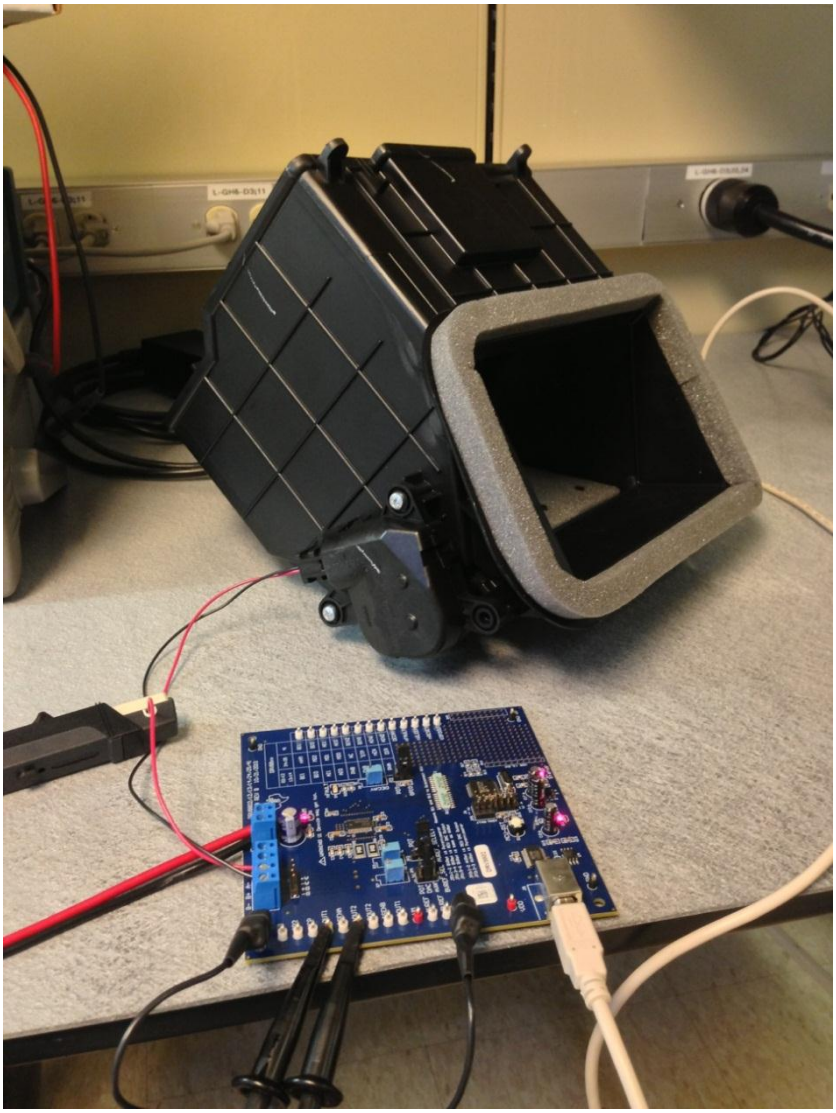
TIDA-00144 Test Report

The DRV8802EVM was utilized for this test report, which includes the following:

A. Brushed DC Motor Parameters
B. Configuration
C. Forward Startup Waveforms
D. Reverse Startup Waveforms
E. Forward Running Waveforms
F. Reverse Running Waveforms
G. Forward Stall Waveforms
H. Reverse Stall Waveforms
I. Thermal Image



A. Brushed DC Motor Parameters

The following measurements were taken at steady state using the brushed DC motor installed in the HVAC damper motor assembly.

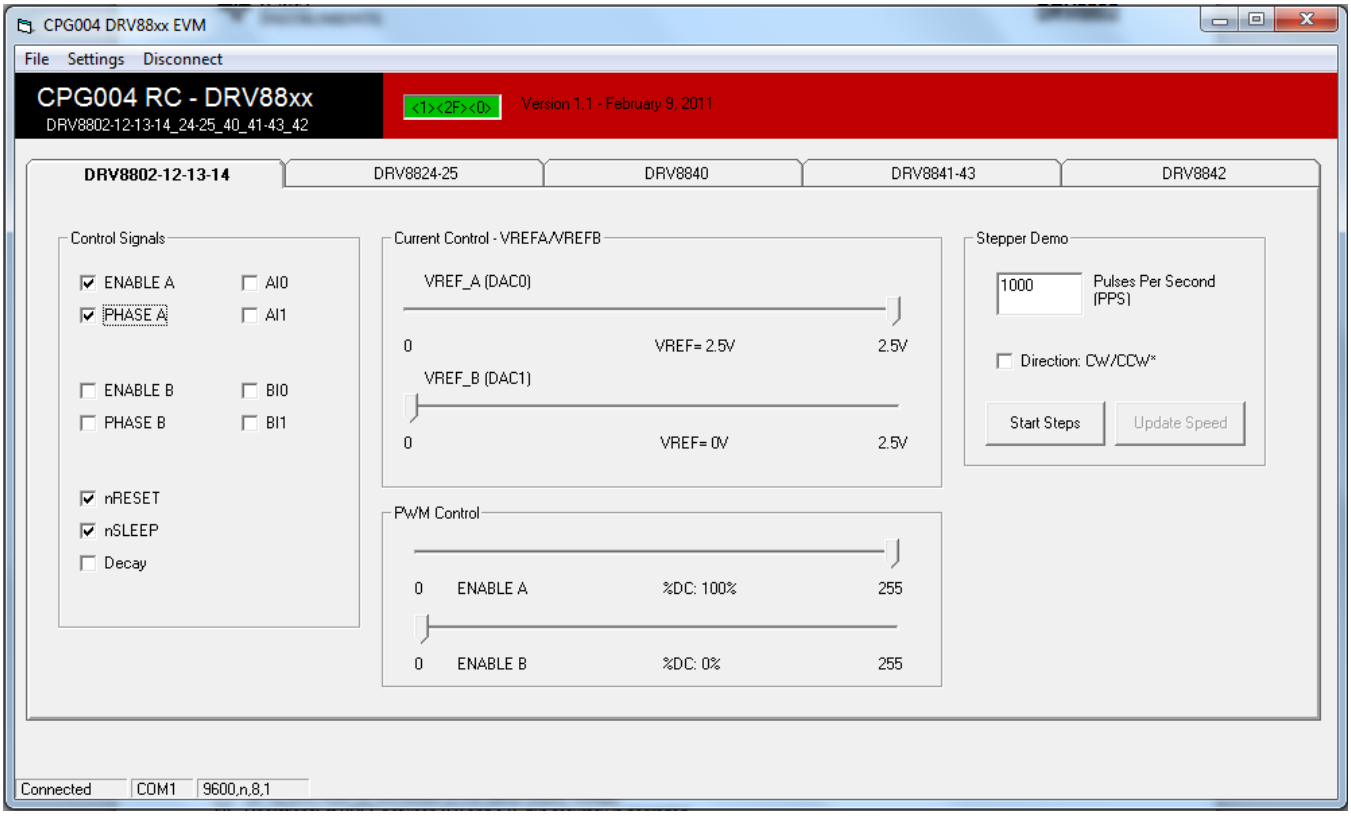
Motor Terminals	Resistance	Inductance (@1KHz)
A+ (Red Wire) to A- (Black Wire)	56.3Ω	77.64mH

B. Configuration

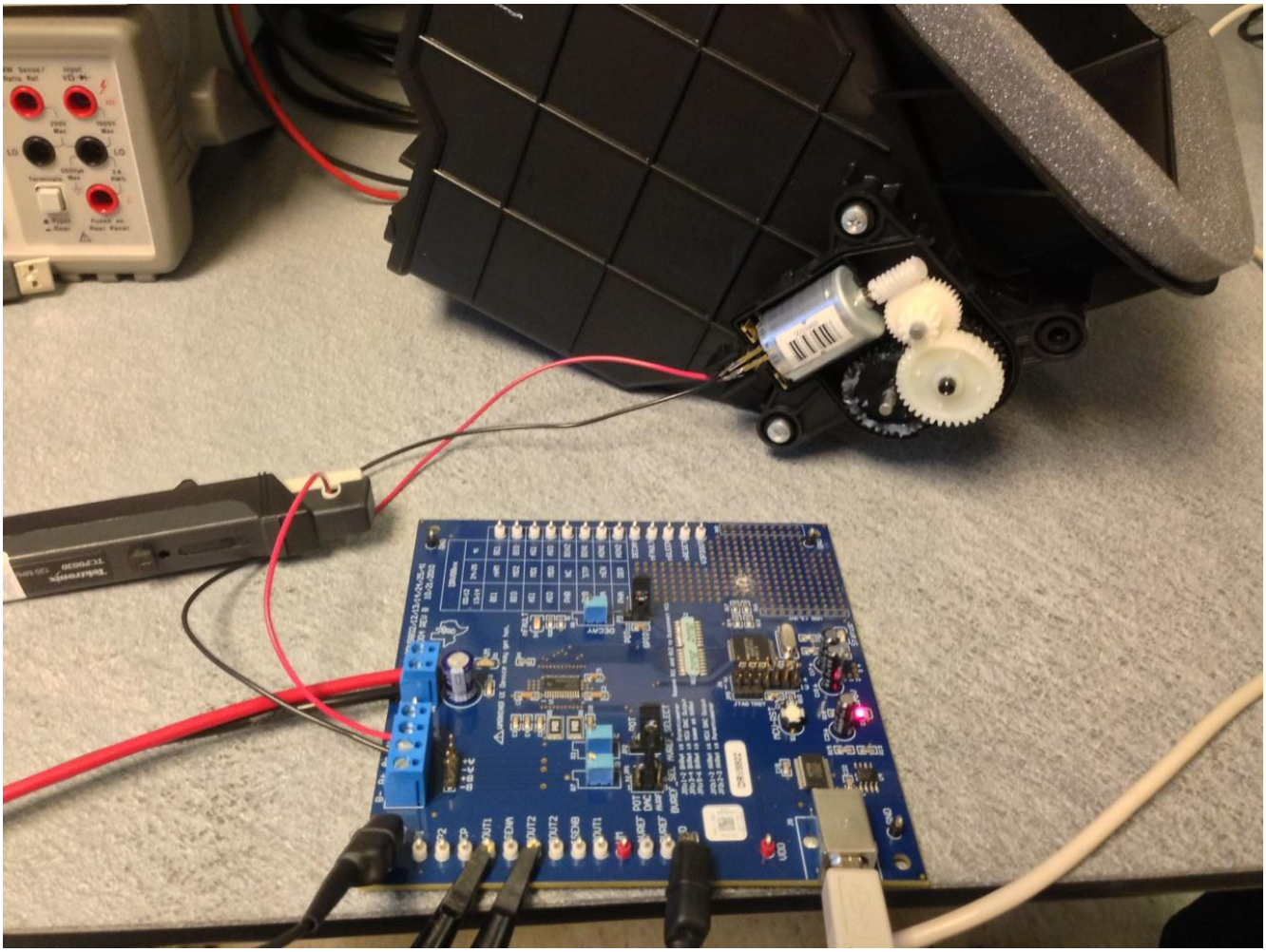
A VM voltage of 12V was used with VREF configured to 2.5V to set a 1.25A full-scale (100%) chopping current.

The driver was configured in slow decay mode with the bridge A current set to 100%. The forward direction in this test report refers to a positive voltage on AOUT1 with the red wire of the brushed DC motor connected to AOUT1 on the DRV8802EVM. The reverse direction in this test report refers to a positive voltage on AOUT2 with the black wire of the brushed DC motor connected to AOUT2 on the DRV8802EVM.

The DRV8802EVM GUI was configured as shown below.

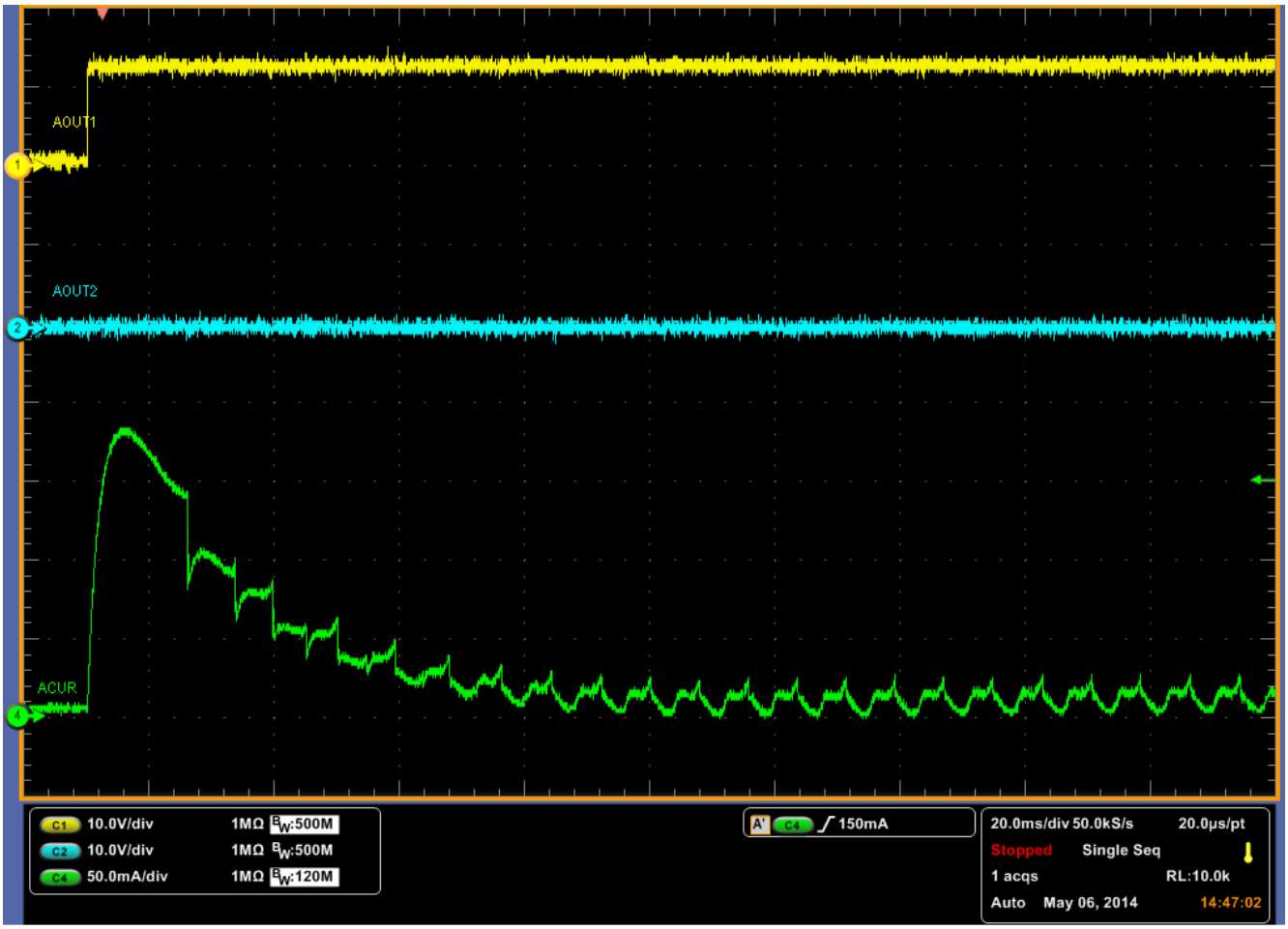


The following picture illustrates the test setup.



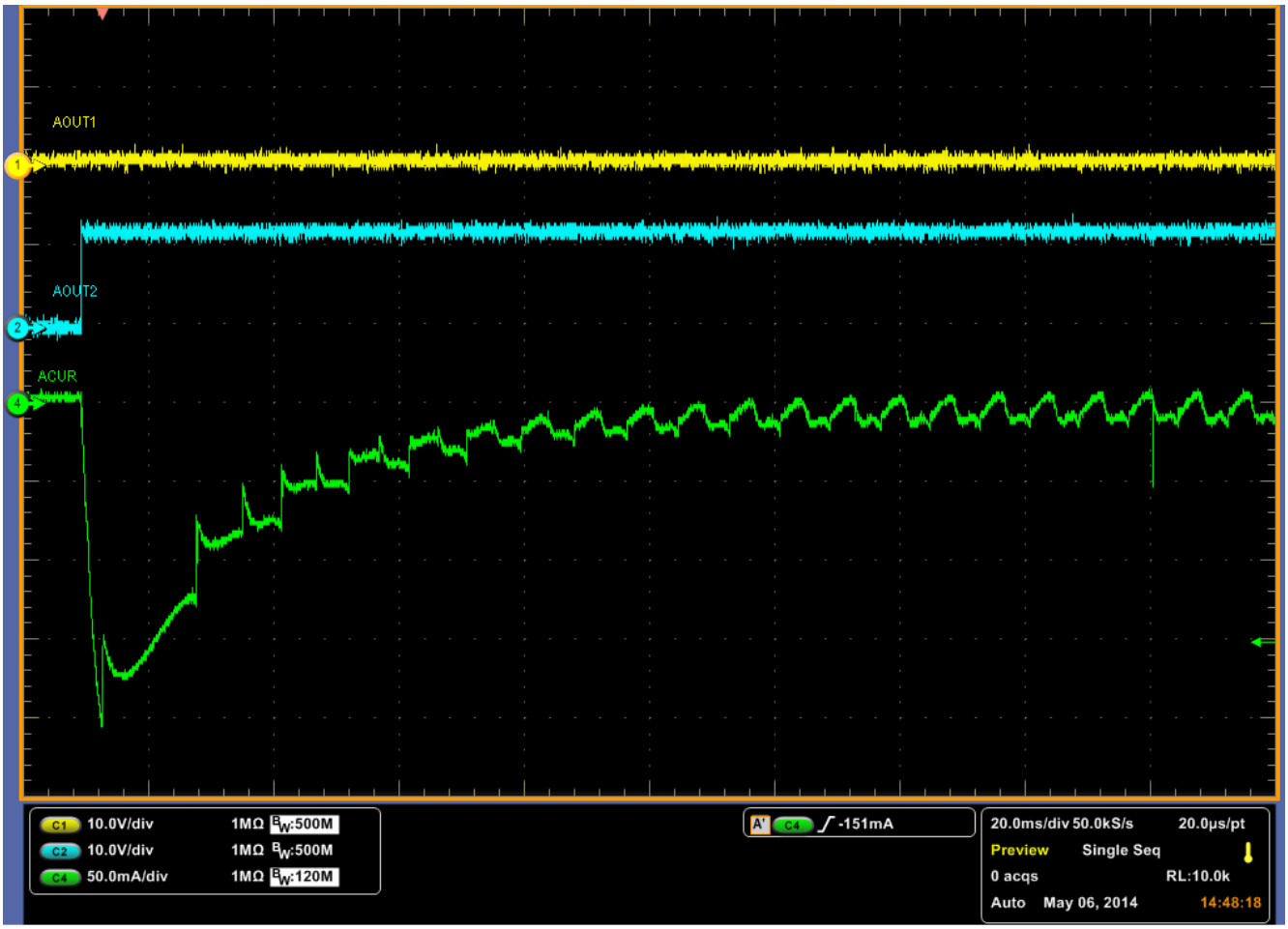
C. Forward Startup Waveforms

The following waveforms illustrate AOUT1 voltage, AOUT2 voltage, and bridge A current during startup of the brushed DC motor in the forward direction.



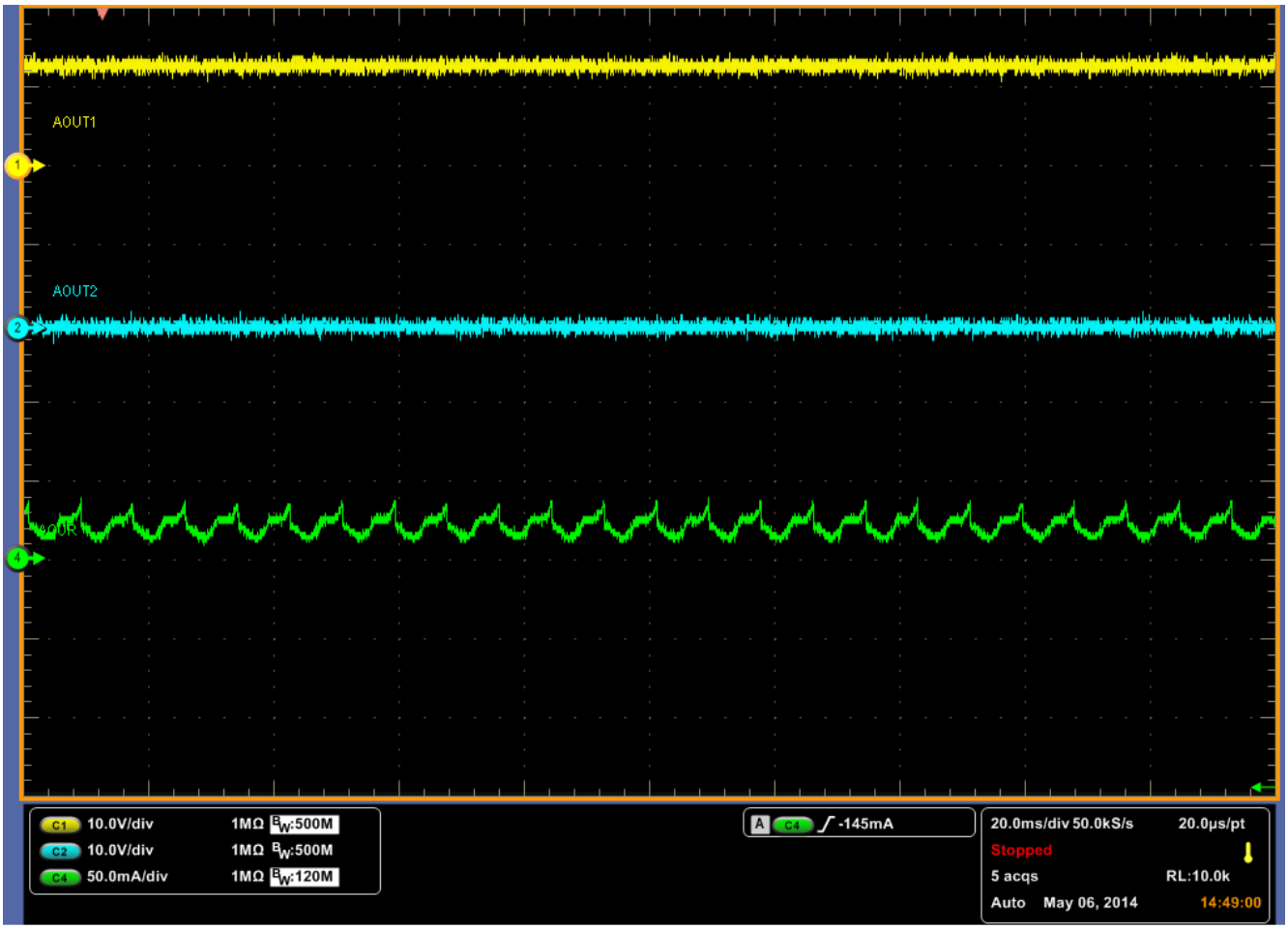
D. Reverse Startup Waveforms

The following waveforms illustrate AOUT1 voltage, AOUT2 voltage, and bridge A current during startup of the brushed DC motor in the reverse direction.



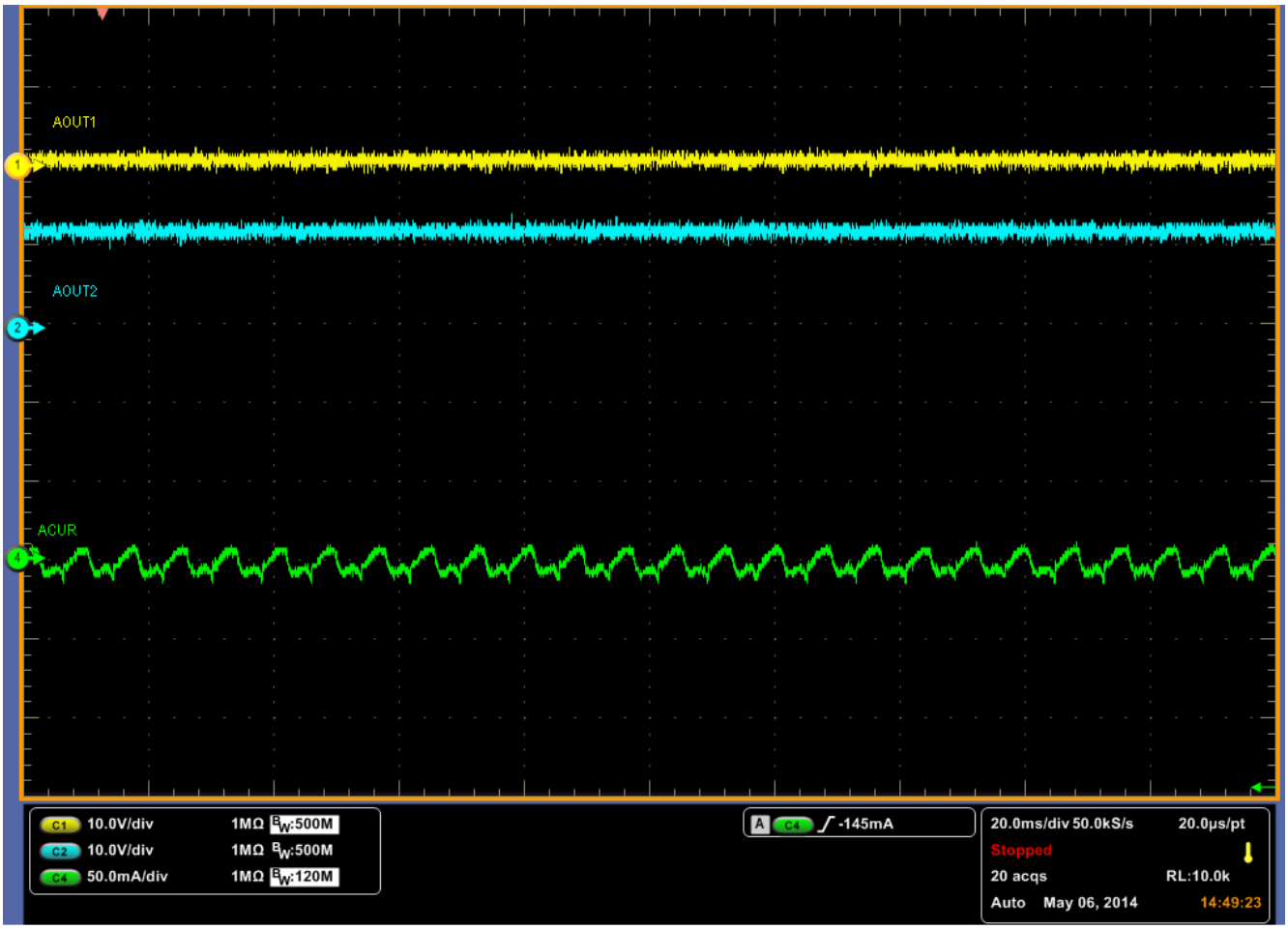
E. Forward Running Waveforms

The following waveforms illustrate AOUT1 voltage, AOUT2 voltage, and bridge A current while the brushed DC motor was running in the forward direction.



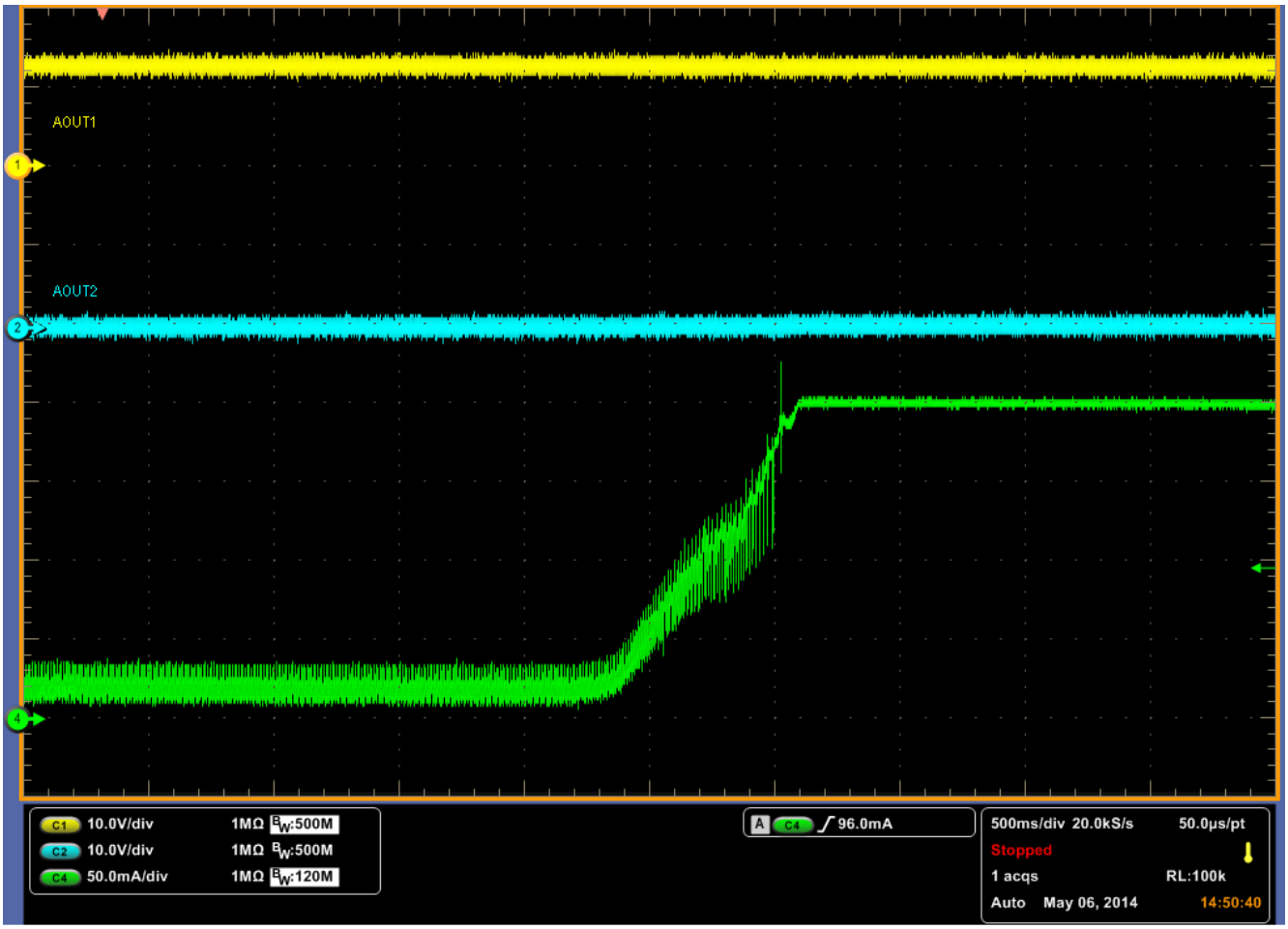
F. Reverse Running Waveforms

The following waveforms illustrate AOUT1 voltage, AOUT2 voltage, and bridge A current while the brushed DC motor was running in the reverse direction.



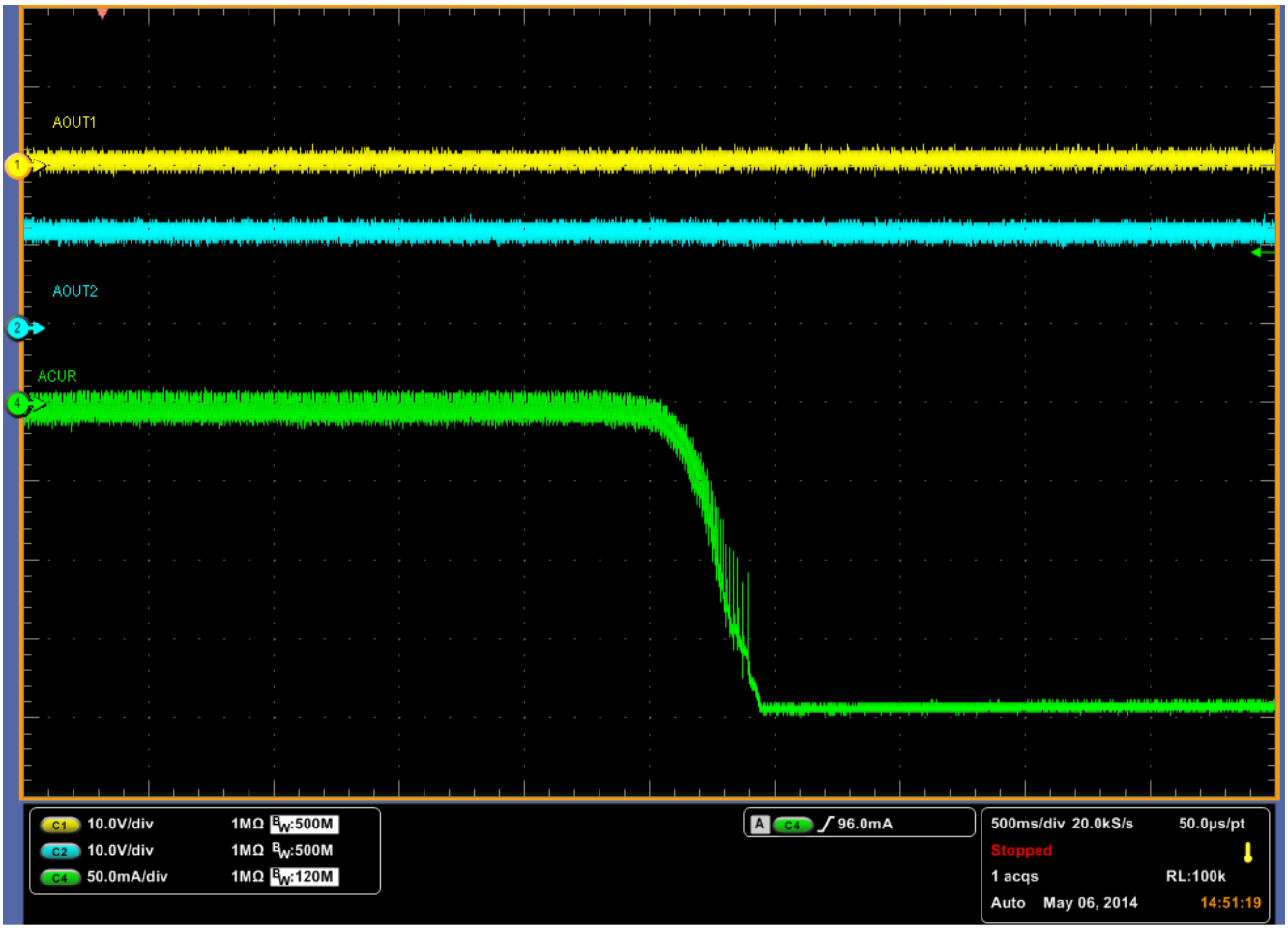
G. Forward Stall Waveforms

The following waveforms illustrate AOUT1 voltage, AOUT2 voltage, and bridge A current during the stall condition of the brushed DC motor in the forward direction.



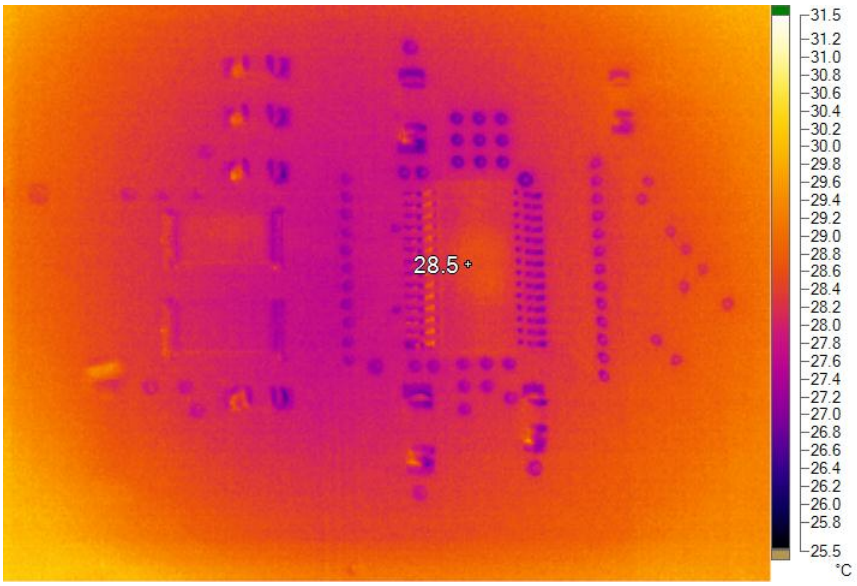
H. Reverse Stall Waveforms

The following waveforms illustrate AOUT1 voltage, AOUT2 voltage, and bridge A current during the stall condition of the brushed DC motor in the reverse direction.



I. Thermal Image

The following is a thermal image of the DRV8802EVM captured with the brushed DC motor in the stall condition. The maximum case temperature measurement was 28.5°C.



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