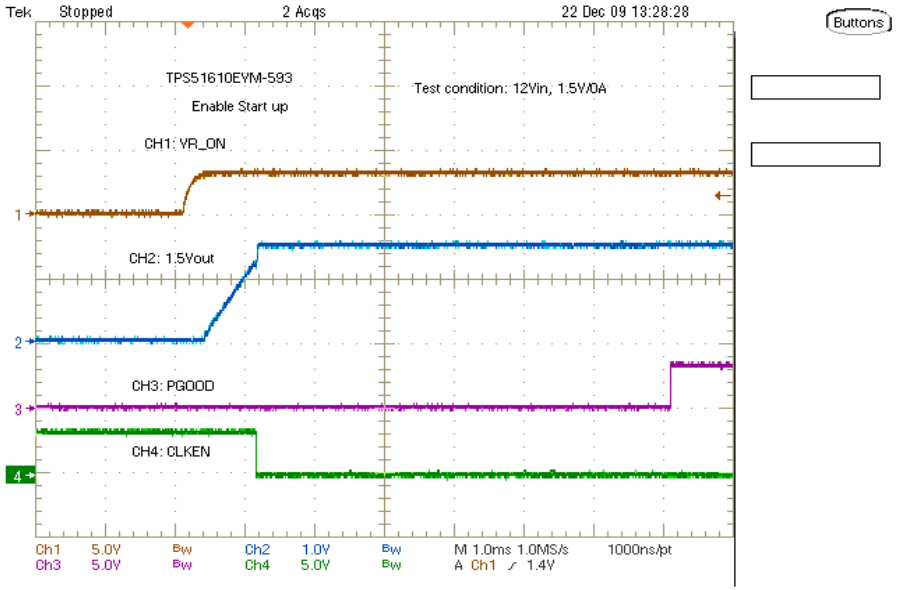
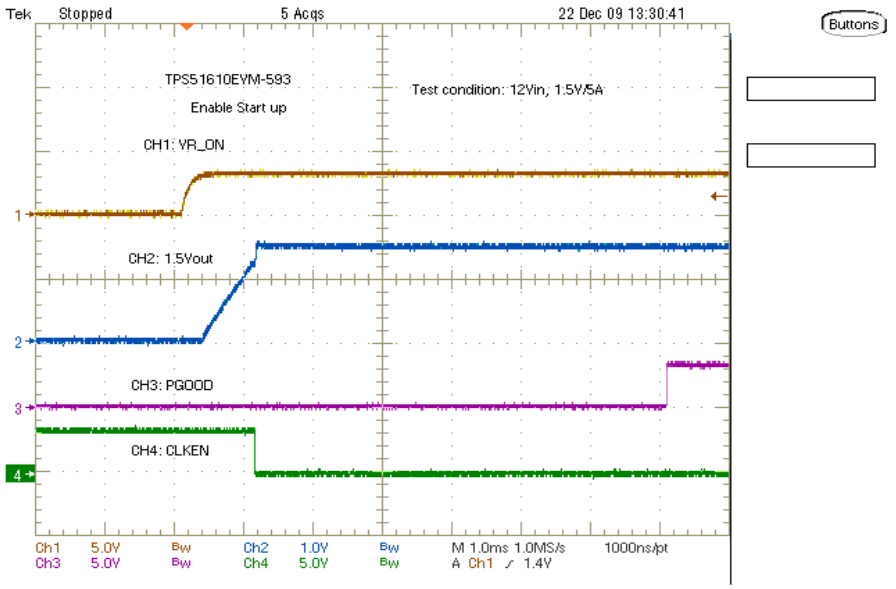
TPS51610EVM-593 Rev.E1 Waveforms

1. Enable Start Up

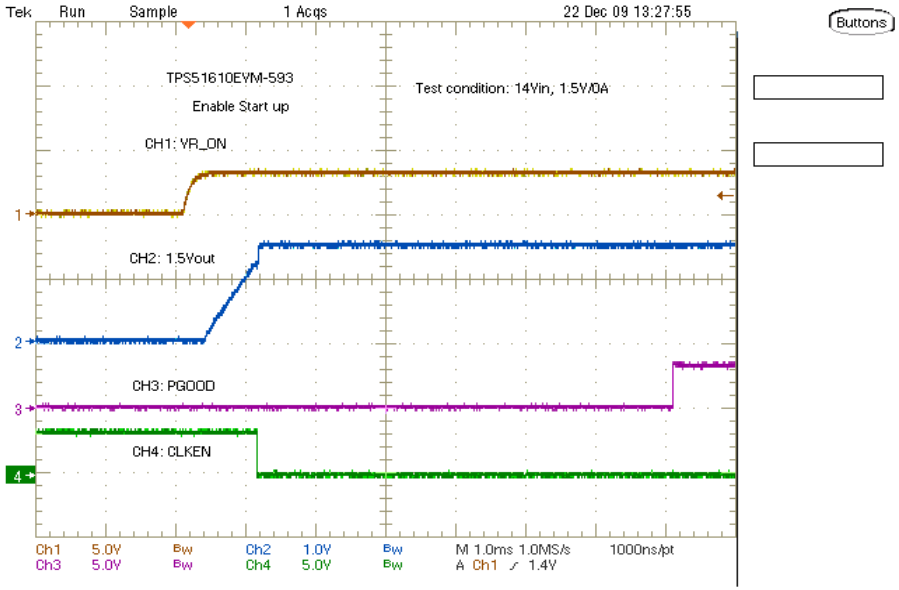
Test condition: 12Vin, 1.5V/0A



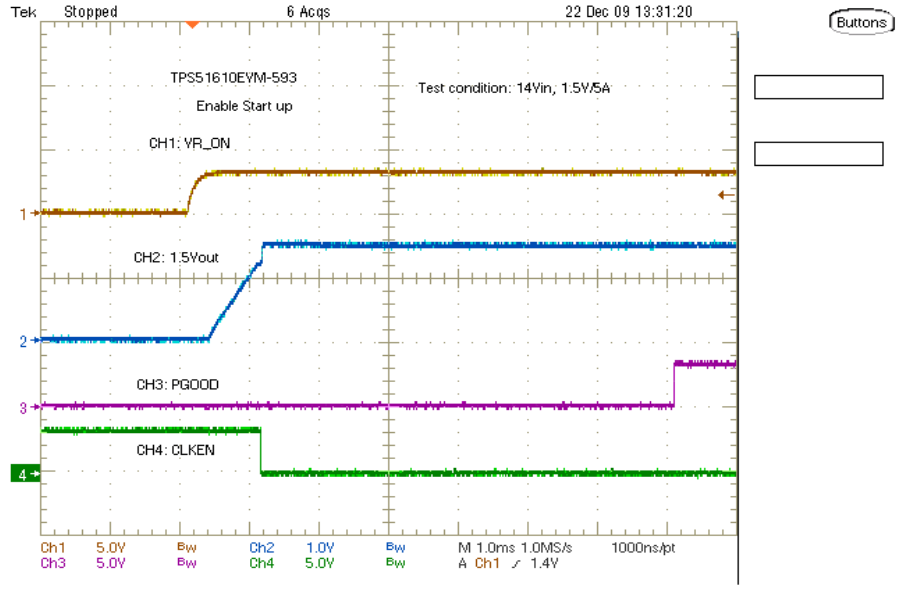
Test condition: 12Vin, 1.5V/5A



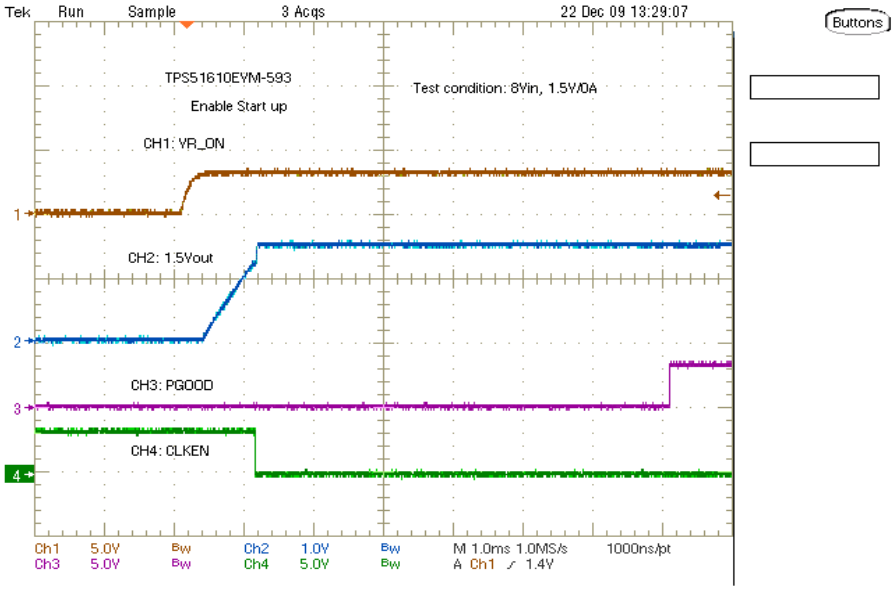
Test condition: 14Vin, 1.5V/0A



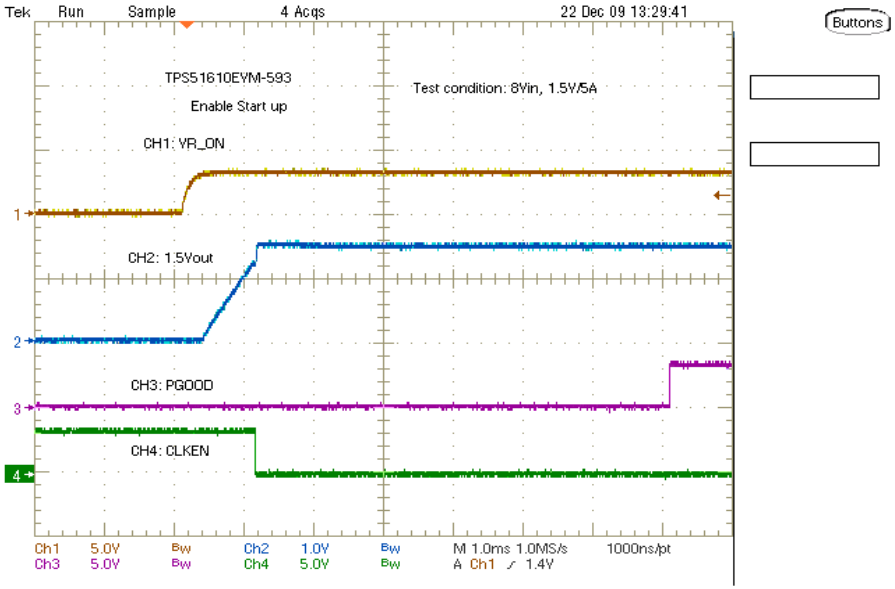
Test condition: 14Vin, 1.5V/5A



Test condition: 8Vin, 1.5V/0A

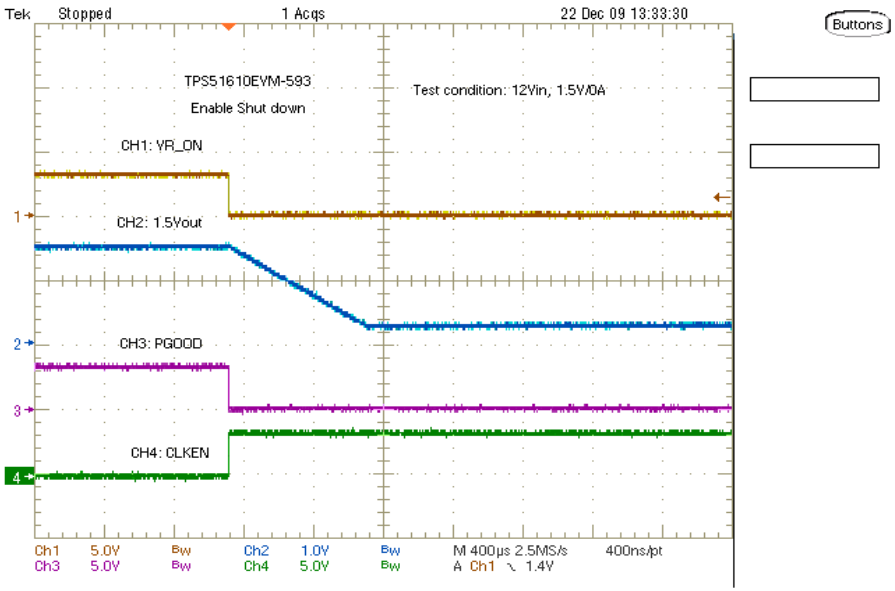


Test condition: 8Vin, 1.5V/5A

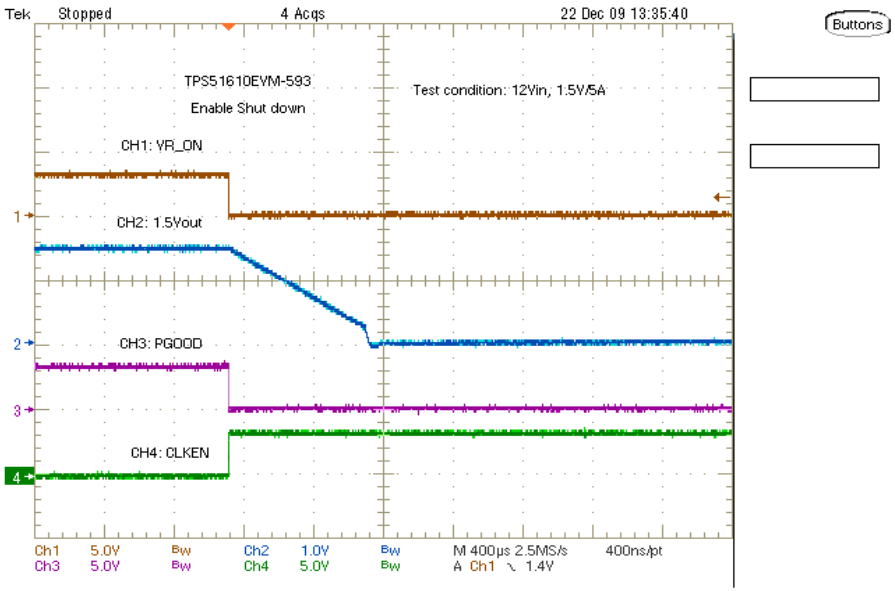


2. Enable Shutdown

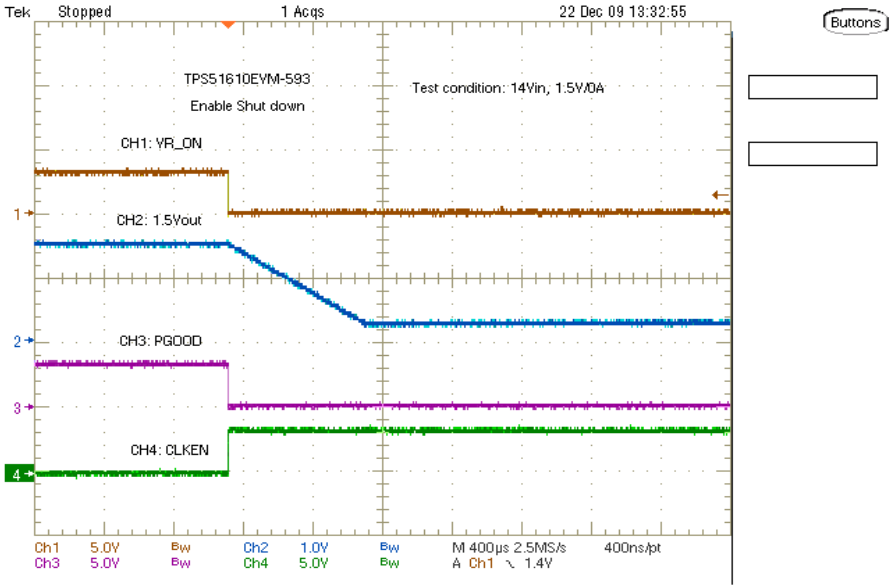
Test condition: 12Vin, 1.5V/0A



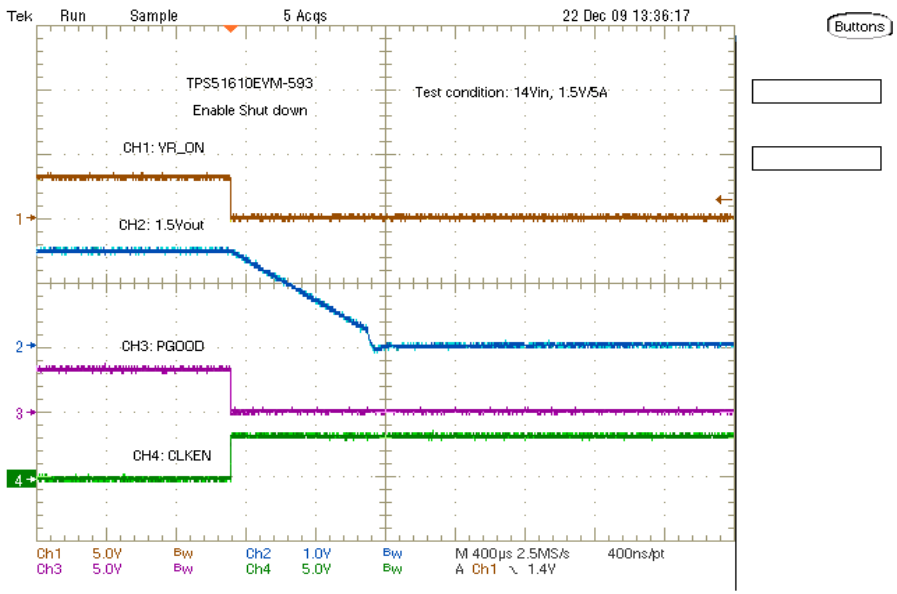
Test condition: 12Vin, 1.5V/5A



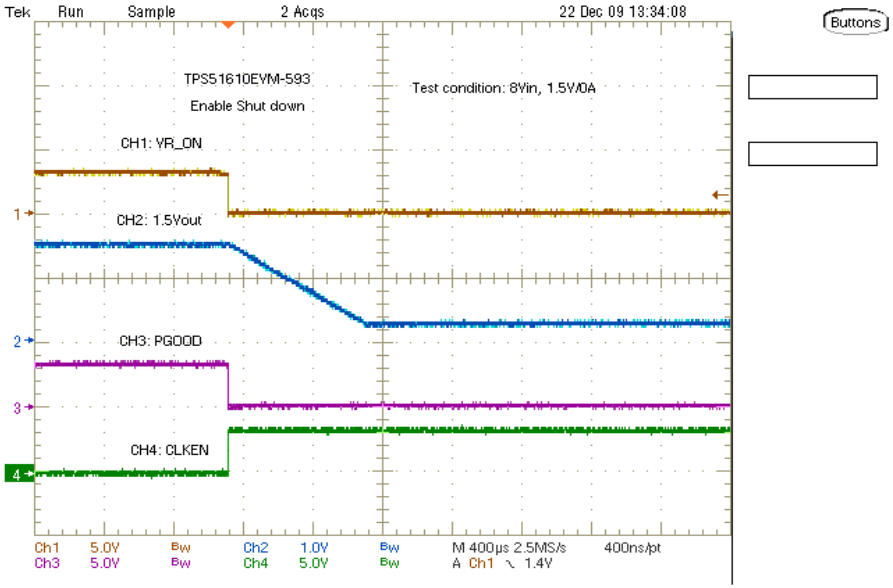
Test condition: 14Vin, 1.5V/0A



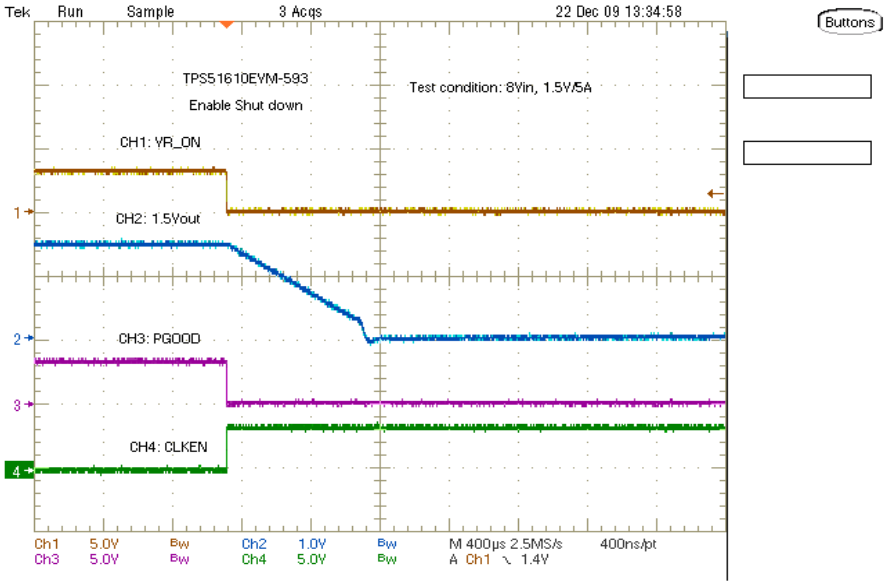
Test condition: 14Vin, 1.5V/5A



Test condition: 8Vin, 1.5V/0A

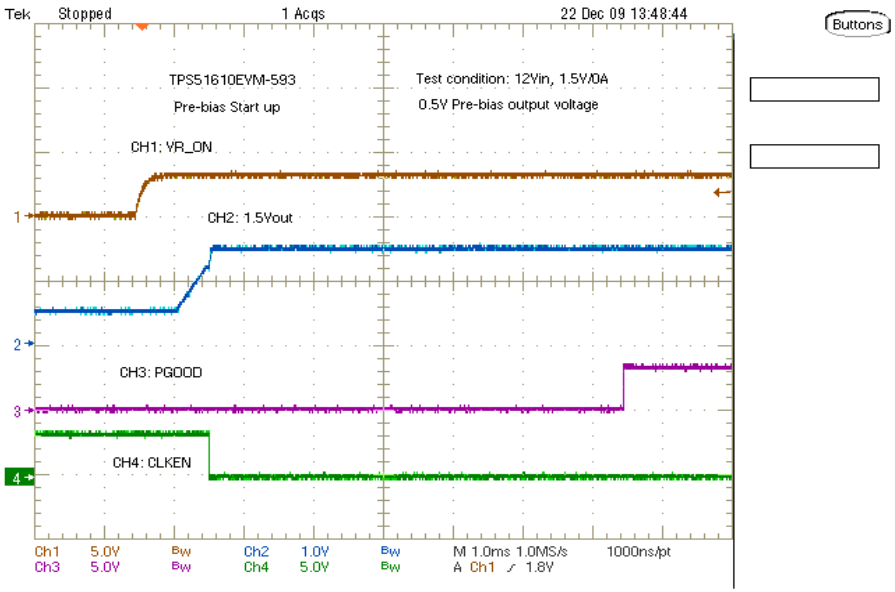


Test condition: 8Vin, 1.5V/5A

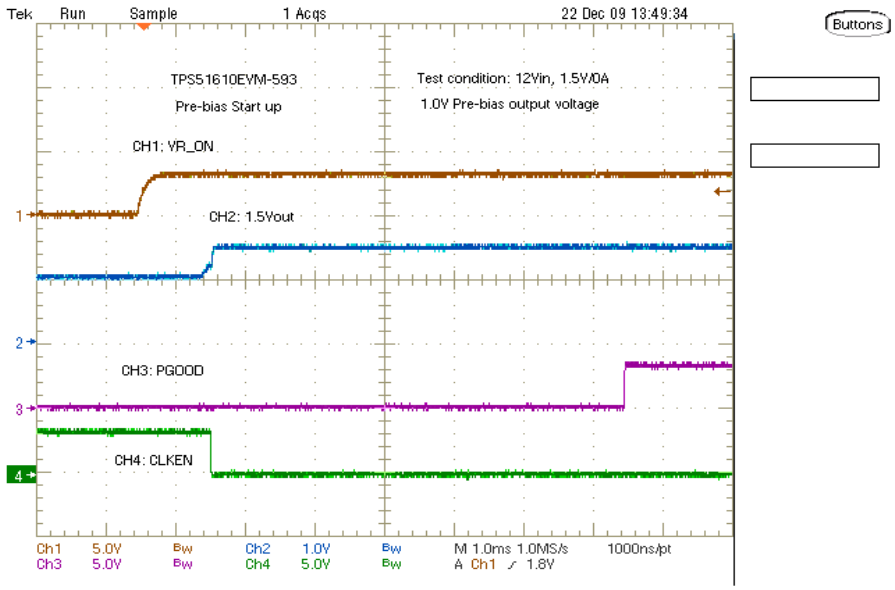


3. Pre-bias start up

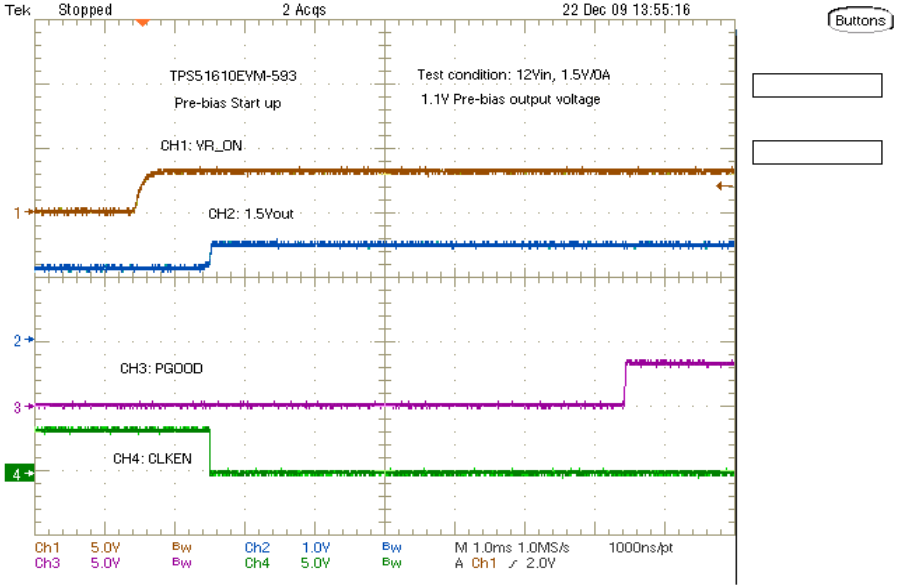
Test condition: 12Vin, 1.5V/0A with pre-bias 0.5V



Test condition: 12Vin, 1.5V/0A with pre-bias 1.0V



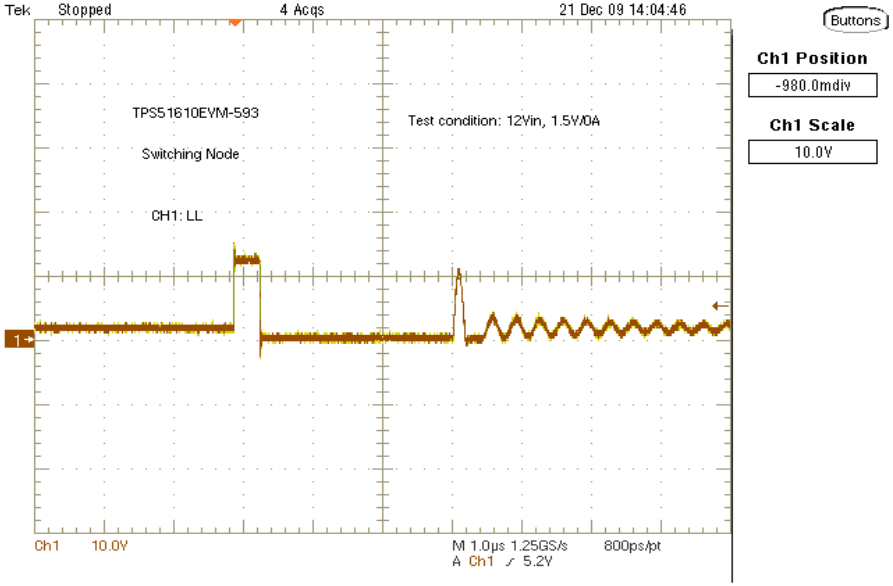
Test condition: 12Vin, 1.5V/0A with pre-bias 1.1V



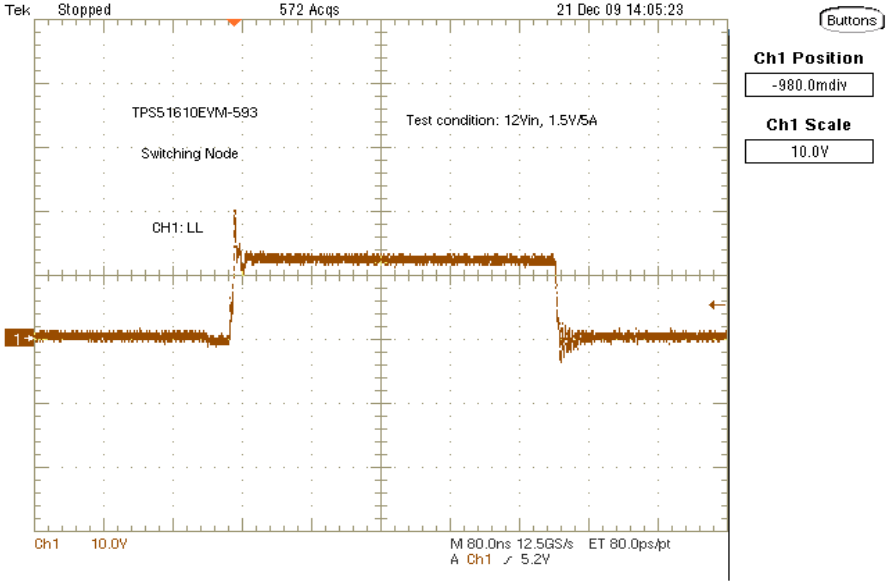
Note: The unit could not start up if the pre-bias voltage is higher than 1.1V

4. Switching node waveform

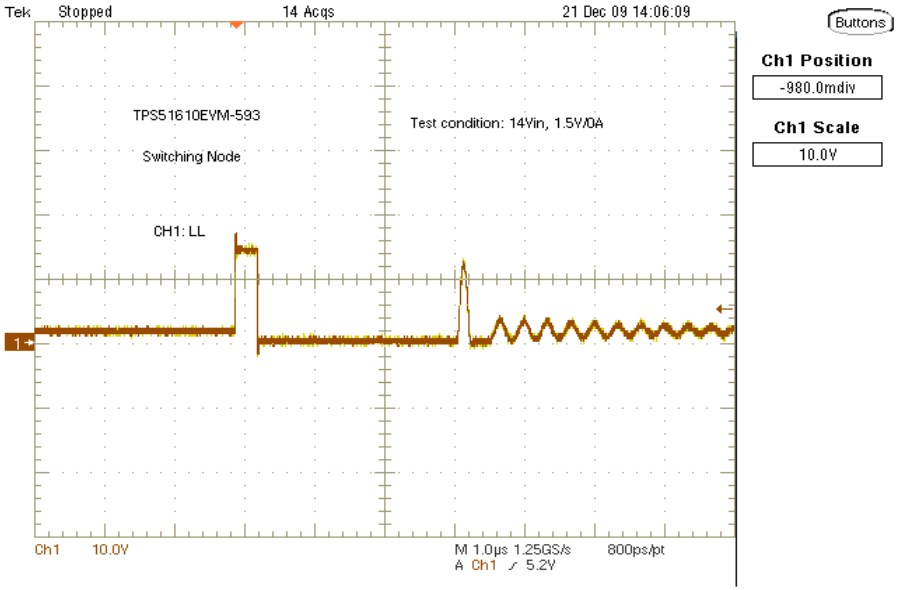
Test condition: 12Vin, 1.5V/0A



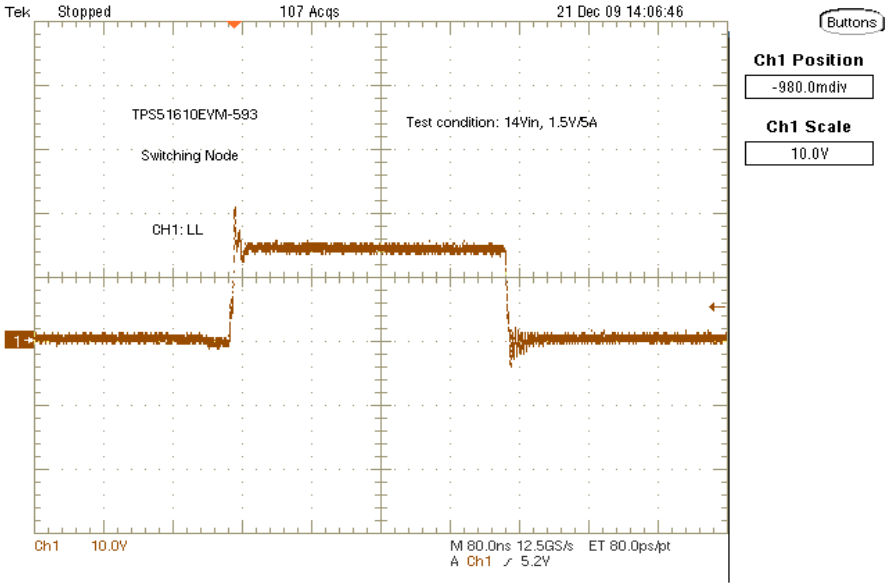
Test condition: 12Vin, 1.5V/5A



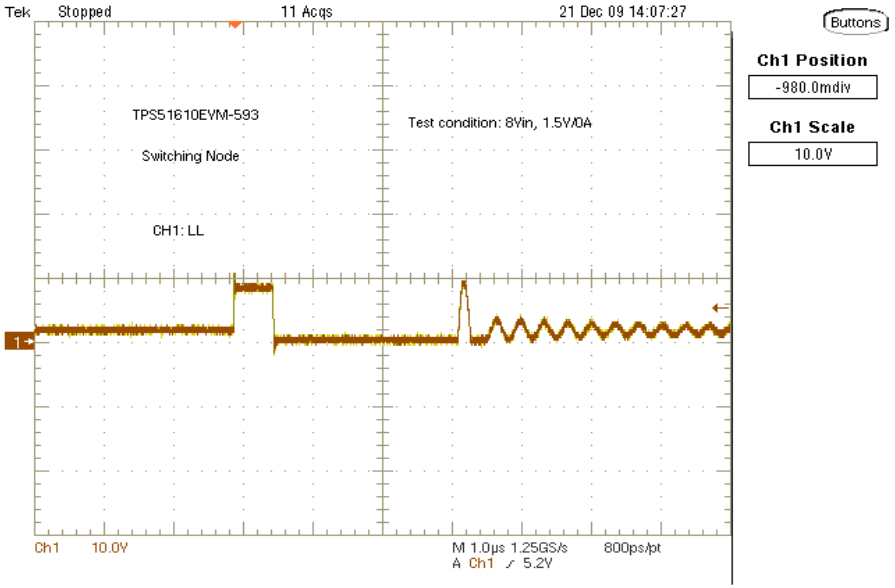
Test condition: 14Vin, 1.5V/0A



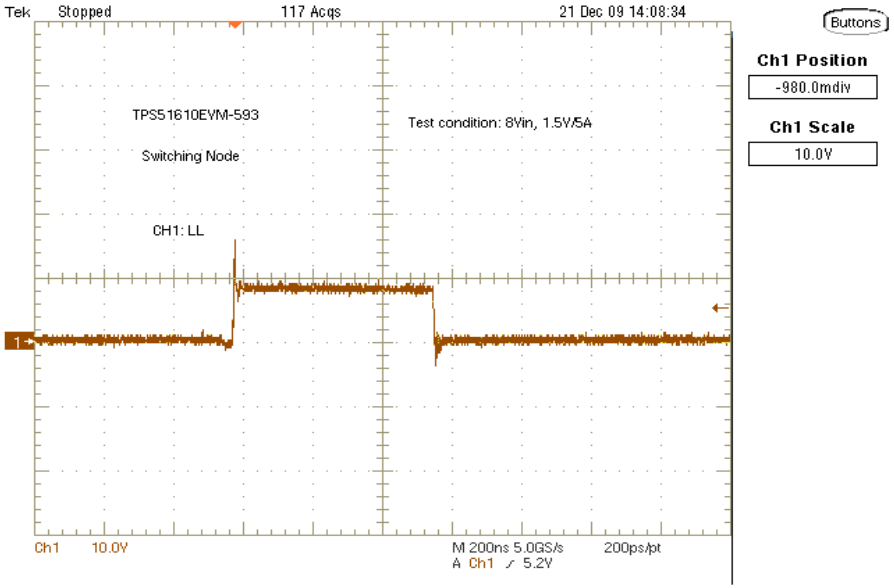
Test condition: 14Vin, 1.5V/5A



Test condition: 8Vin, 1.5V/0A

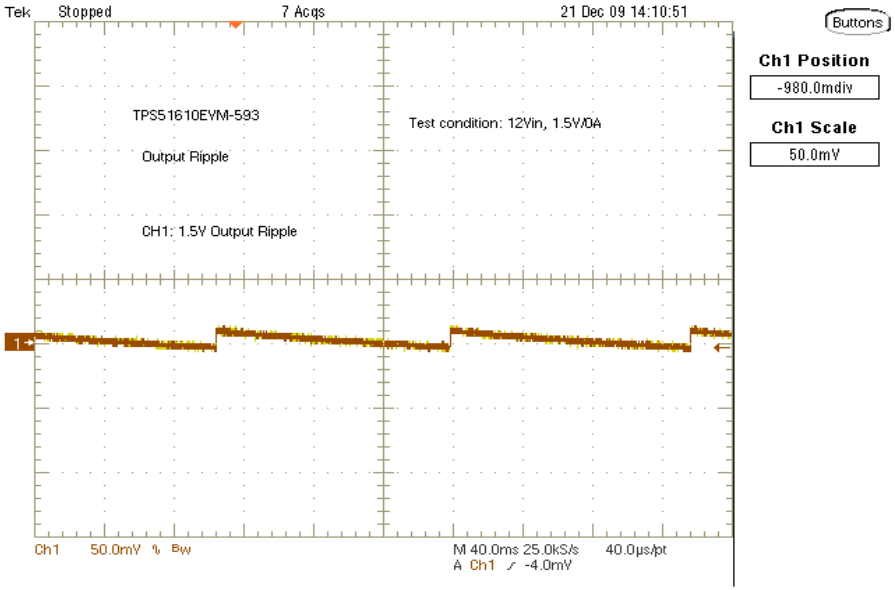


Test condition: 8Vin, 1.5V/5A

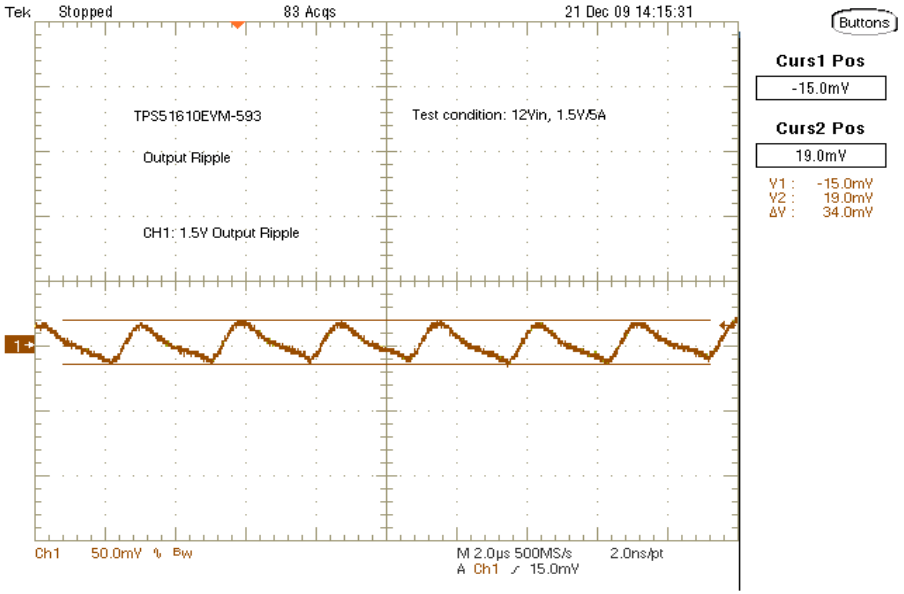


5. Output Ripple

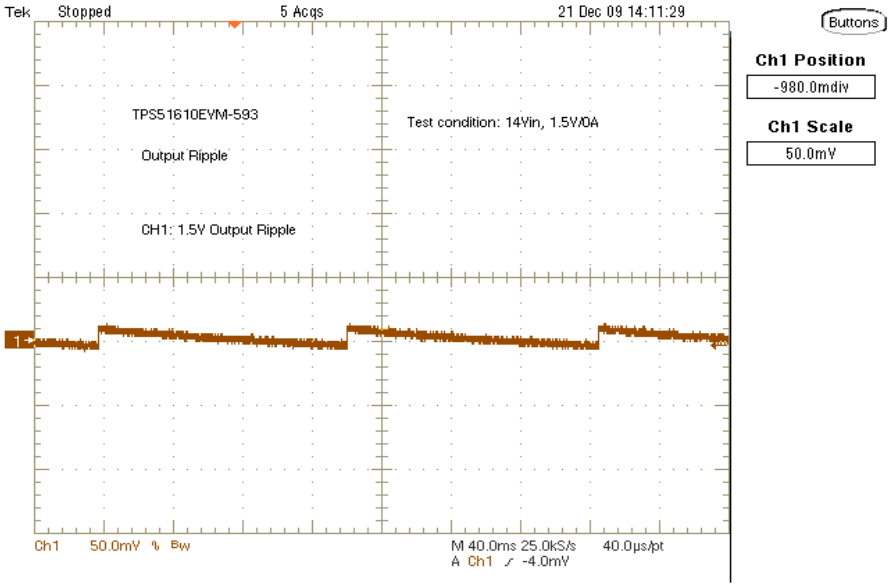
Test condition: 12Vin, 1.5V/0A



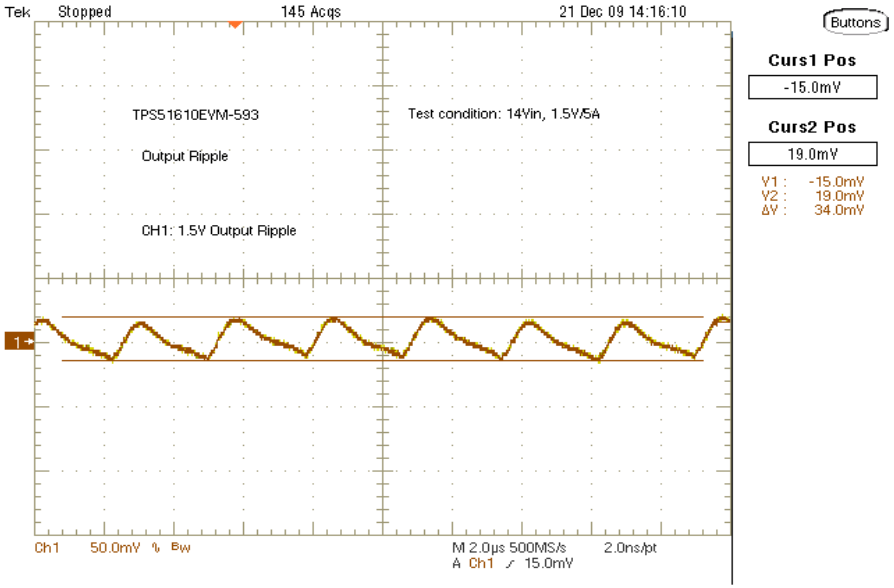
Test condition: 12Vin, 1.5V/5A



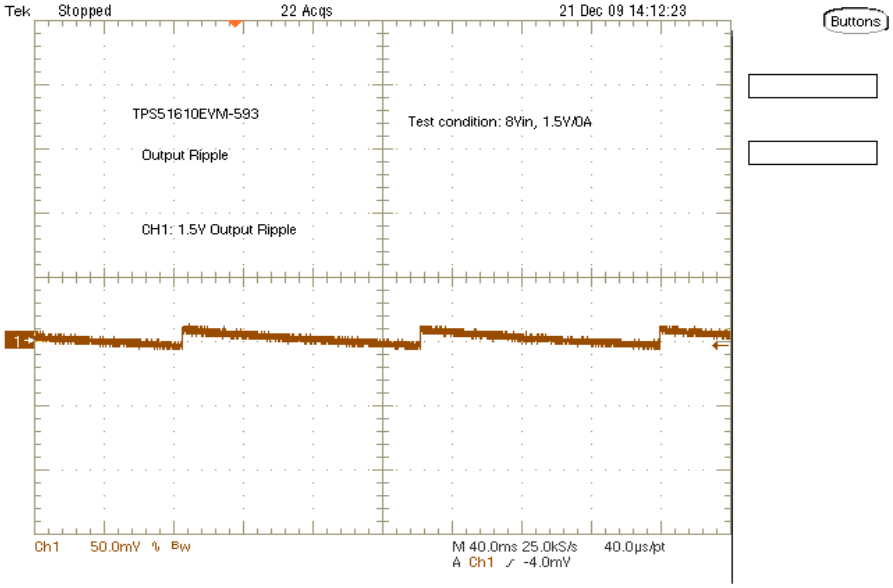
Test condition: 14Vin, 1.5V/0A



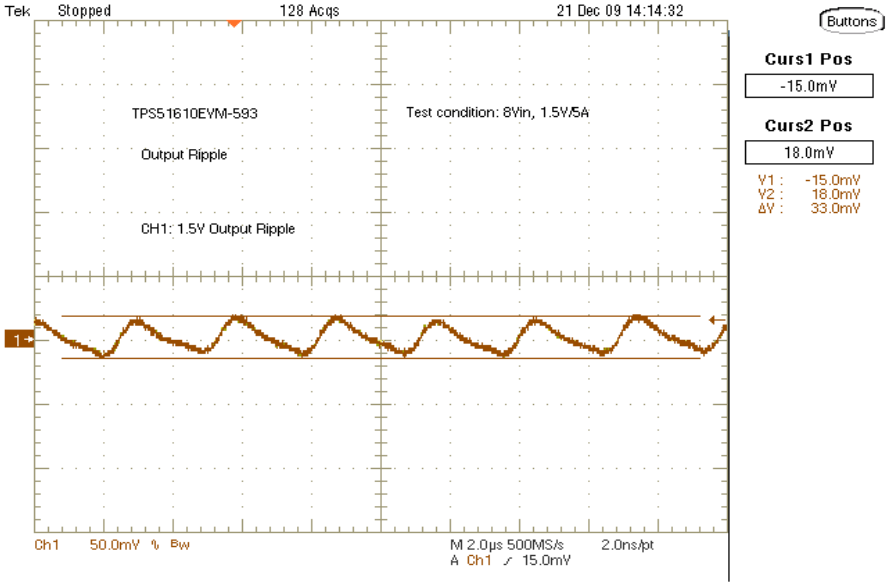
Test condition: 14Vin, 1.5V/5A



Test condition: 8Vin, 1.5V/0A

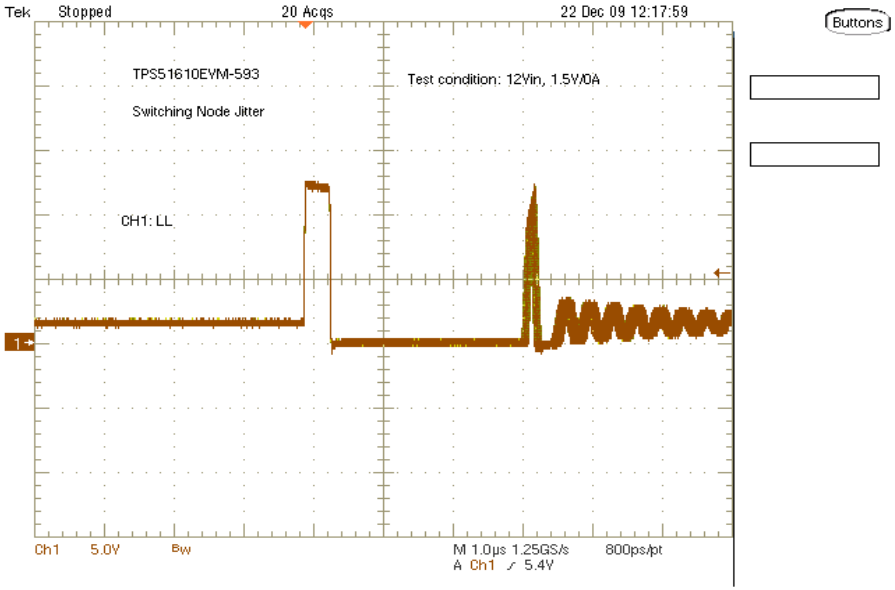


Test condition: 8Vin, 1.5V/5A

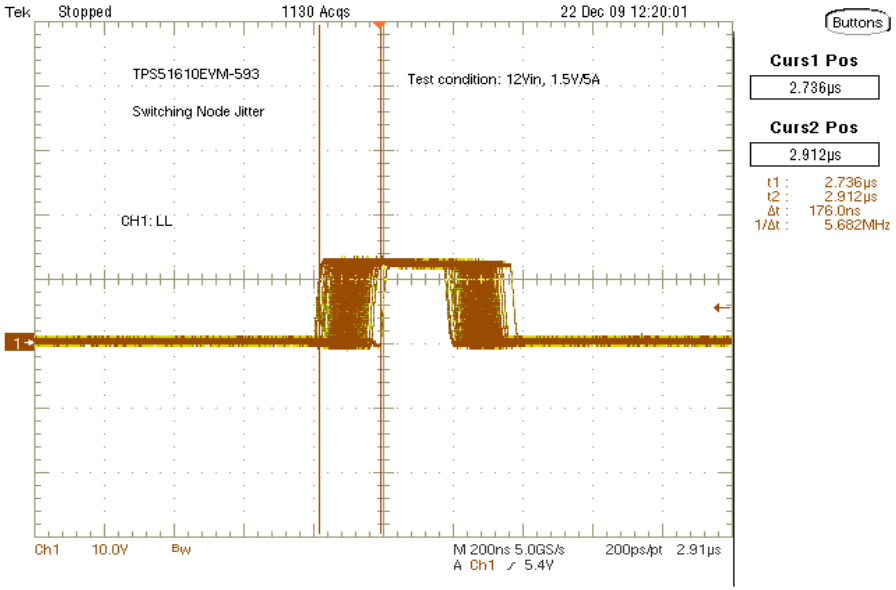


6. Switching Node Jitter

Test condition: 12Vin, 1.5V/0A

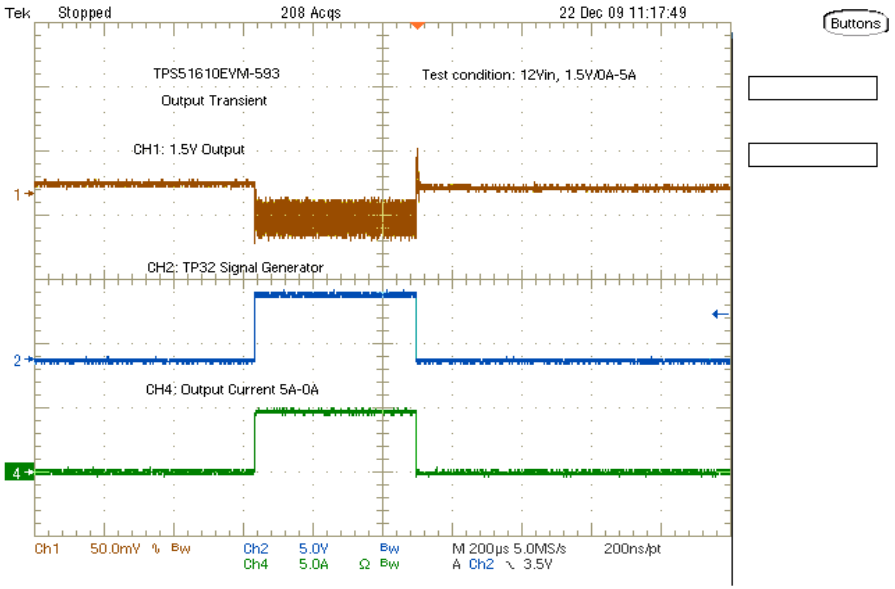


Test condition: 12Vin, 1.5V/5A

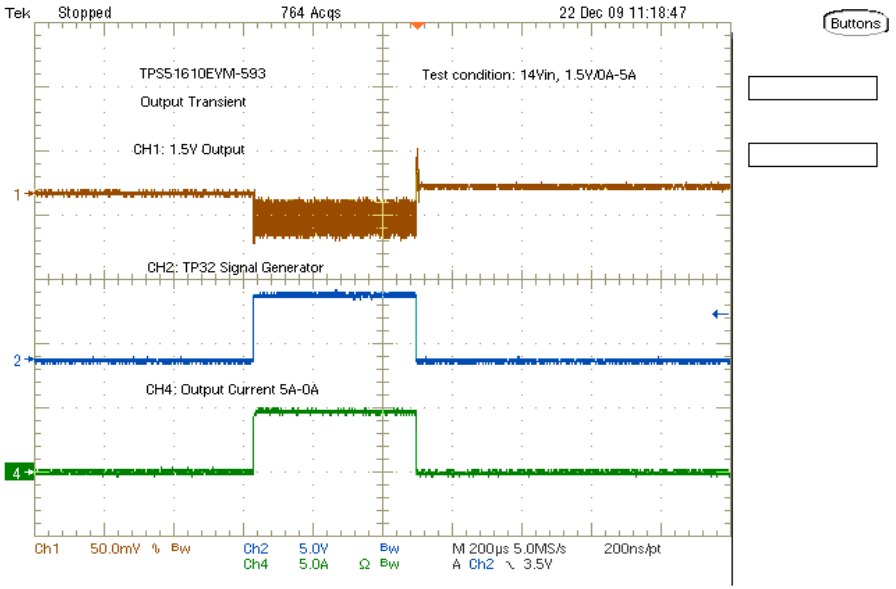


7. Transient Response

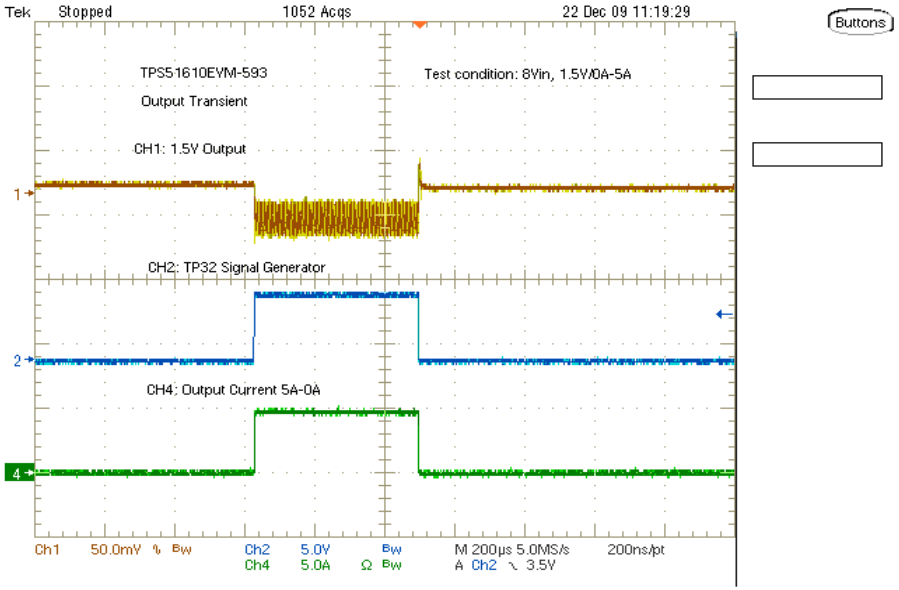
Test condition: 12Vin, 1.5V/0A-5A



Test condition: 14Vin, 1.5V/0A-5A

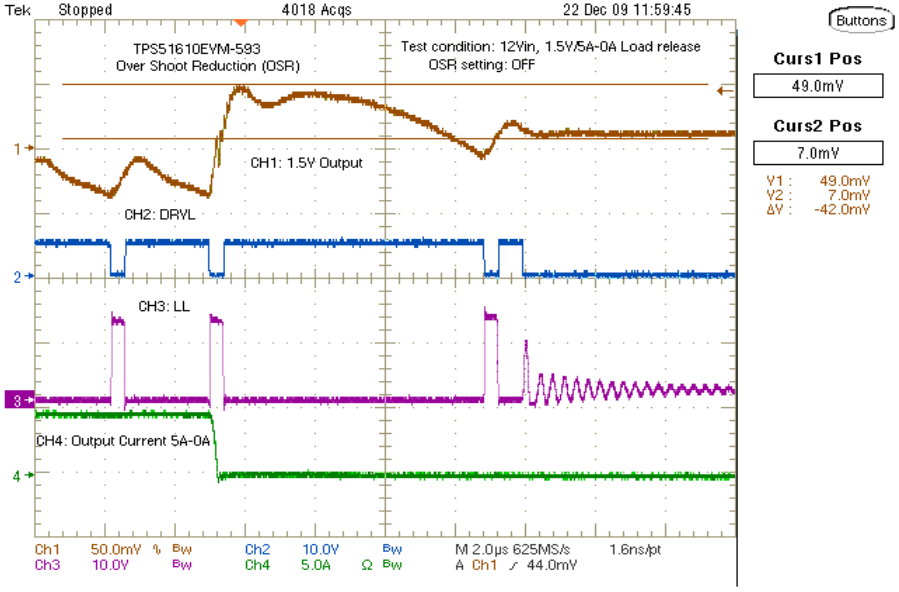


Test condition: 8Vin, 1.5V/0A-5A

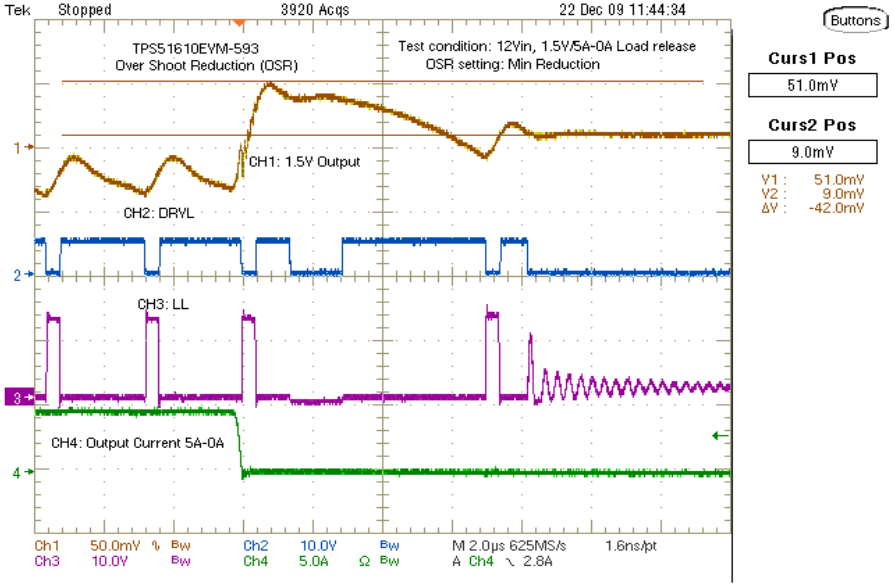


8. Over Shoot Reduction(OSR)

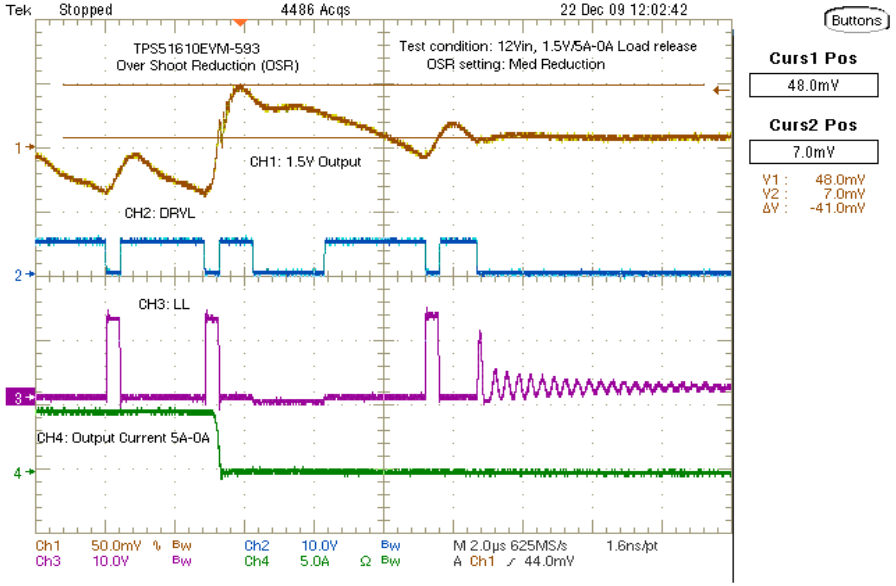
Test condition: 12Vin, 1.5V/0A-5A on board dynamic OSR=OFF



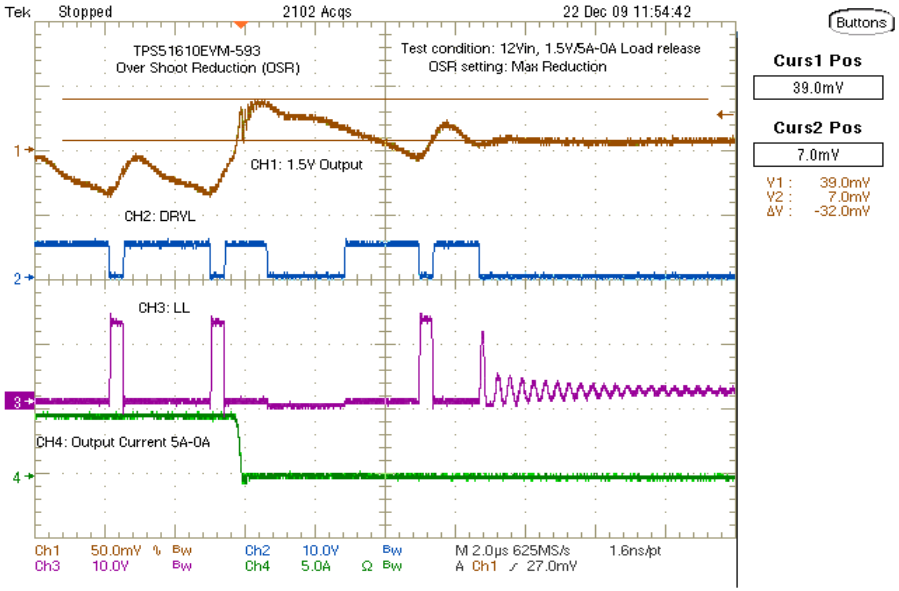
Test condition: 12Vin, 1.5V/0A-5A on board dynamic OSR=MIN



Test condition: 12Vin, 1.5V/0A-5A on board dynamic OSR=MED

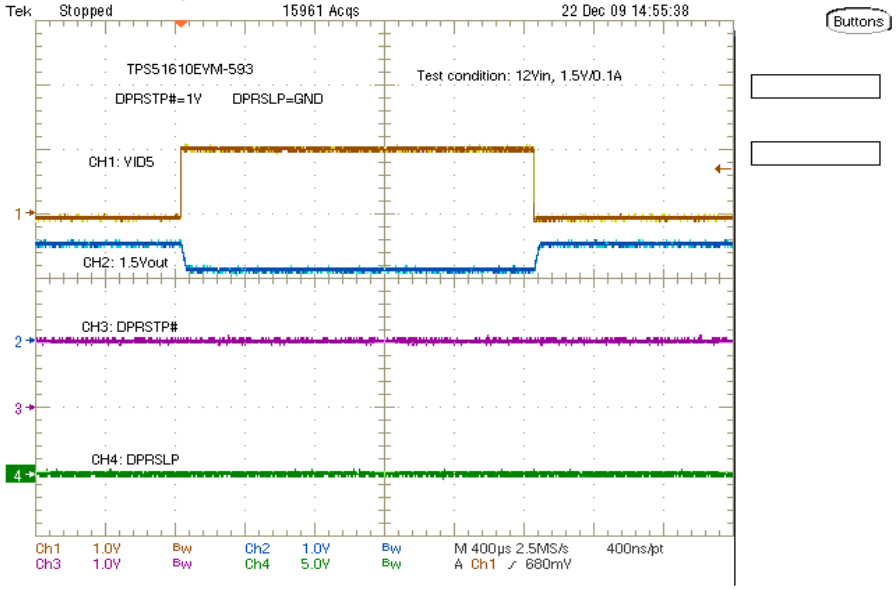


Test condition: 12Vin, 1.5V/0A-5A on board dynamic OSR=MAX

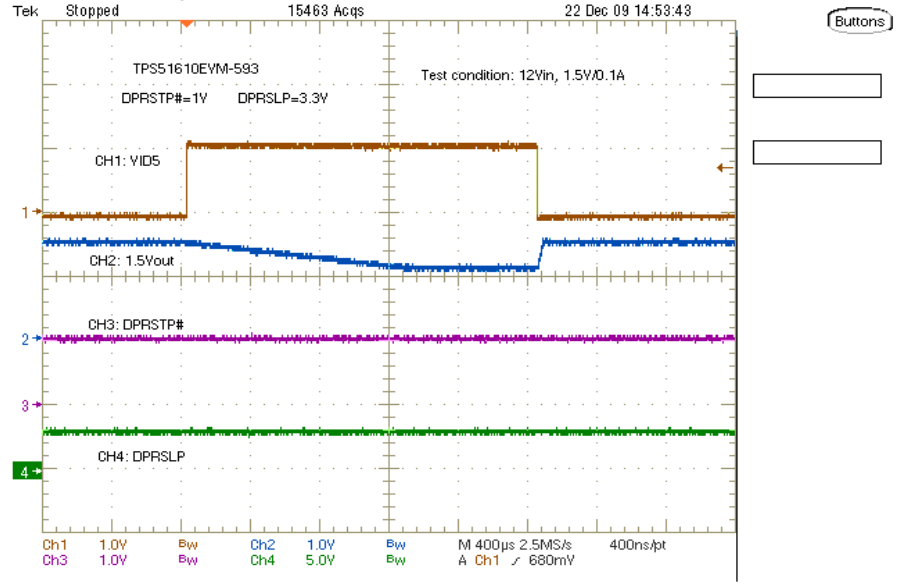


9. Deep Sleep Mode and Deep Stop Mode

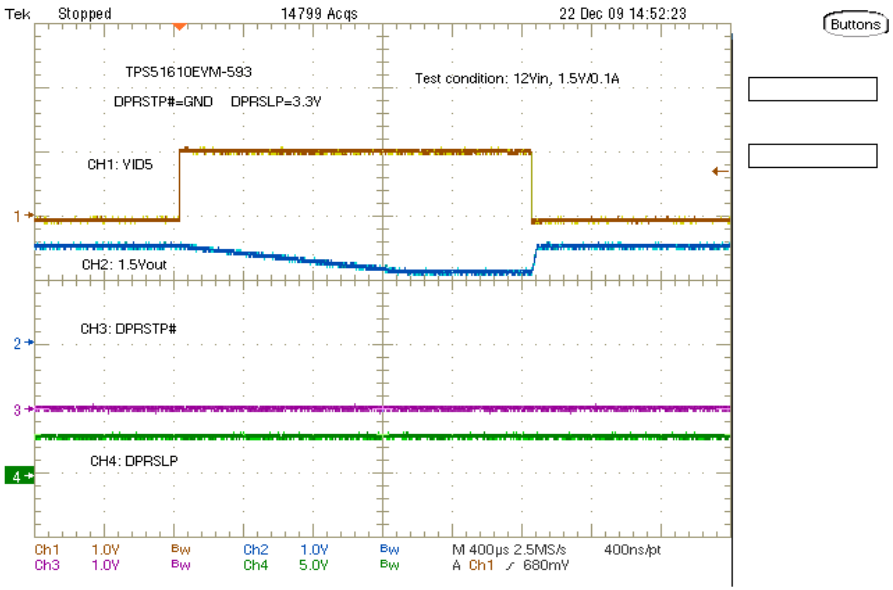
Test condition: 12Vin, 1.5V/0A VID5 change DPRSTP#=1V, DPRSLP=GND



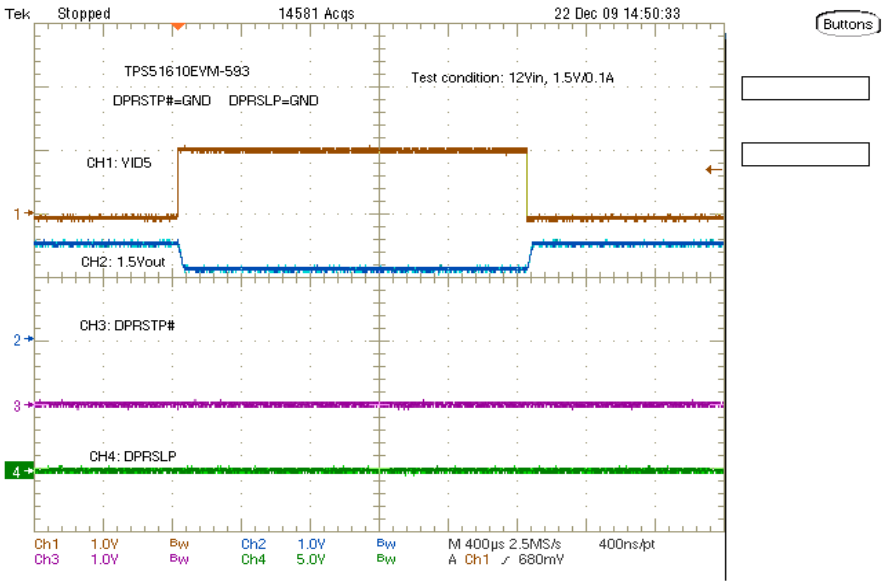
Test condition: 12Vin, 1.5V/0A VID5 change SLP=1V Enable SLP DPRSTP#=1V, DPRSLP=3.3V



Test condition: 12Vin, 1.5V/0A VID5 change
DPRSTP#=GND, DPRSLP=3.3V



Test condition: 12Vin, 1.5V/0A VID5 change
DPRSTP#=GND, DPRSLP=GND



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