE U PHASE V 3.0V/div 1MΩ <sup>B</sup>W:20.0M A' C10 / 1.92V 10.0ms 100.0MS/s 10.0ns/pt 23.31ms 1MΩ <sup>B</sup>W:20.0M 20.0mA/div -1.15ms Horz Dly: 100µs d Single Seq 1MΩ <sup>B</sup><sub>W</sub>:20.0M 1 acqs RL:10.0M 20.0mA/div -24.46ms 20.0mA/div 1MO BW:120M Auto November 02, 2013 12:24:16 40.88Hz **Cursor Controls** X Cursor Type Move Cursors to Center Source Cursor 1 Cursor 2 **H**Bars **V** Bars Waveform Screen Setup Ch 4 • Ch 4 T 1 n

Section 9: Phase currents, 5% duty cycle



Section 10: Thermal Image, 5% Duty Cycle



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