

# Test Report

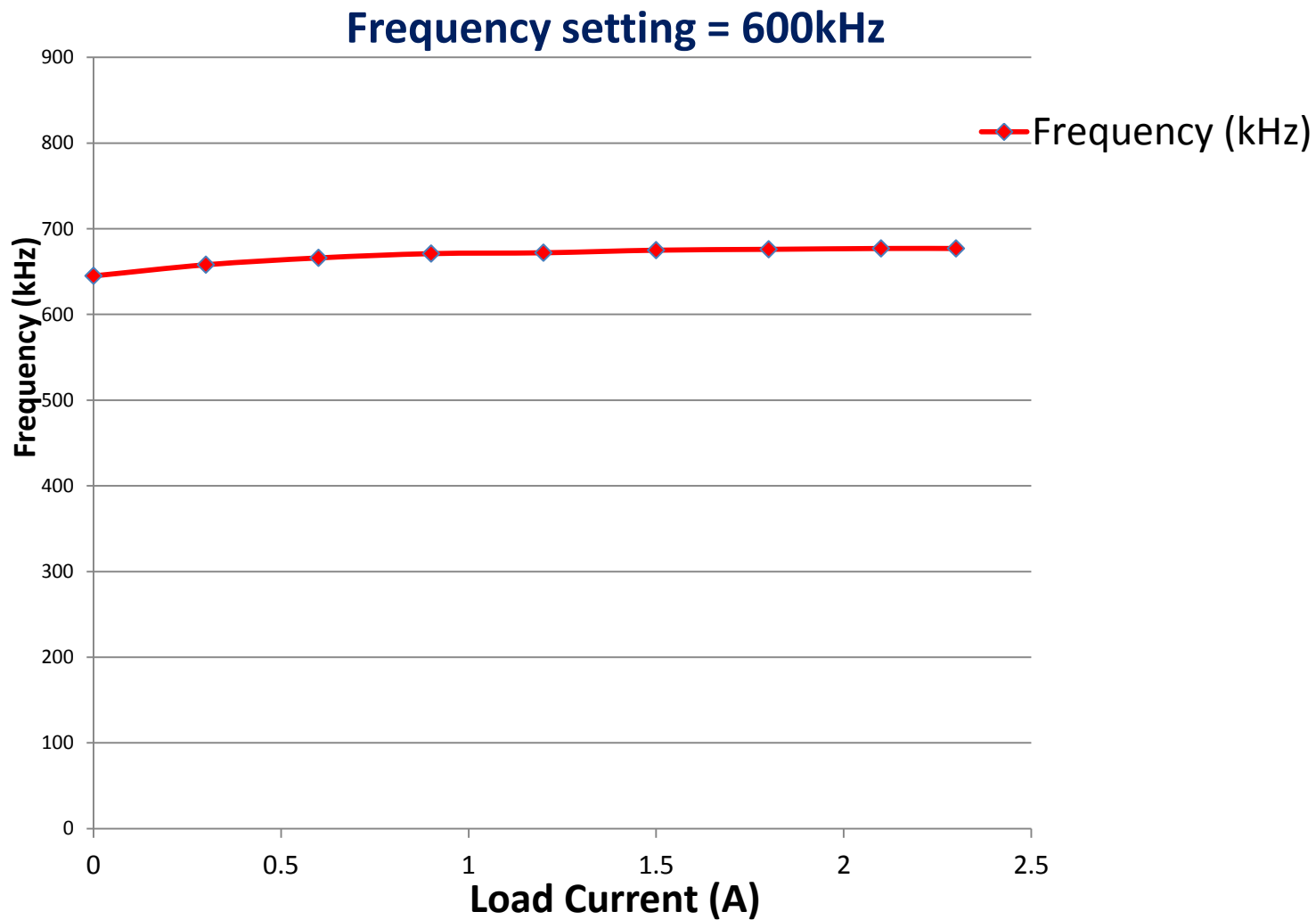
TIDA-00507

TPS53625 Intel® Atom™ C2000 PVNN

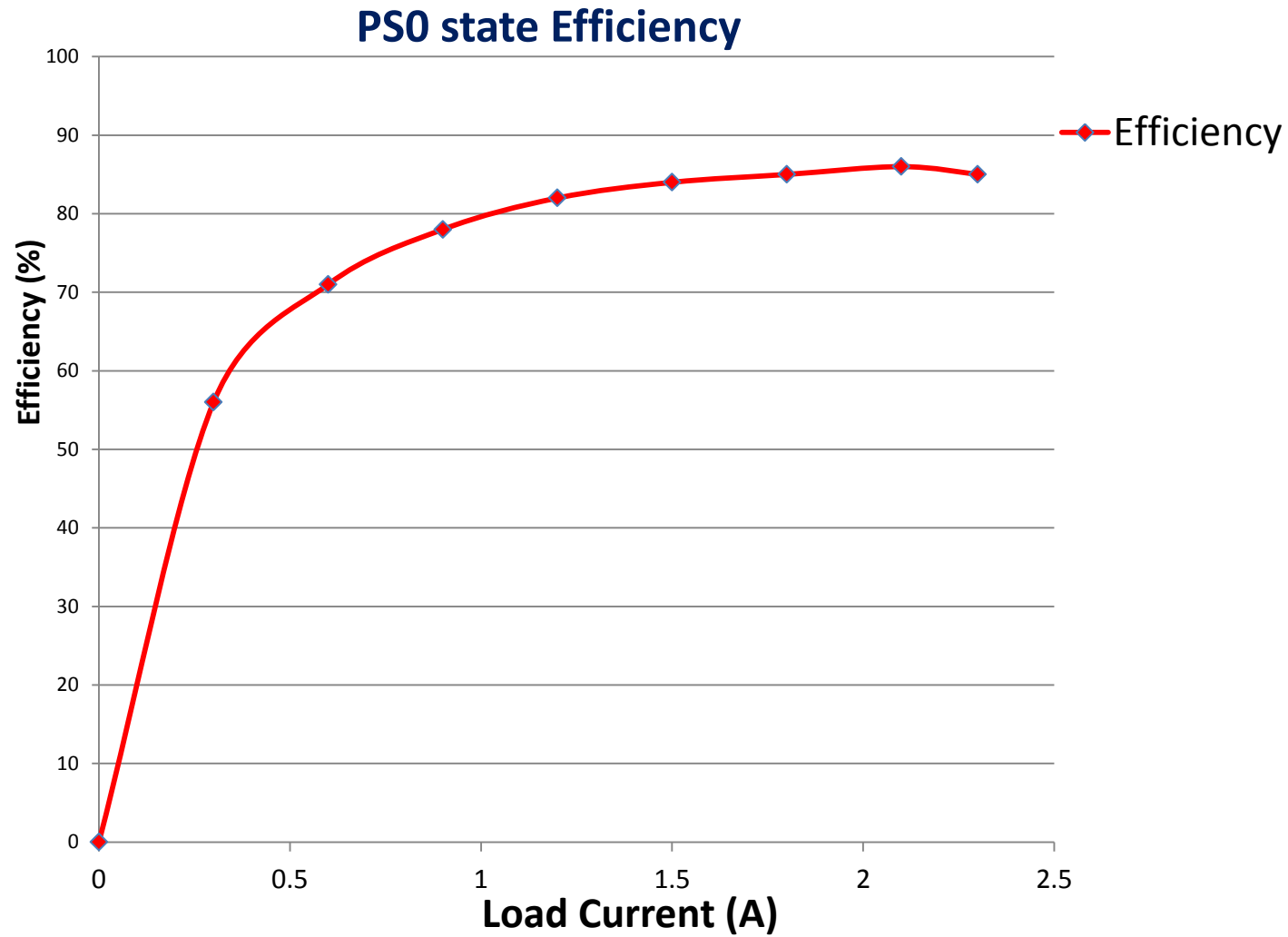
# PVNN- Configuration

- 1-phase mode
- MOSFET: TI Power Stage: CSD97374Q4M
- Inductor: 2.2uH, 7mohm
- Output Capacitor:
  - Bulk: No Bulk
  - Ceramic: 4x47uF
- Max Current: 2.3A
- Frequency: 600KHz
- Zero Load-line
- Ramp 100mV
- SVID Address : 01h
- OSR disabled

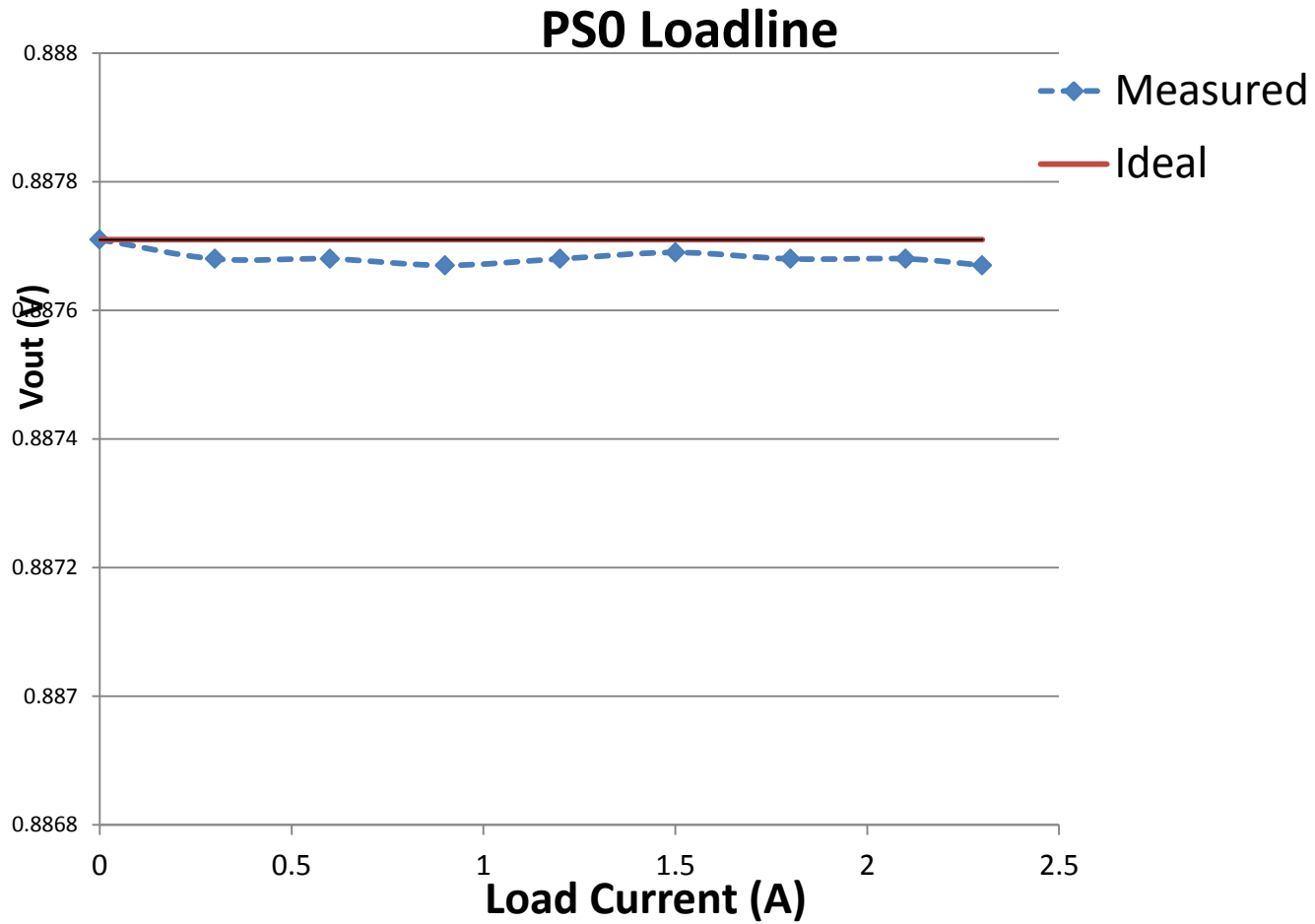
# Frequency Variation



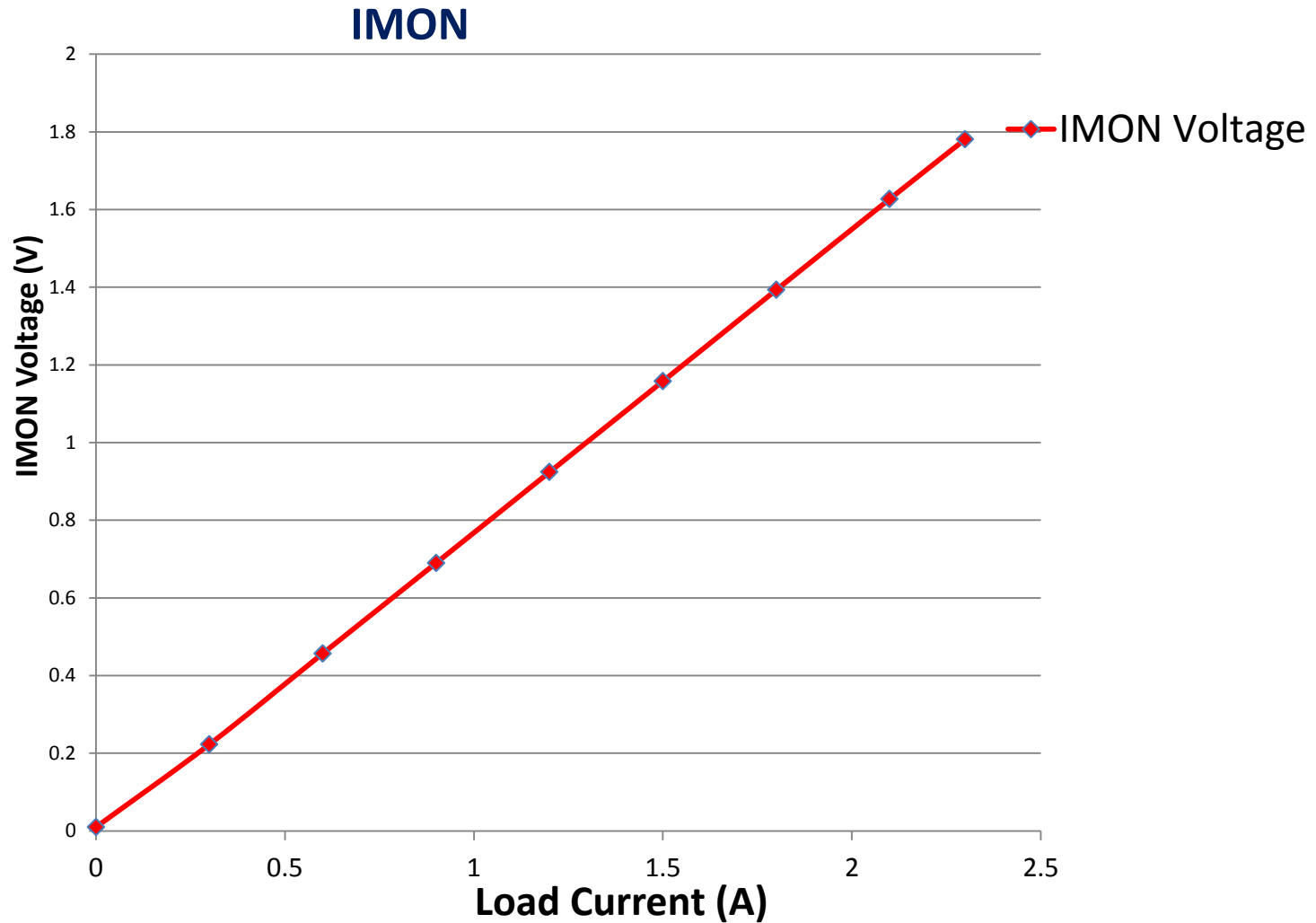
# PSO Efficiency



# Loadline

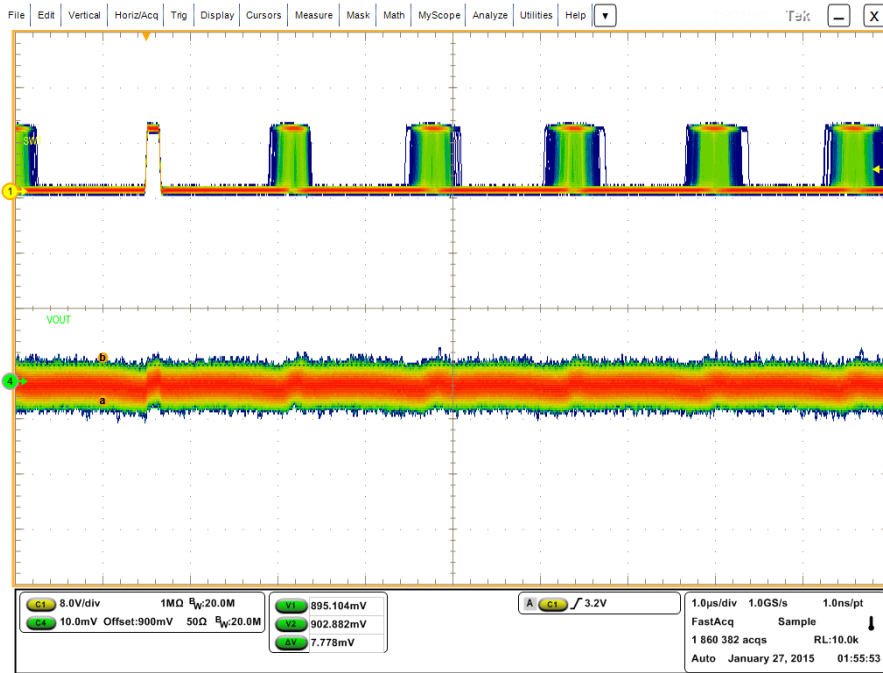


# Analog Current Monitor Output (IMON)



# Ripple and jitter

## Vin 9V



Load 0A  
Ripple: 7.8mV

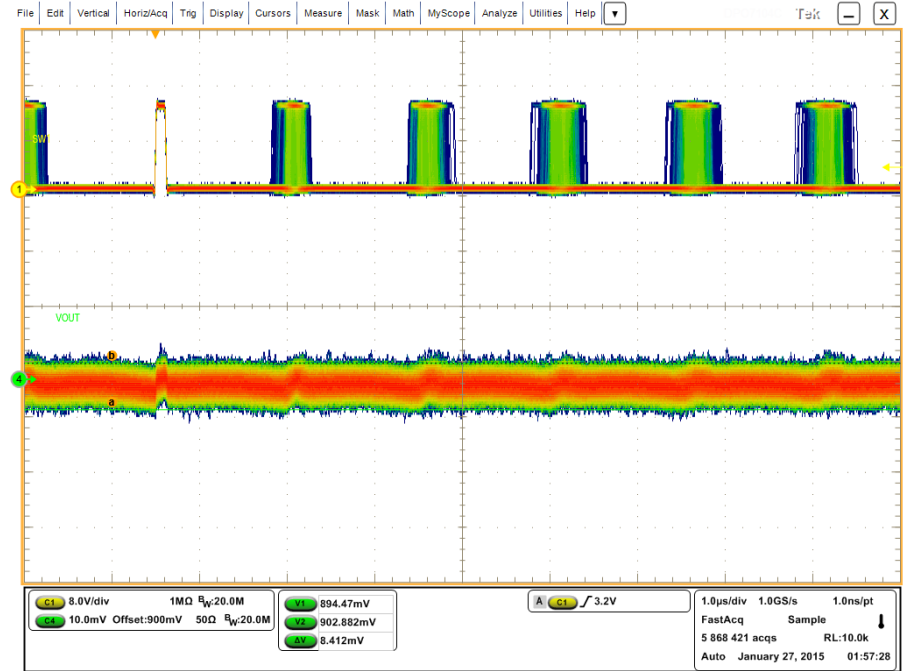


Load 2.3A  
Ripple: 8.1mV

# Ripple and jitter Vin 12V

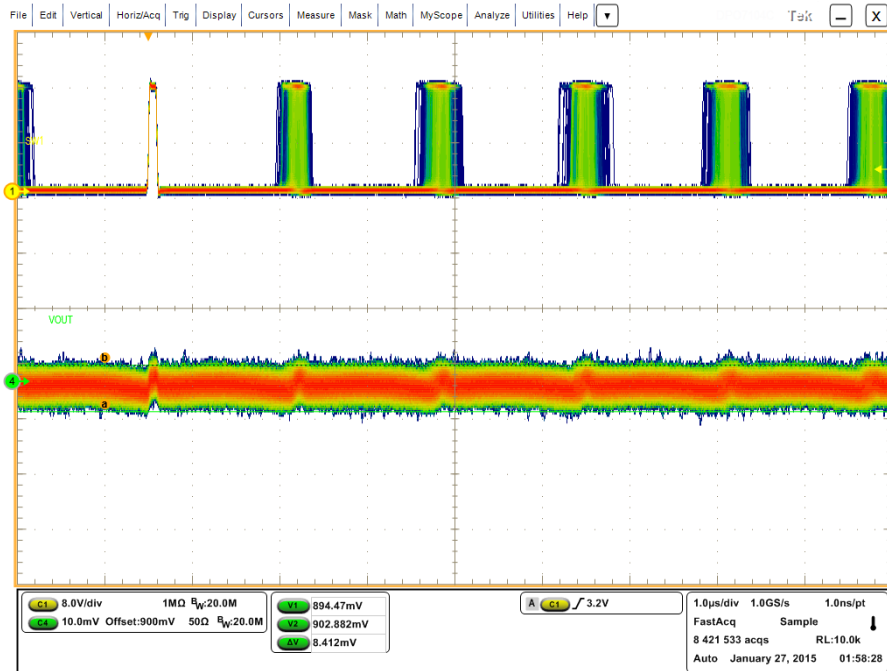


**Load 0A**  
**Ripple: 8.4mV**

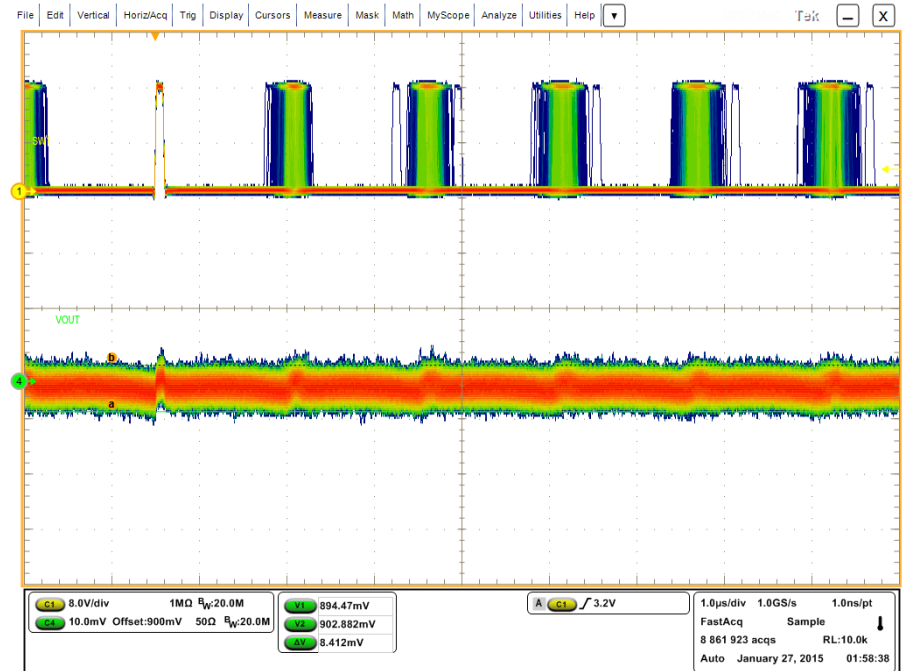


**Load 2.3A**  
**Ripple: 8.4mV**

# Ripple and jitter Vin 15V



**Load 0A**  
**Ripple: 8.4mV**



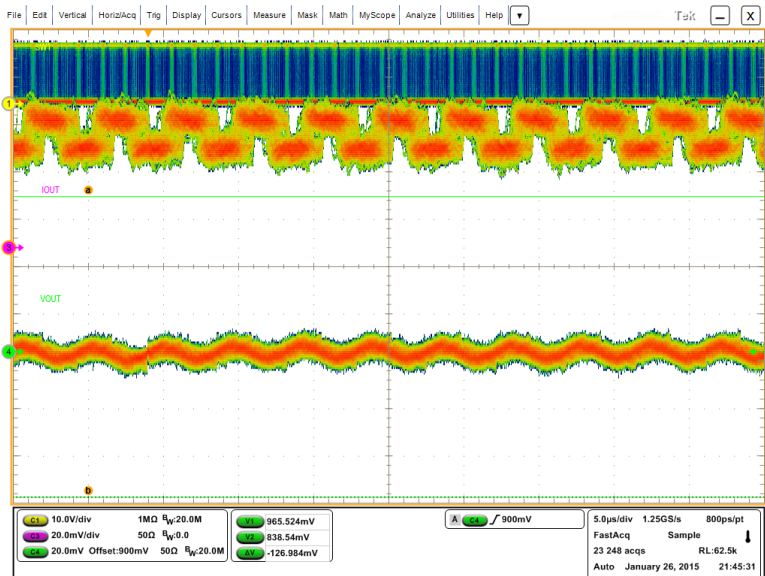
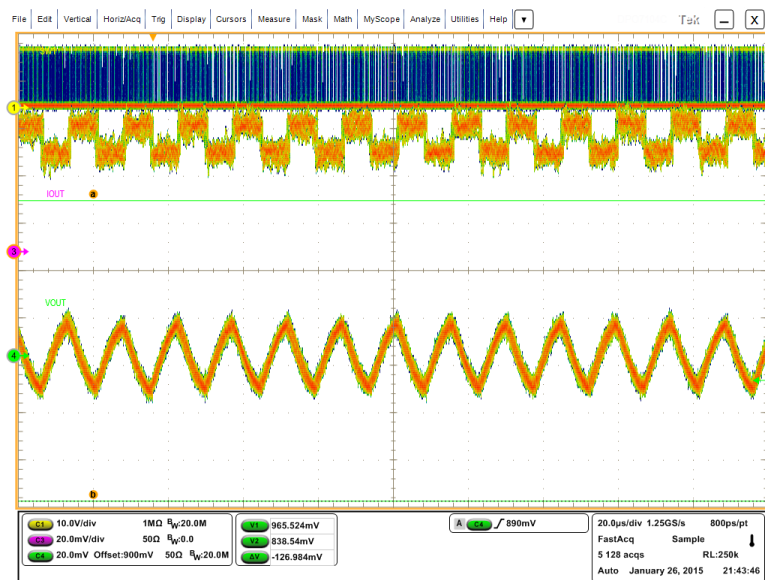
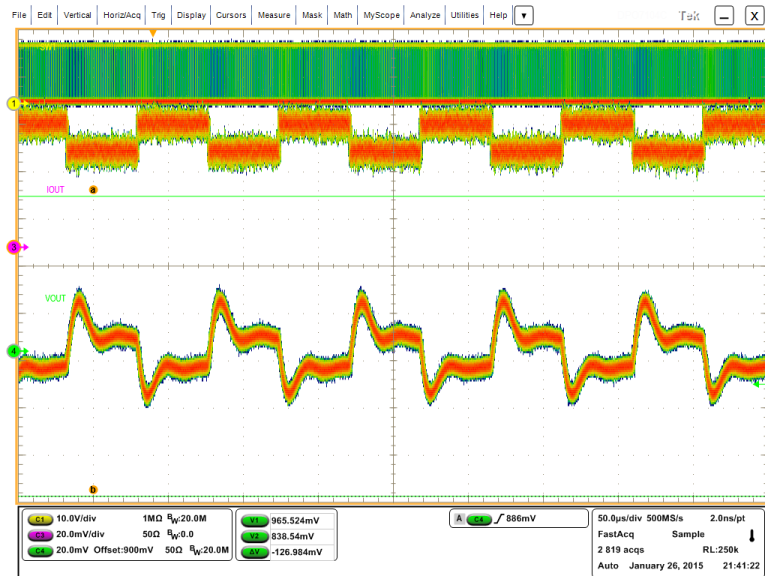
**Load 2.3A**  
**Ripple: 8.5mV**

# Load Transient Performance

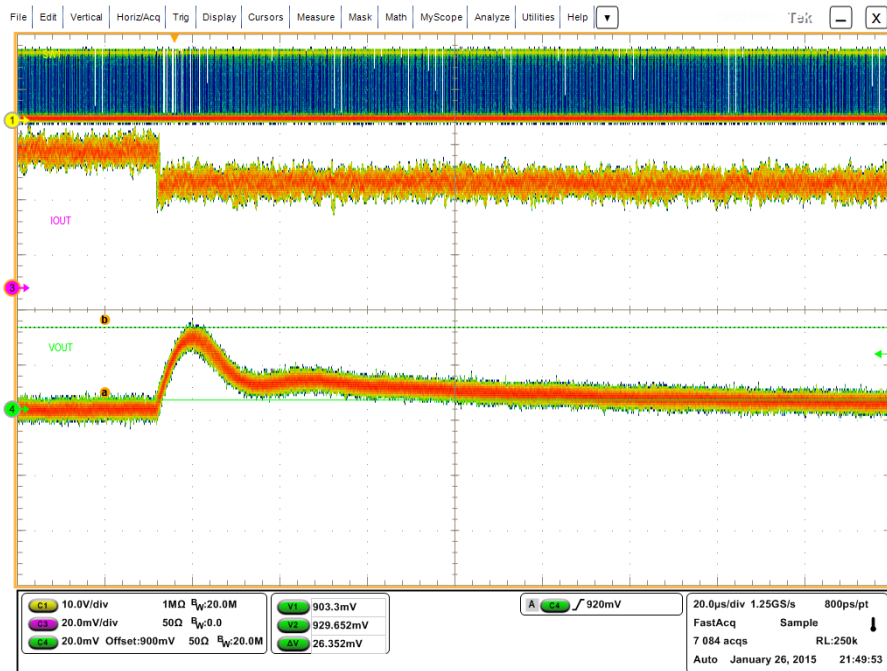
## 1A to 2A (PS0 state)- 50% duty cycle

DC and AC ripple guideline: +/-64mV

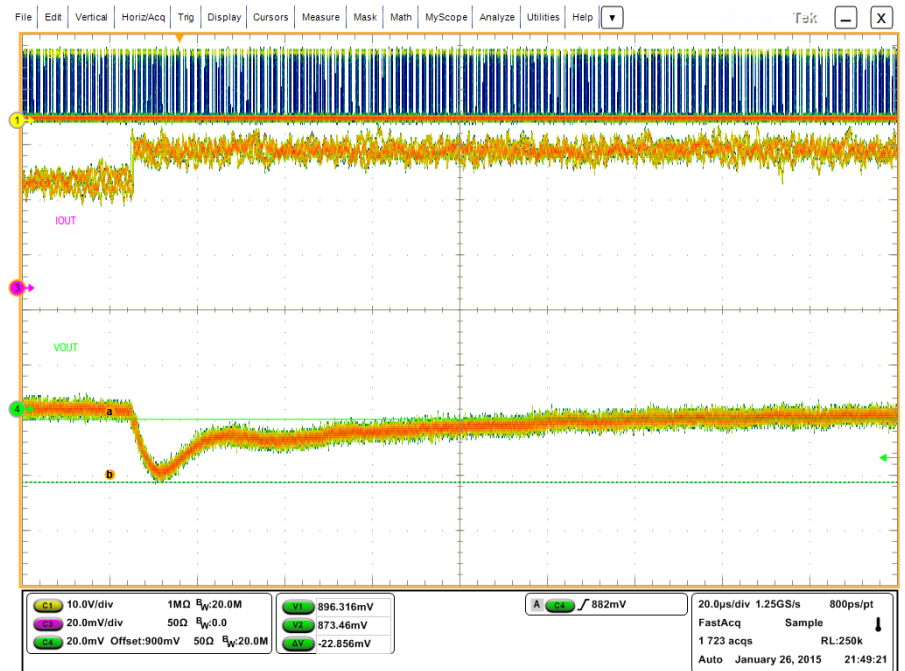




**Output Voltage waveform well within the +/-64 mV lines**



Load fall  
Overshoot: 26mV



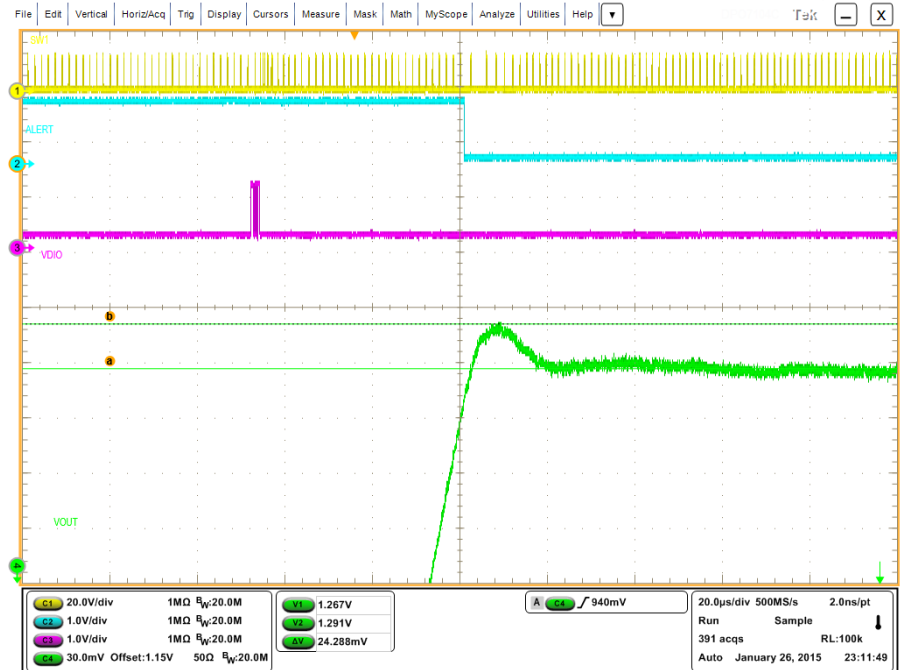
Load rise  
Droop: 23mV

# Dynamic VID

## 0.65V-1.24V Fast up 1A load



Rise Slew rate: 12.05 mV/us



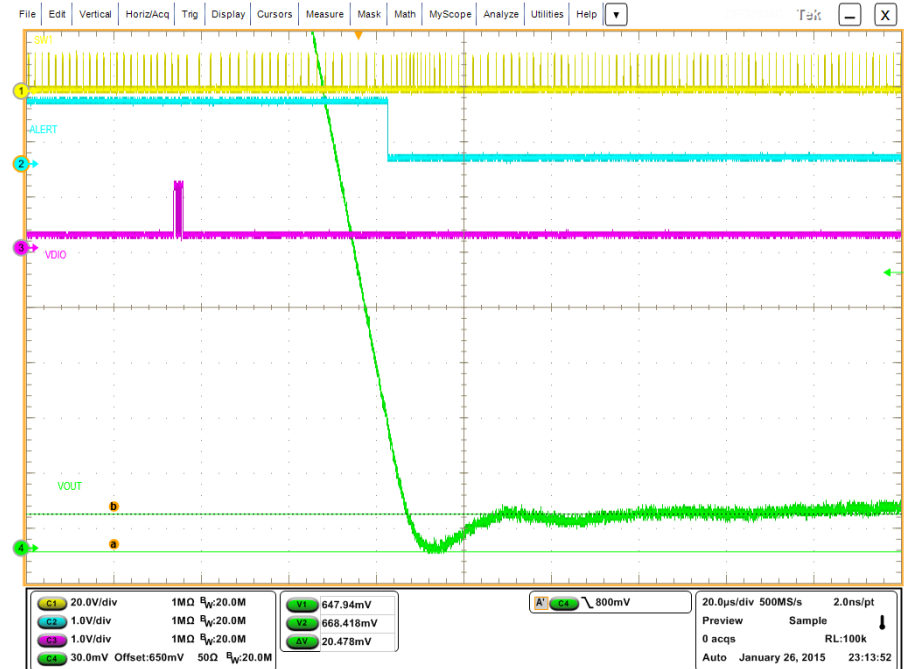
Overshoot: 24.3 mV

# Dynamic VID

## 0.65V-1.24V Fast Down 1A load



Fall Slew rate: 12.23 mV/us



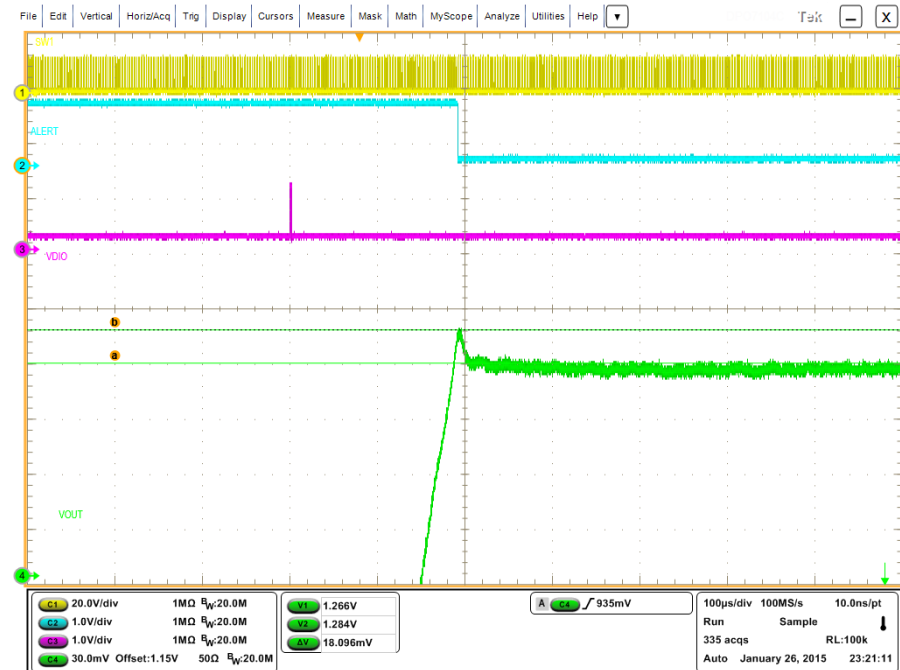
Droop: 20.5mV

# Dynamic VID

## 0.65V-1.24V Slow Up 1A load



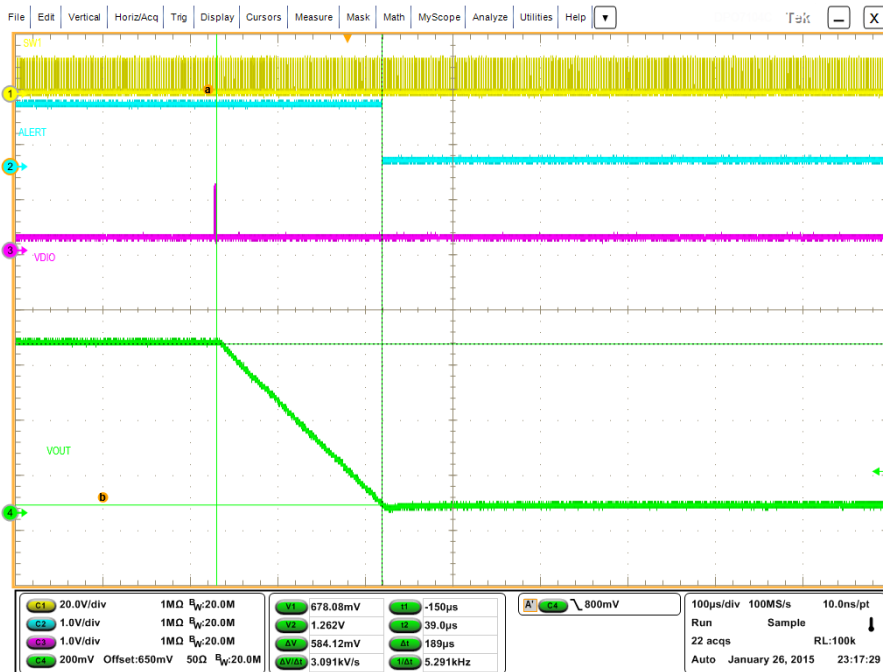
Rise Slew rate: 3.21mV/us



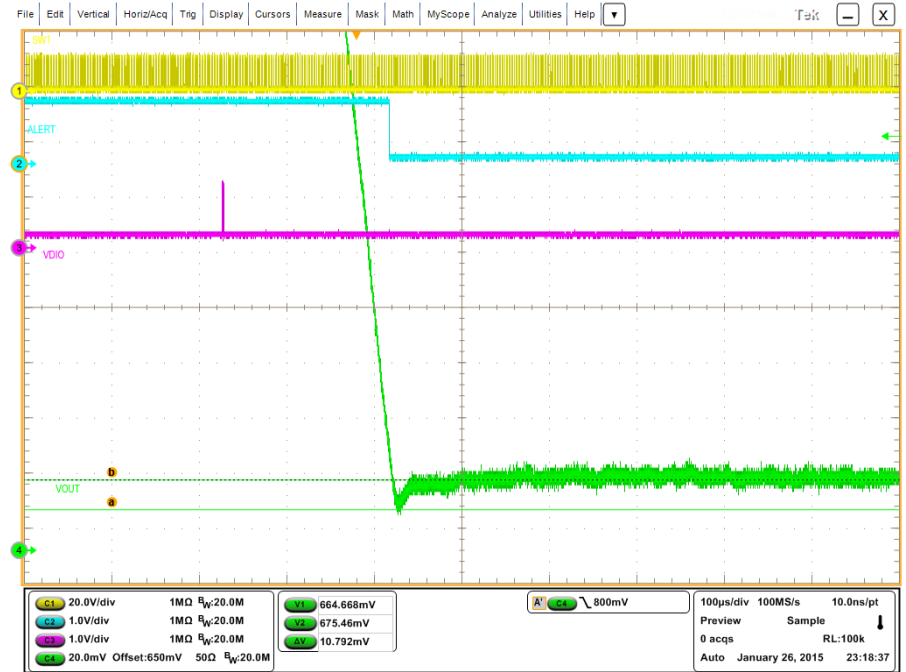
Overshoot: 18.1mV

# Dynamic VID

## 0.65V-1.24V Slow Down 1A load



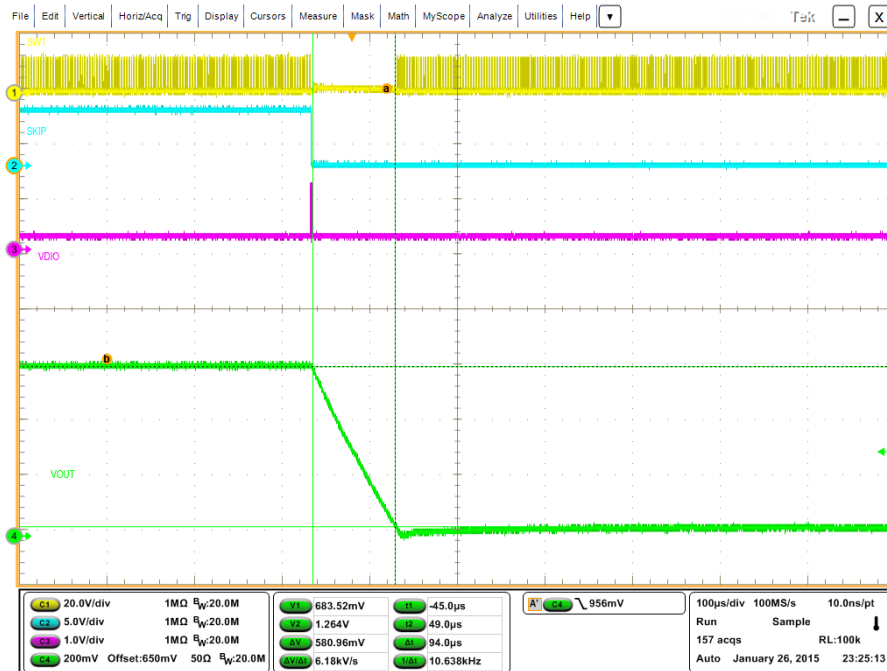
Fall Slew-rate: 3.1mV/us



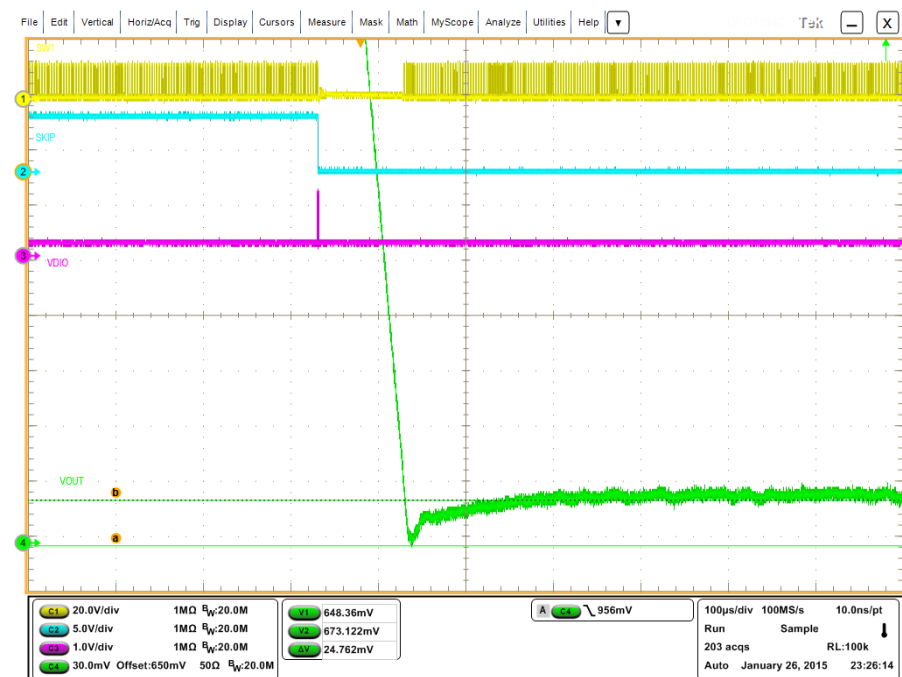
Droop: 10.8mV

# Dynamic VID

## 0.65V-1.24V Decay 1A load



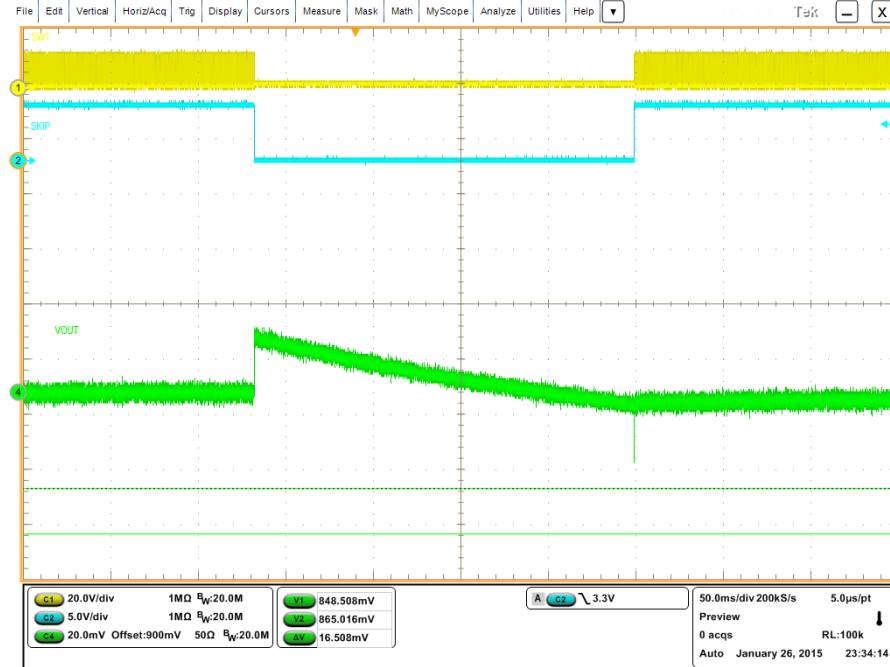
Decay Slew-rate: 6.1mV/us



Droop: 24.8 mV

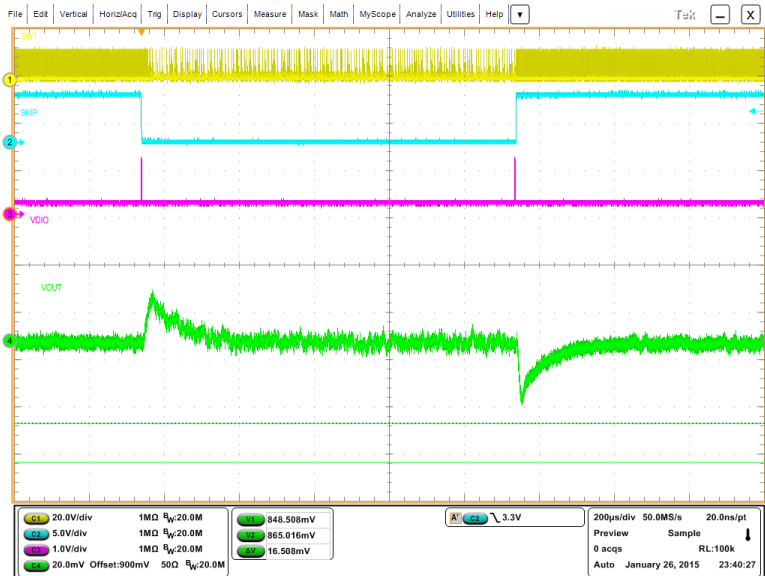
# PS transition

## PS0-PS2 0A load



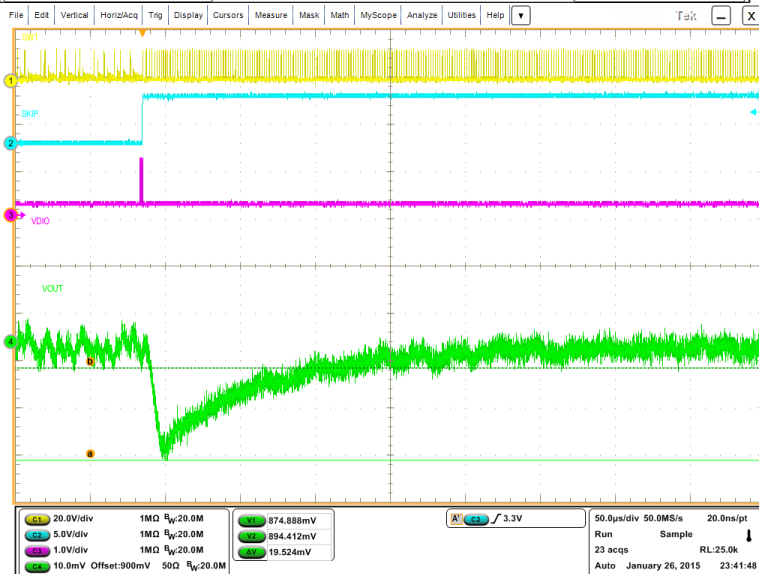
# PS transition

## PS0-PS2 0.1A load

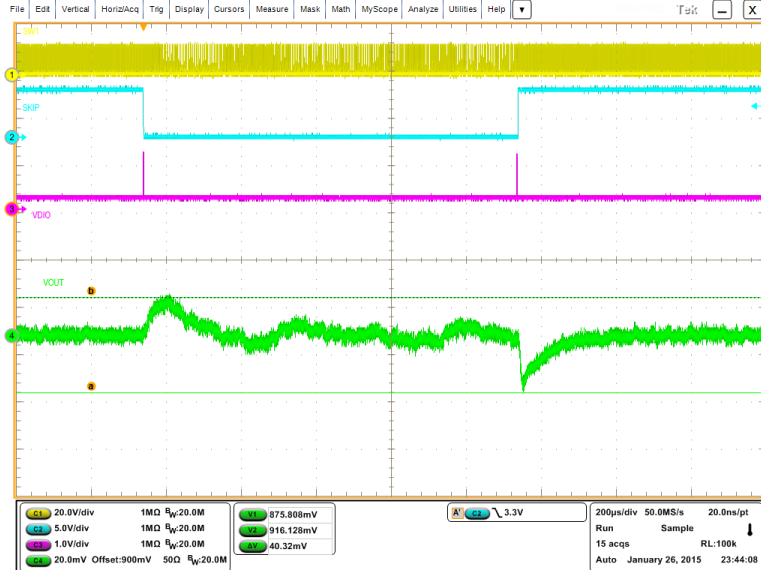


PS0 to PS2 voltage change: 17mV

PS2 to PS0 voltage change: 19mV

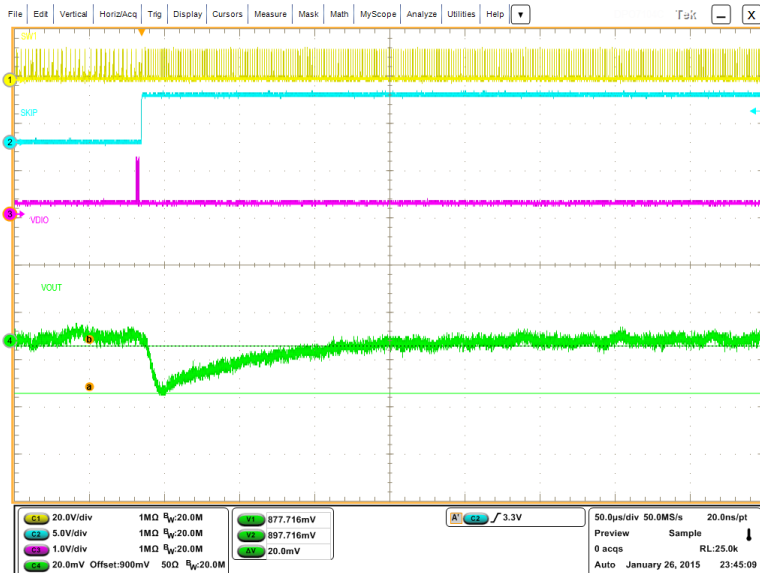


# PS transition PS0-PS2 0.2A load



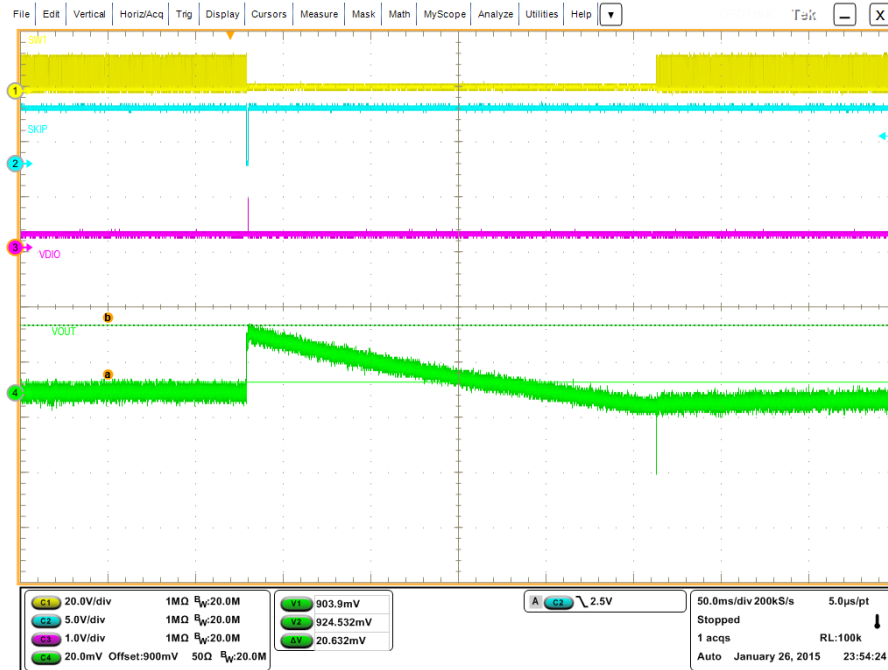
PS0 to PS2 voltage change: 12mV

PS0 to PS2 voltage change: 20mV



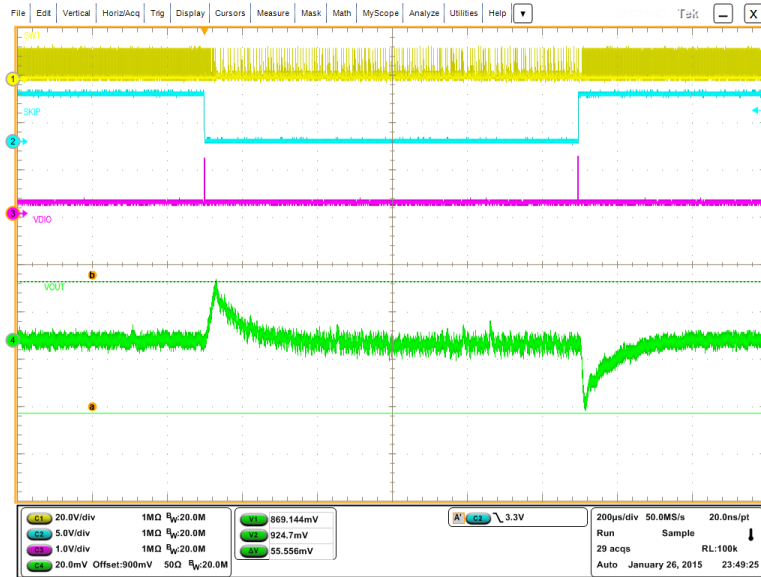
# PS transition

## PS0-PS3 0A load

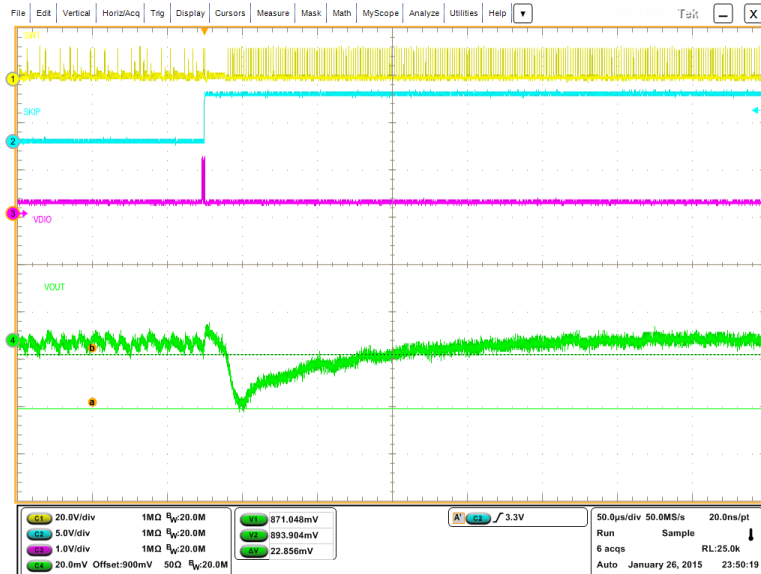


# PS transition

## PS0-PS3 0.1A load



PS0 to PS3 voltage change: 22.2mV



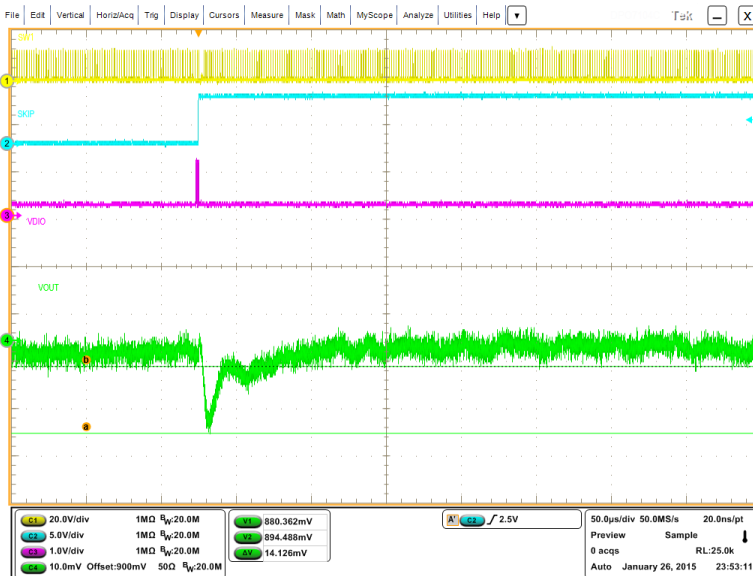
PS3 to PS0 voltage change: 22.8mV

# PS transition PS0-PS3 0.5A load



PS0 to PS3 voltage change: 6.7mV

PS3 to PS0 voltage change: 14mV





PS0-PS3 droop: 4.4mV



PS3-PS0 droop: 4.6mV

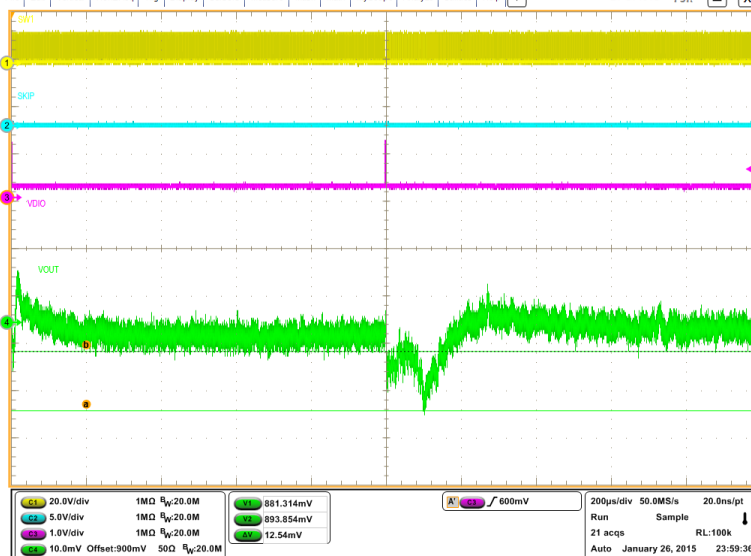
# PS transition

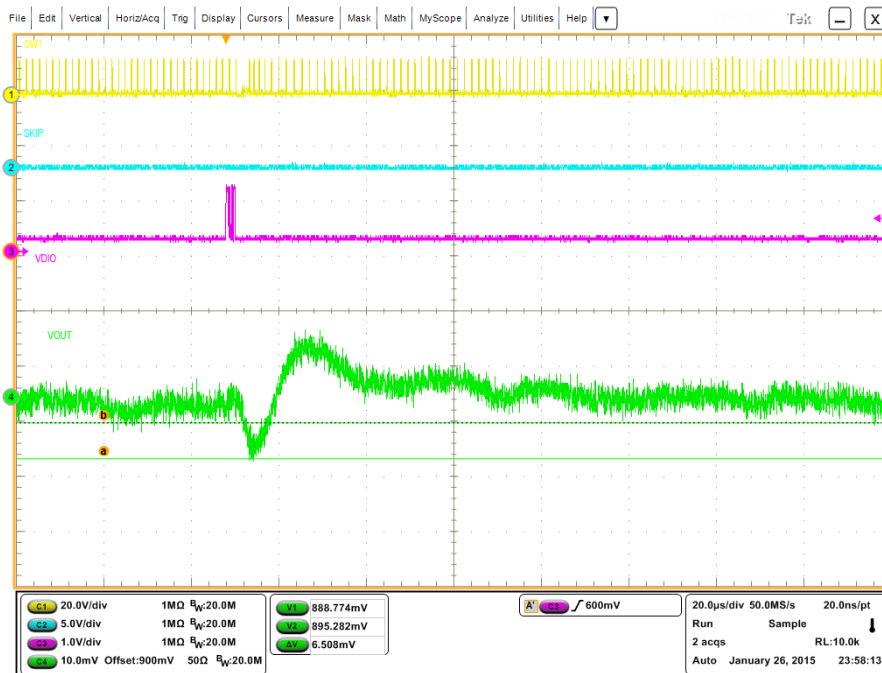
## PS2-PS3 0.5A load



PS2 to PS3 voltage change: 9.3mV

PS3 to PS2 voltage change: 12.5mV





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