UCD3138 1/8th Brick Test Report

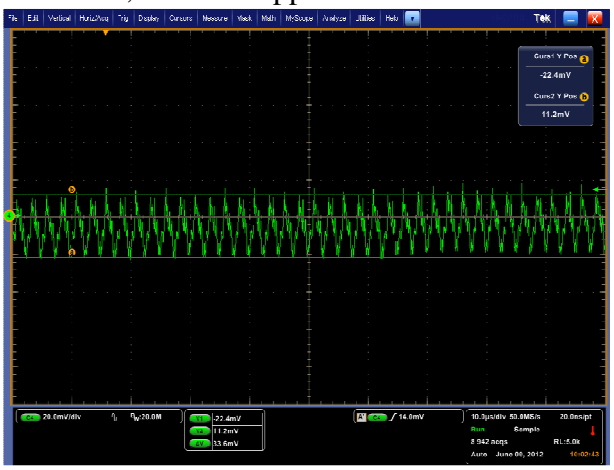
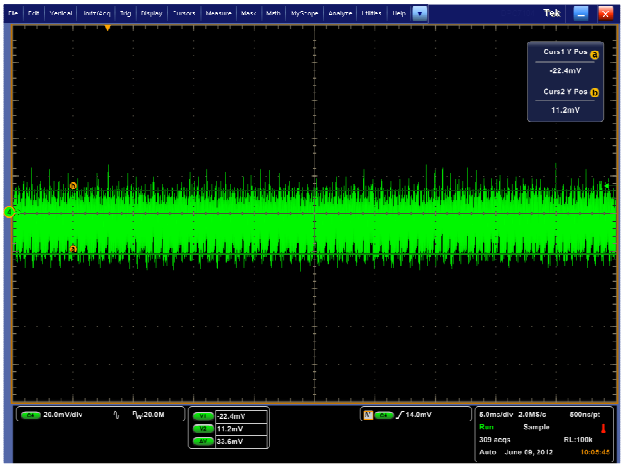
1.1 Transient Load

1A~11A step load, 1A/us slew rate, **without oversampling**
320mV overshoot, 346mV undershoot. Recover time: overshoot: 220us; undershoot: 410us

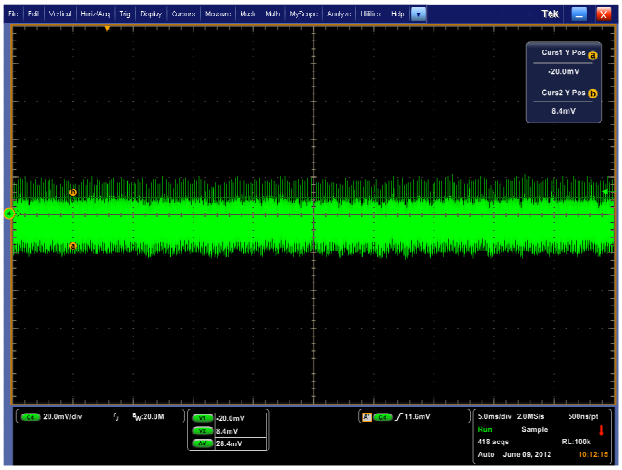
1A~11A step load, 1A/us slew rate, **x2 oversampling**
320mV overshoot, 346mV undershoot. Recover time: overshoot: 170us; undershoot: 330us

1.2 Output Ripple

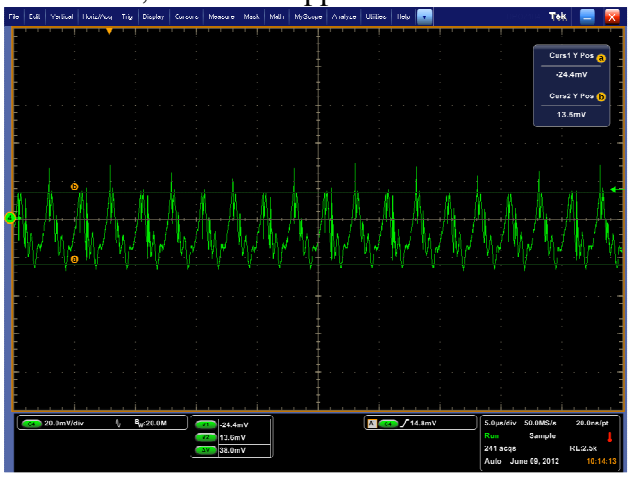
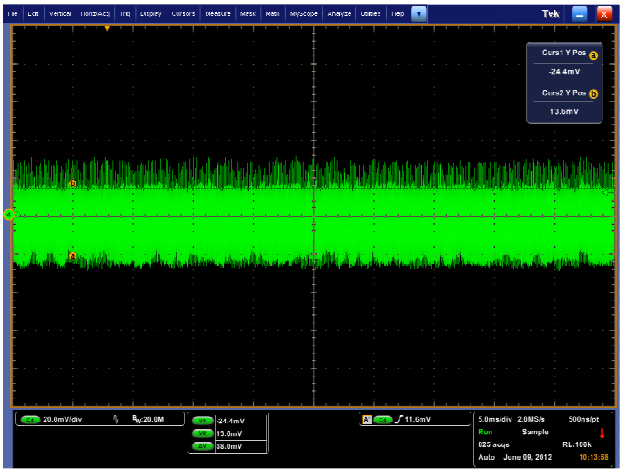
Vin=48V, Io=0A /Ripple=33.6mV

Vin=48V, Io=10A /Ripple=28mV

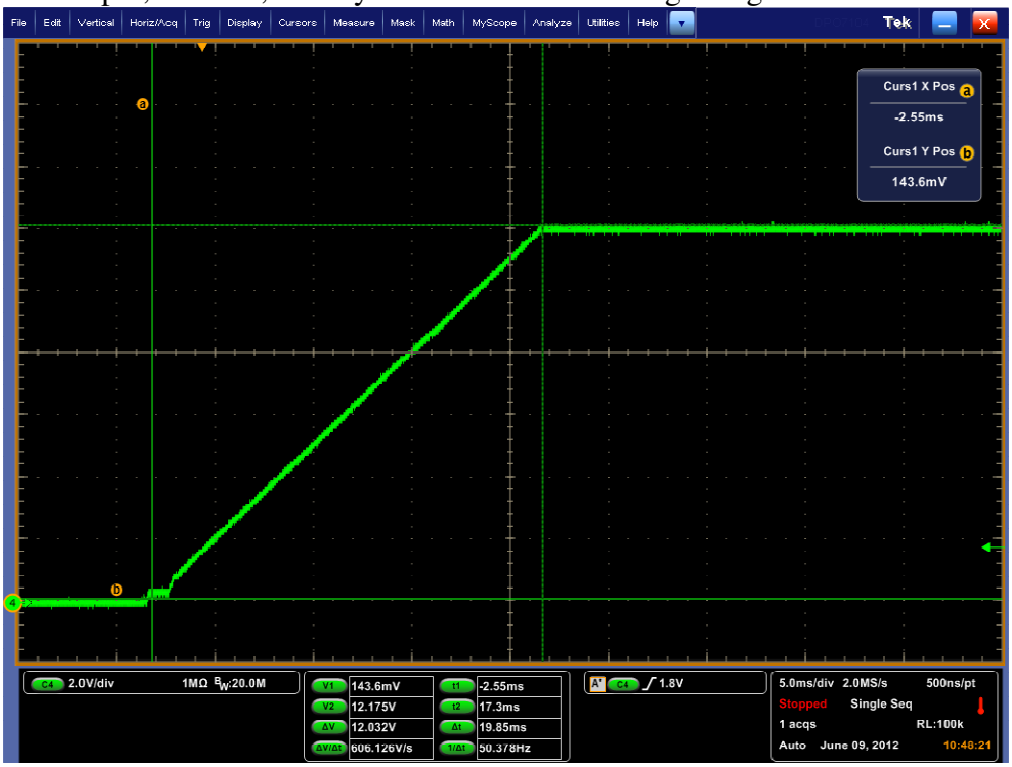



Vin=48V, Io=15A /Ripple=38mV

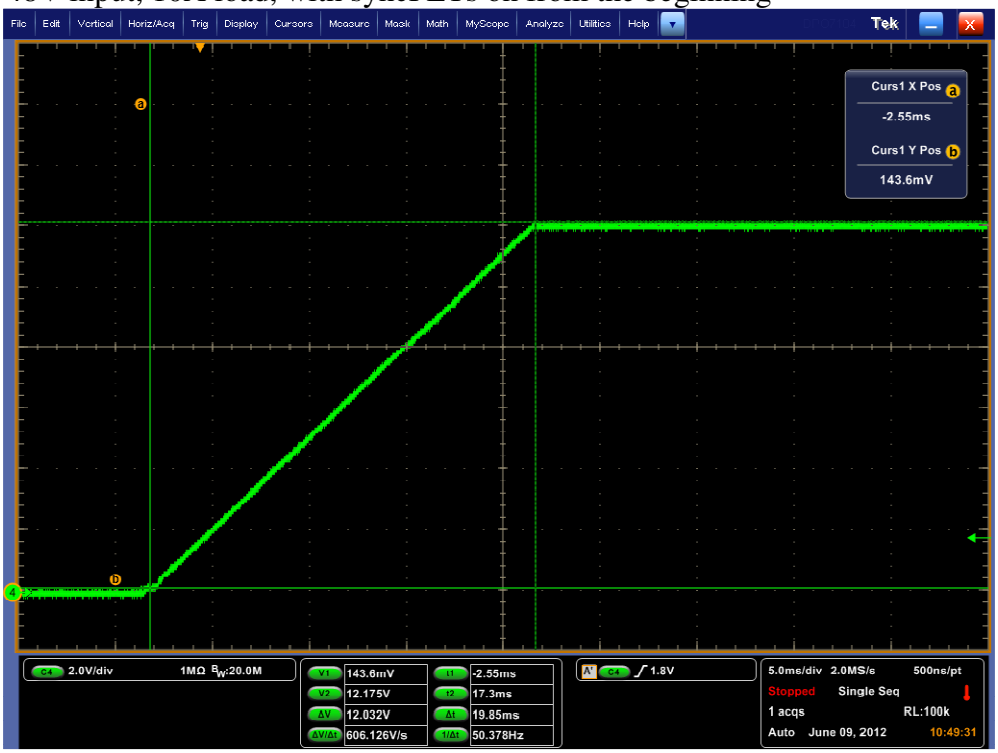



1.3 Soft start

Soft start at 48V input, 0A load, with syncFETs on from the beginning

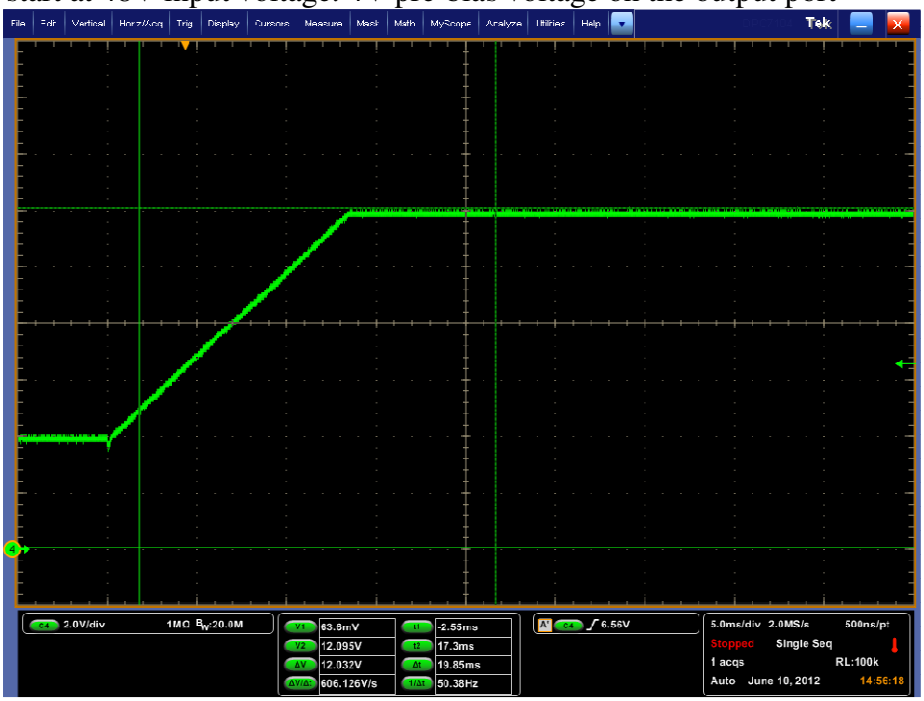


Soft start at 48V input, 10A load, with syncFETs on from the beginning

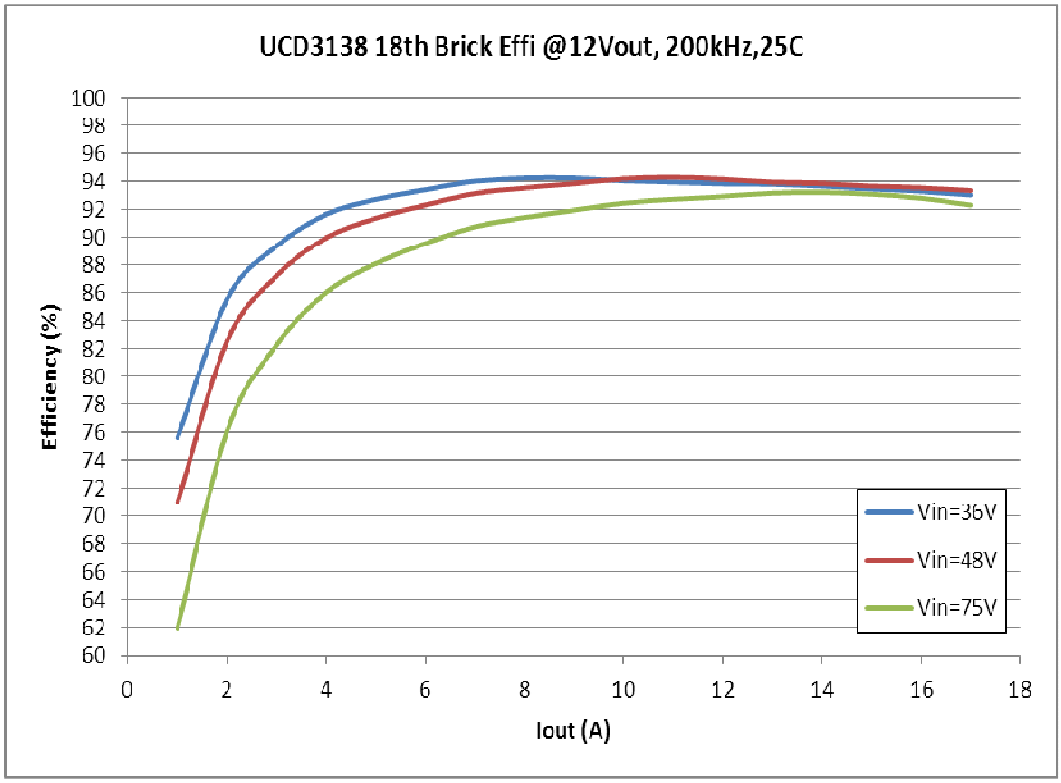


1.4 Pre-bias Start-up

Pre-bias soft start at 48V input voltage. 4V pre-bias voltage on the output port

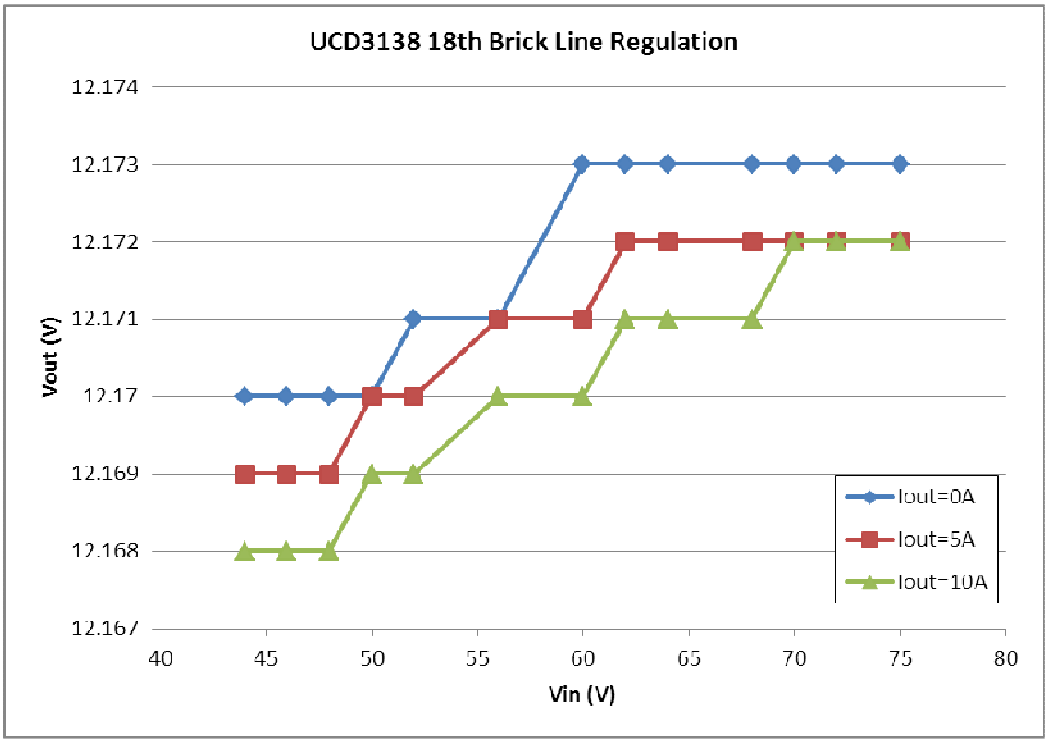


1.5 Efficiency

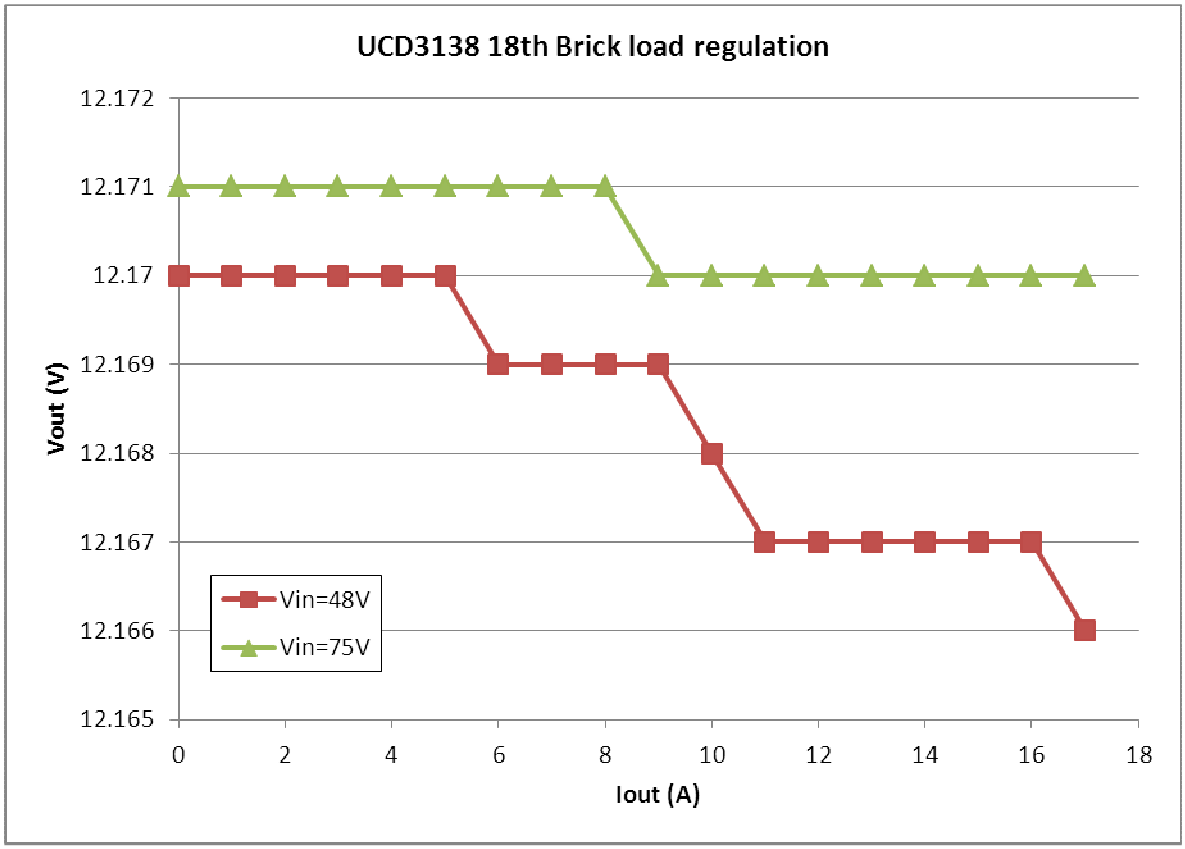


94.3% @ 11A load

1.6 Line Regulation



1.7 Load Regulation



1.8 Constant Power Constant Current (CPCC)

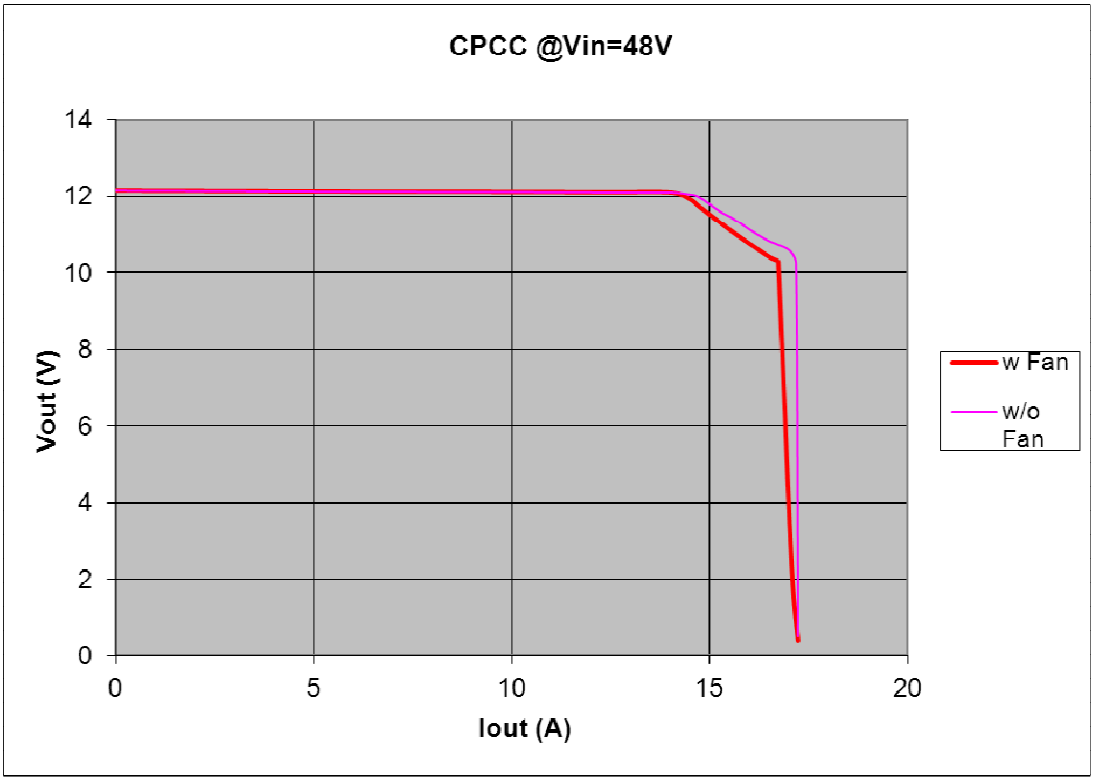


Figure 1 Constant Power Constant Current Test

1.9 Surge Test

Load 1A, Vin from 40V~60V, Vin slew rate 30.4V/2.36us.
KP_COEFF_1 = 8000, KP_COEFF_2 = 10000
Vout variation 760mV, recover time 80us

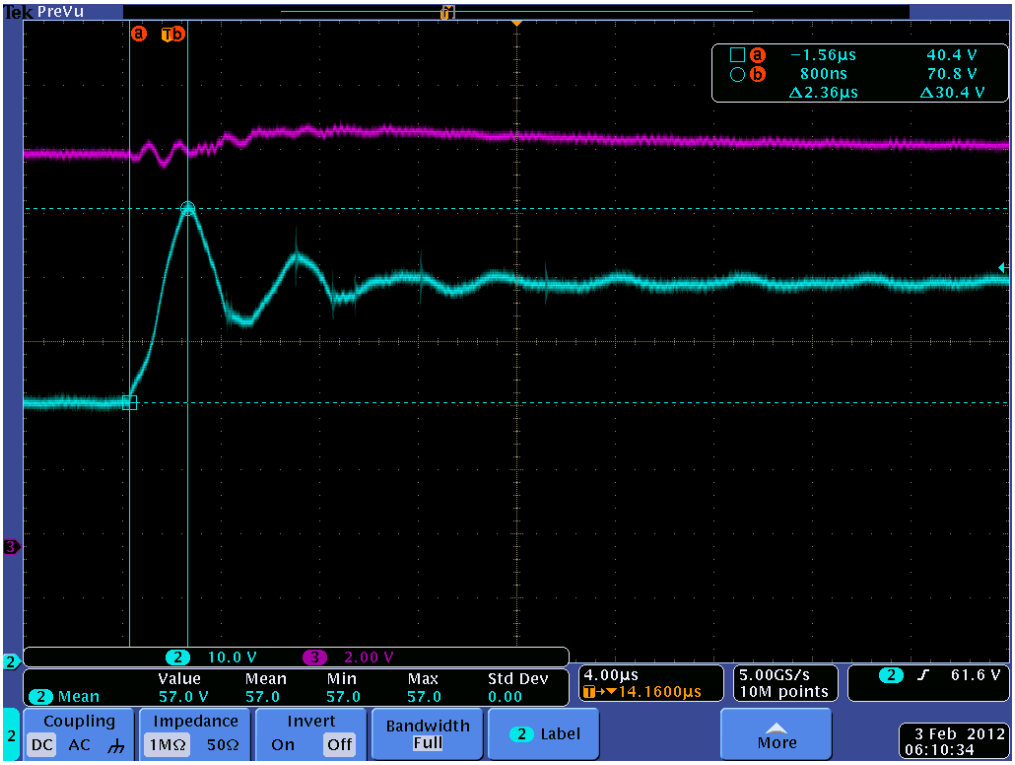


Figure 2 Surge Test

1.10 Current sharing Accuracy

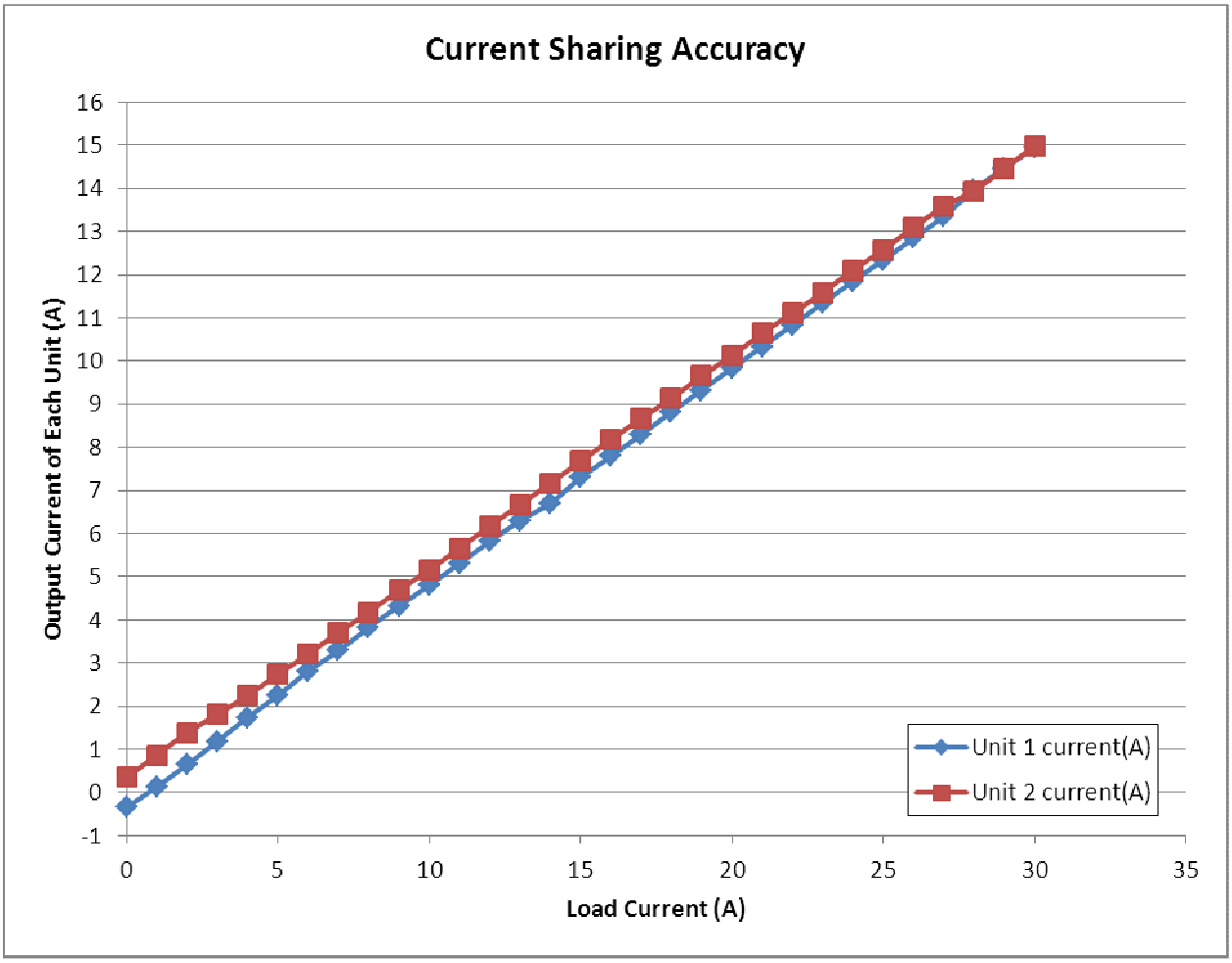


Figure 3 Current Sharing Accuracy

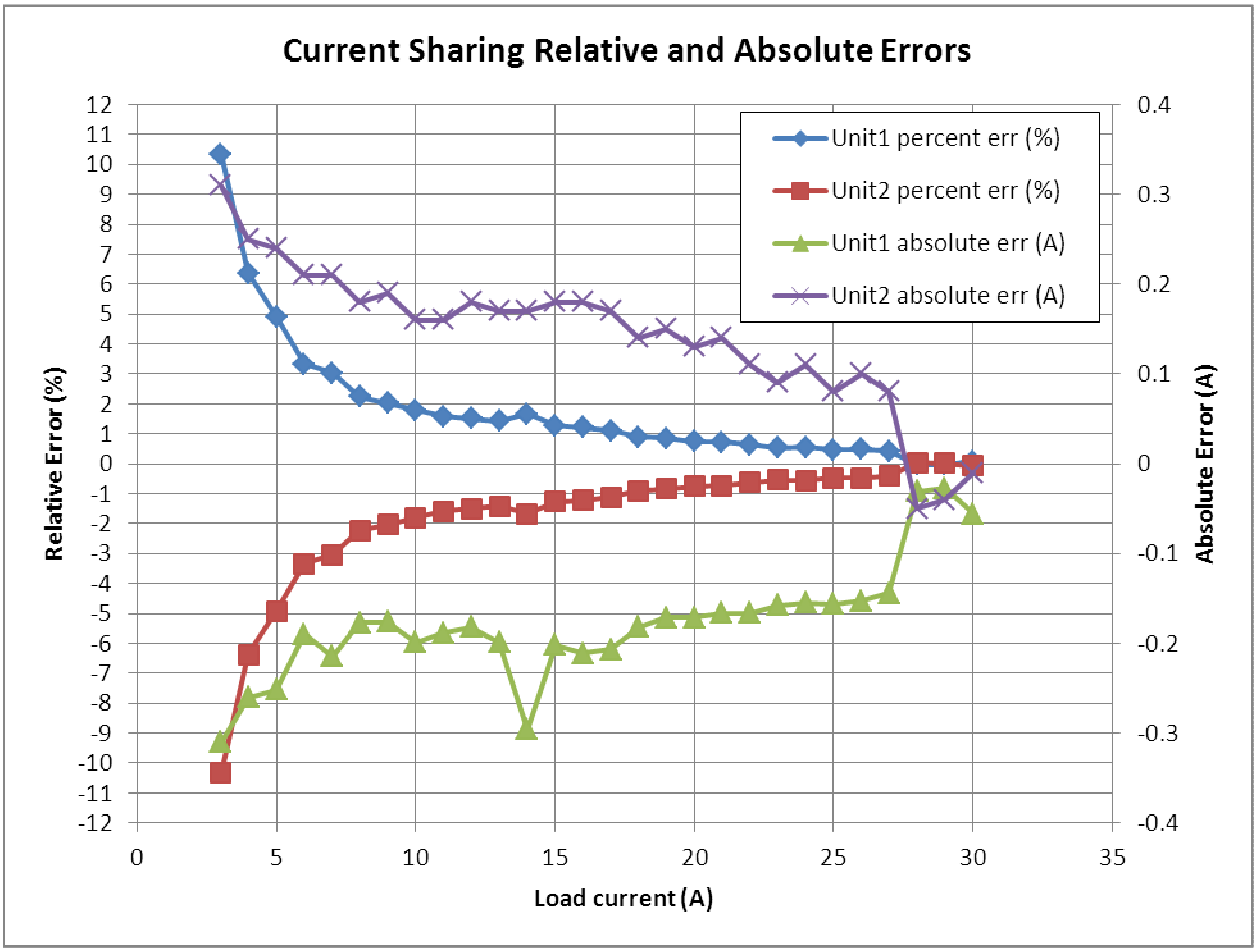


Figure 4 Current Sharing Relative and Absolute Errors

1.11 Copper Trace Current Sensing Accuracy

The measured copper trace current sending absolute error is -0.4A~0.6A. (Tested with temperature compensation only.)

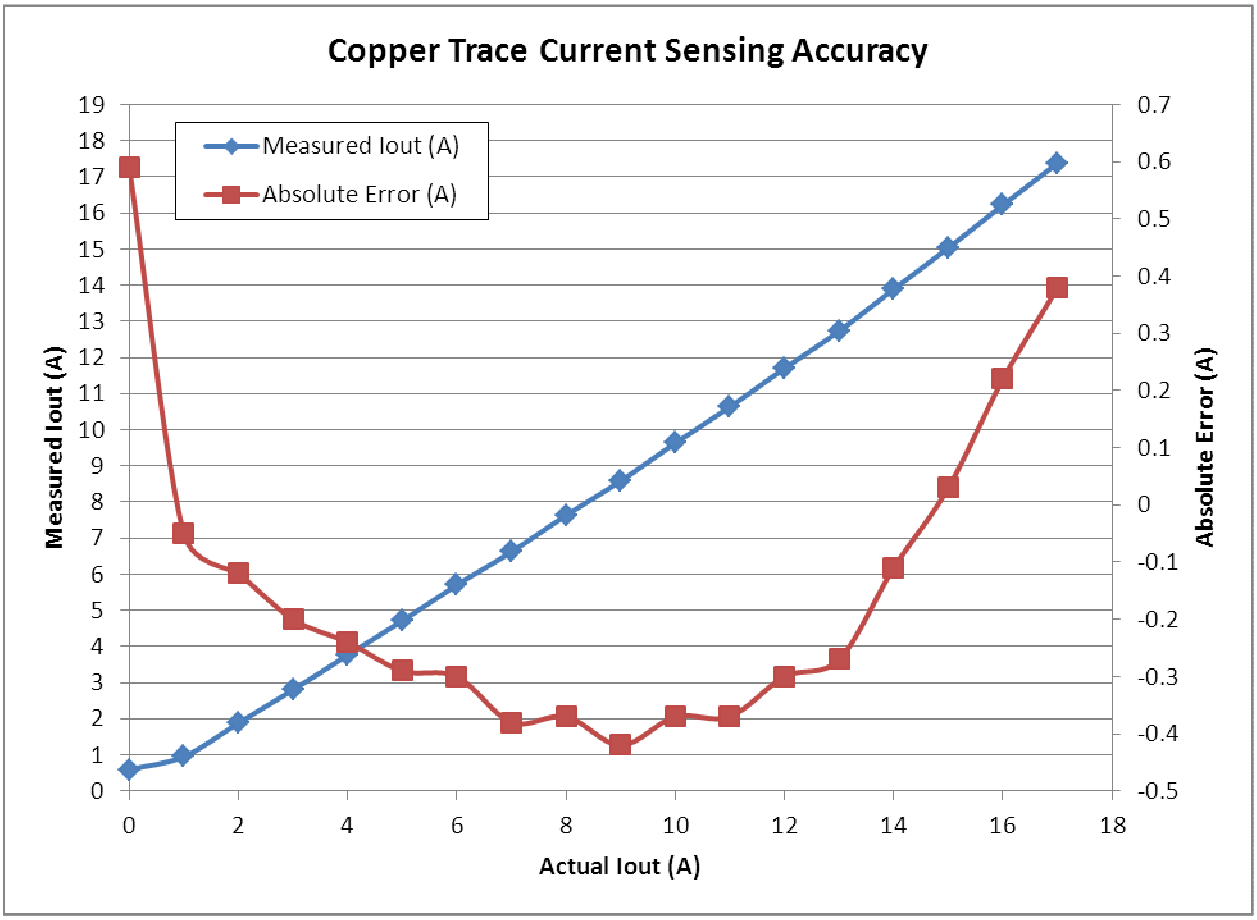


Figure 5 Copper Trace Current Sensing Accuracy

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