芯高科技
HIGH TECH
TECHNOLOGY LIMITED

HT3328
(Suez 1p3)

Characterization Report

2022/06/17 Internal Use Only

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HT3328

- Part No. : HT3328
- Version: Suez1p3
- Package: QFN32 5mm x 5mm
- Features
  - Dual channel
  - External HS & LS power FET Driver
  - Over Current Protection
  - Over Voltage Protection
  - Internal Vref
  - I2C Control

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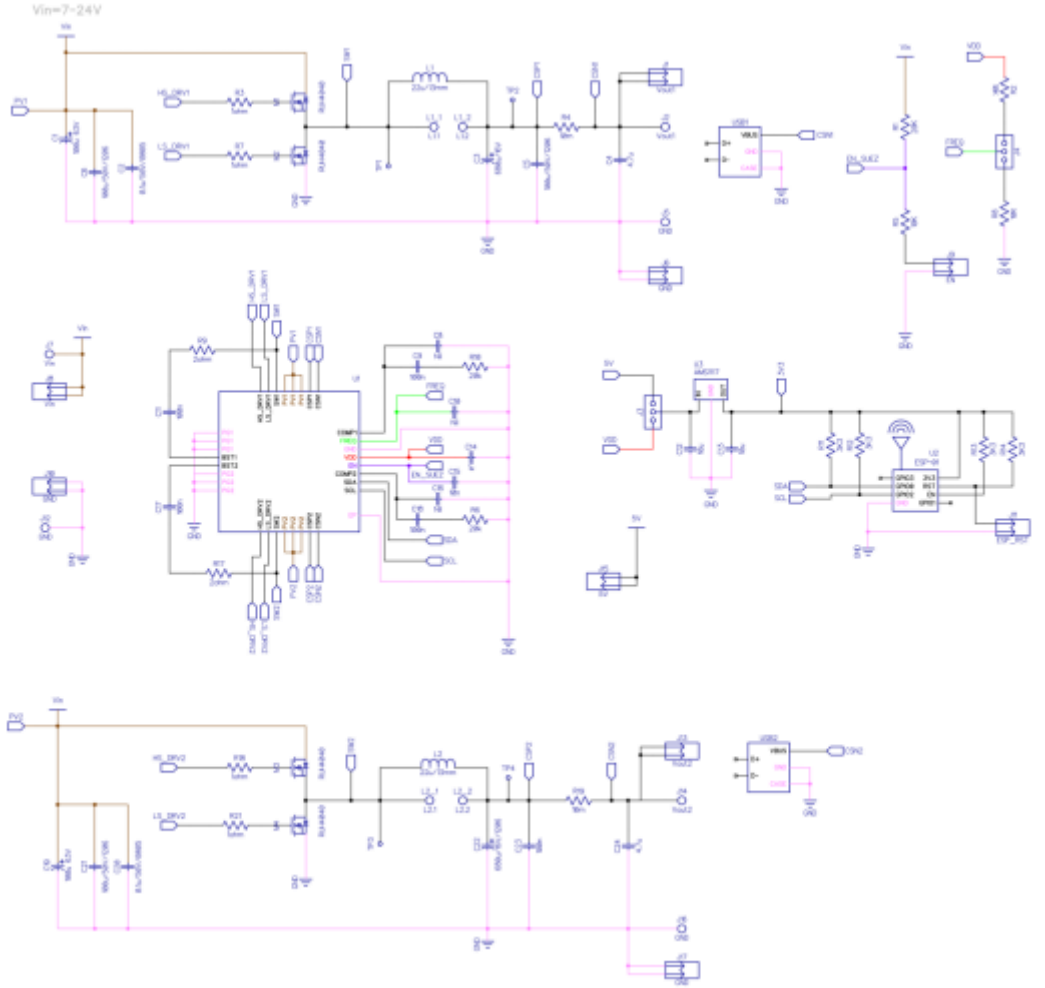
Evaluation Board – CV Out

Version: HT3328_R01



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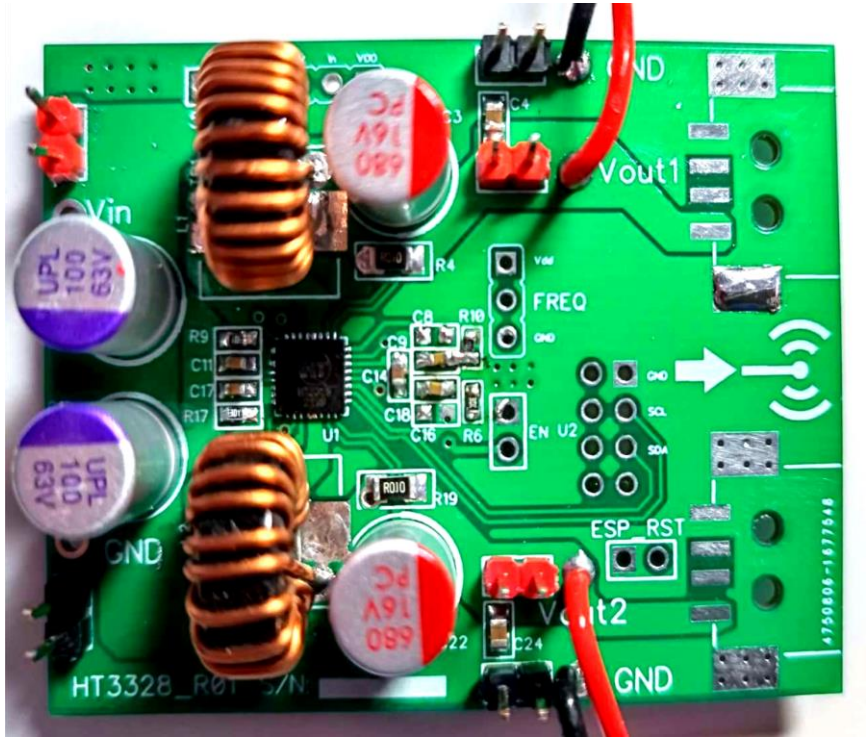
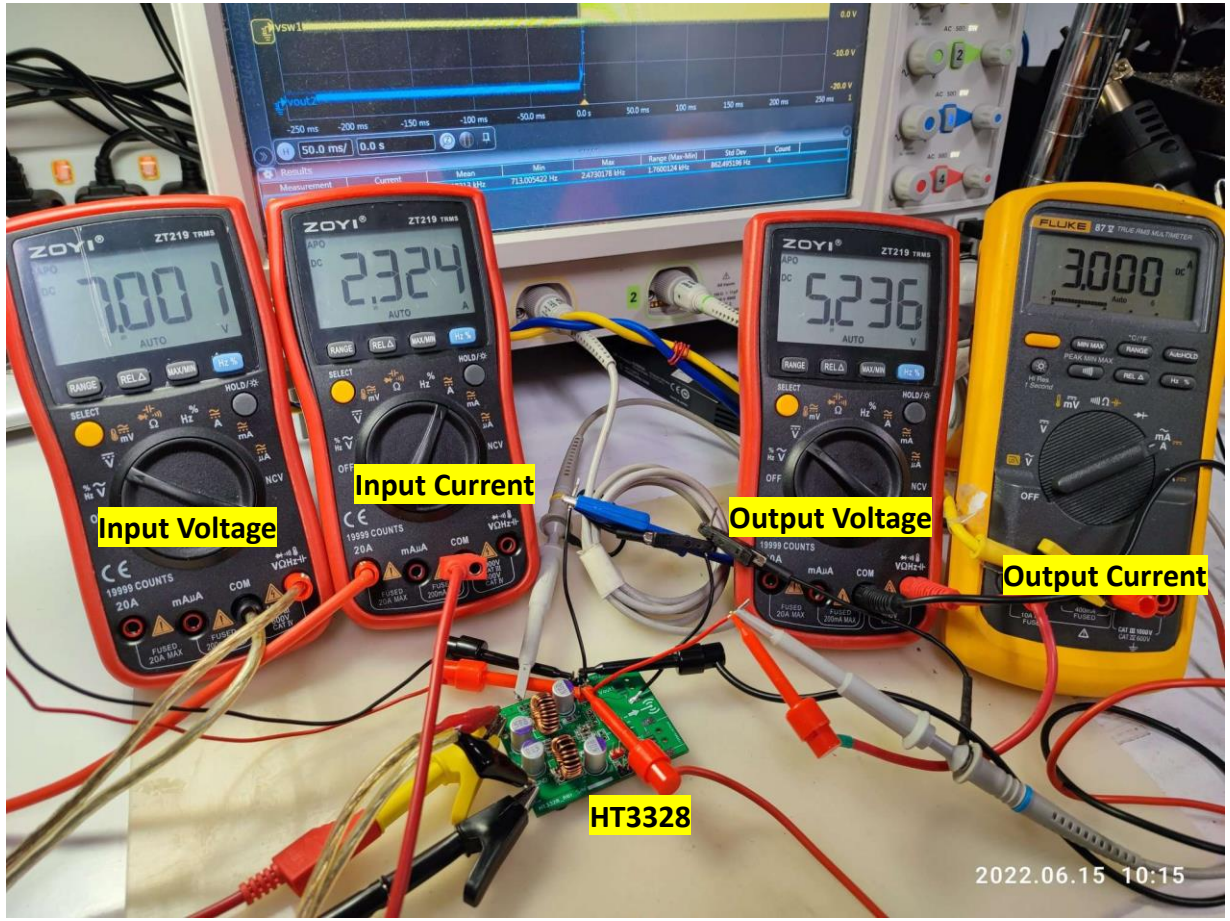
Evaluation Board

- Test condition (CV out)
  - Vin = 7-30V,
  - Vout = 5V
  - Iout = 0-3A
  - L = 22uH
  - Cout = 680uF
  - COMP =20k + 100nF
  - Fsw = 180 kHz (Z)
  - FREQ = Z



Measurement Setup



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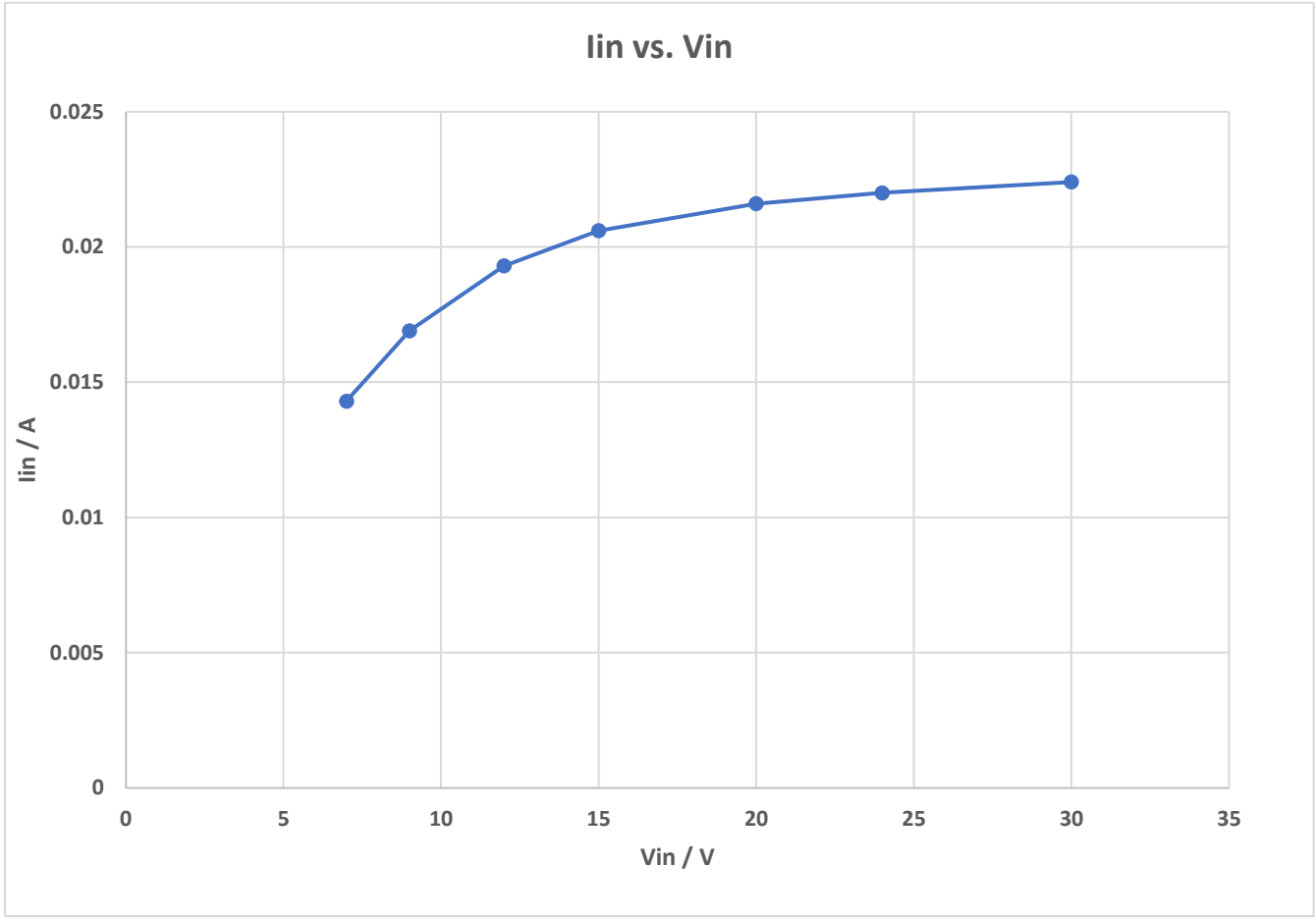
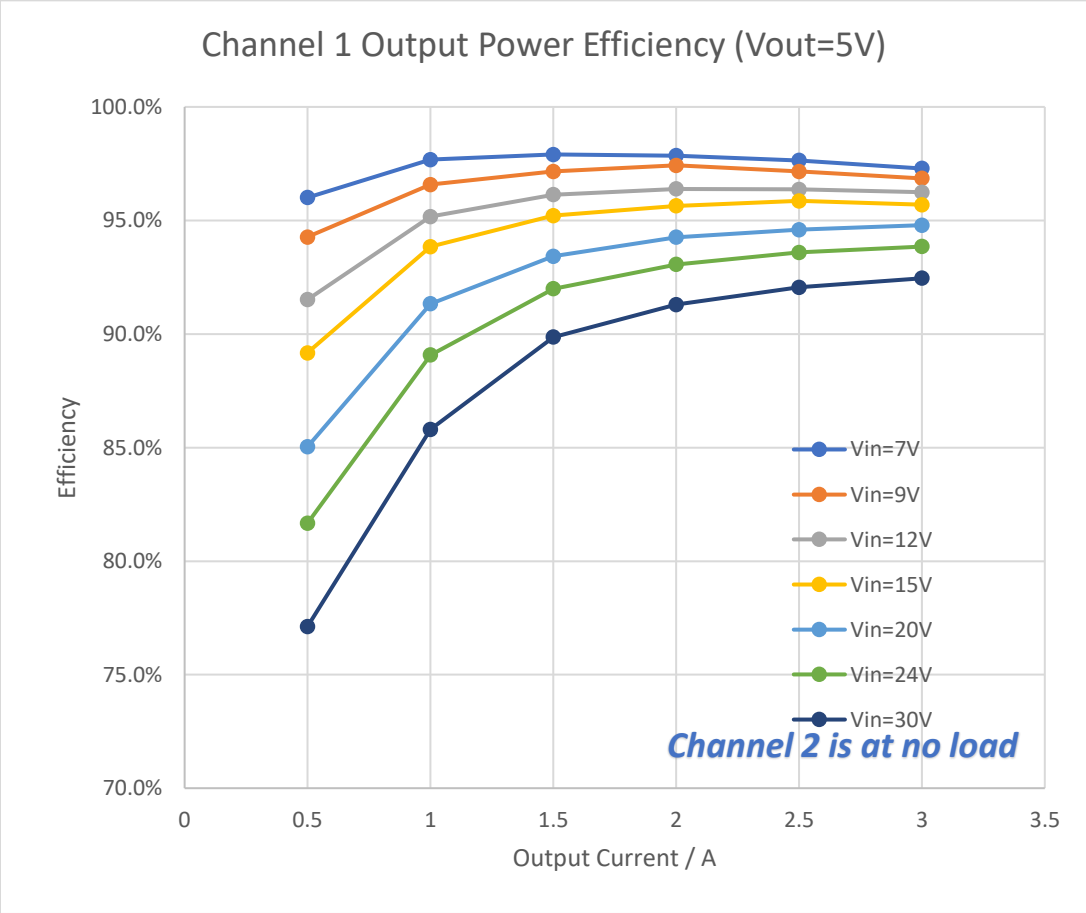
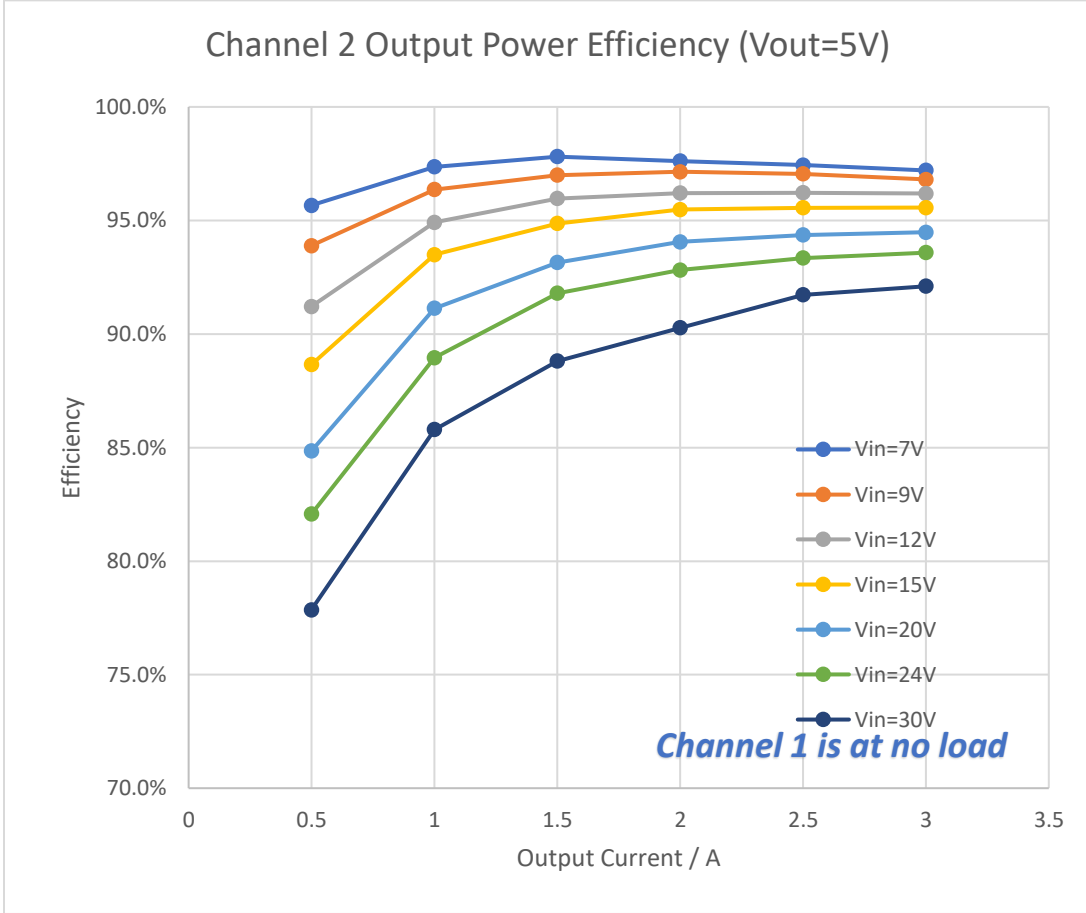
Measurement – Quiescent Current at both channels output no loading

Vin /V	Iin /A
7	0.0143
9	0.0169
12	0.0193
15	0.0206
20	0.0216
24	0.022
30	0.0224

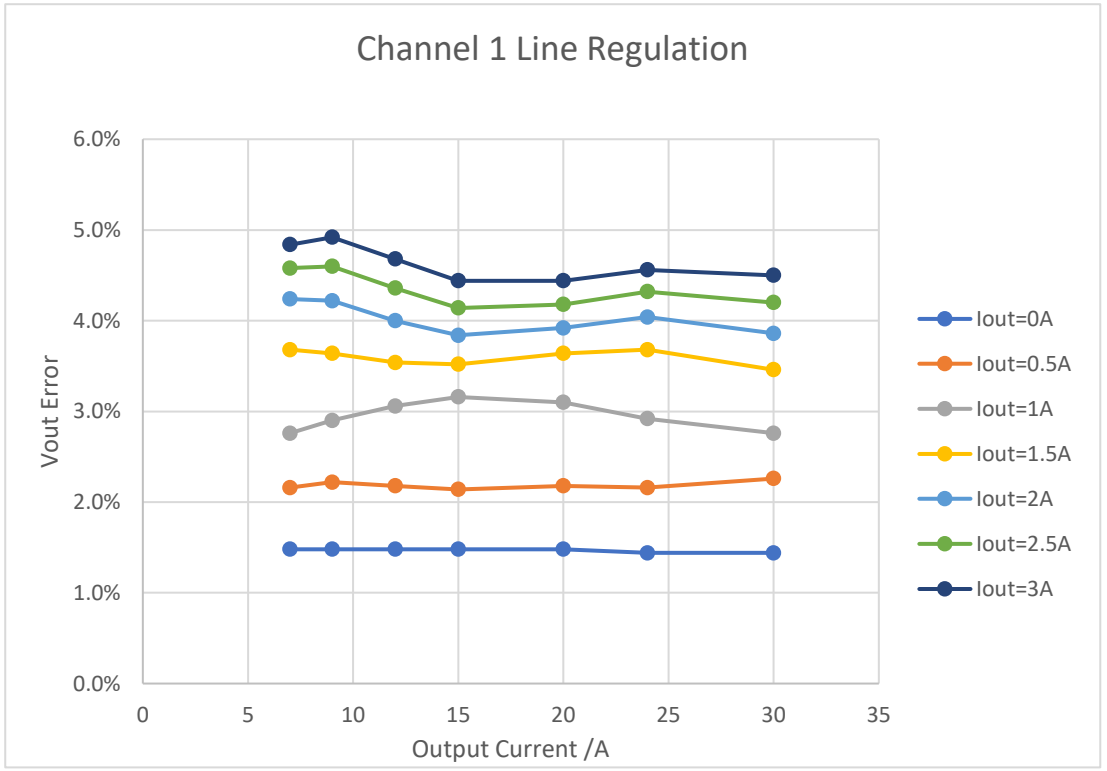


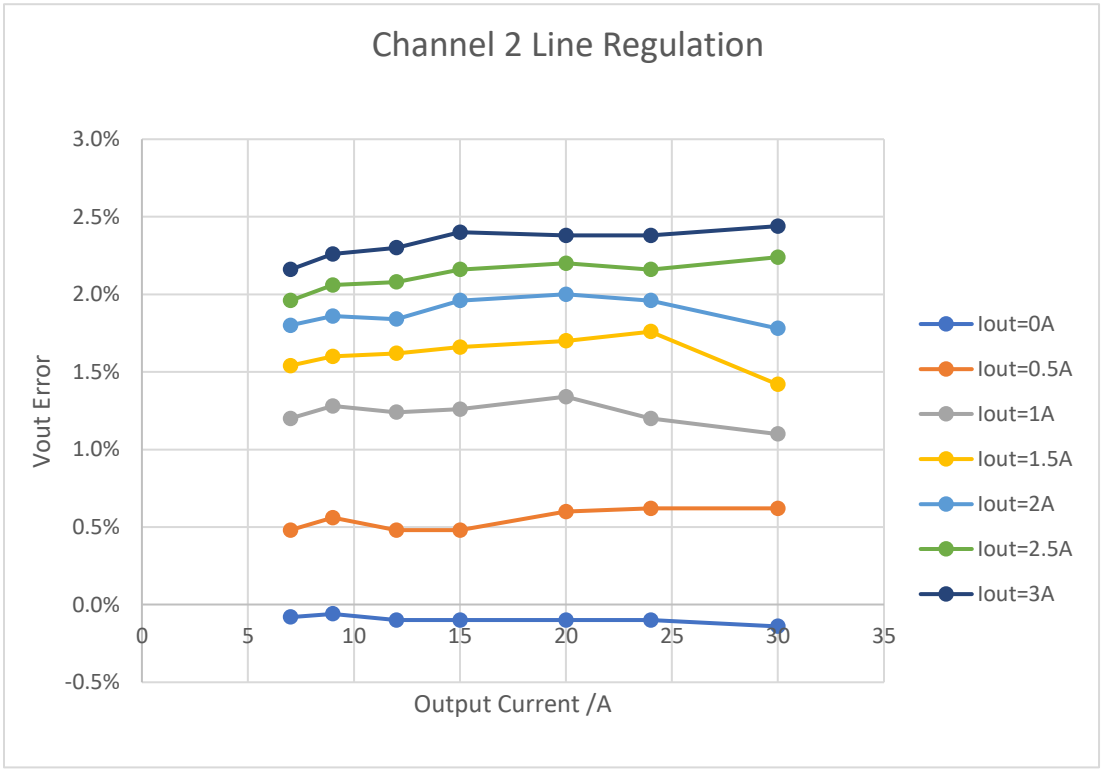
Measurement - Power Efficiency





Measurement - Line Regulation





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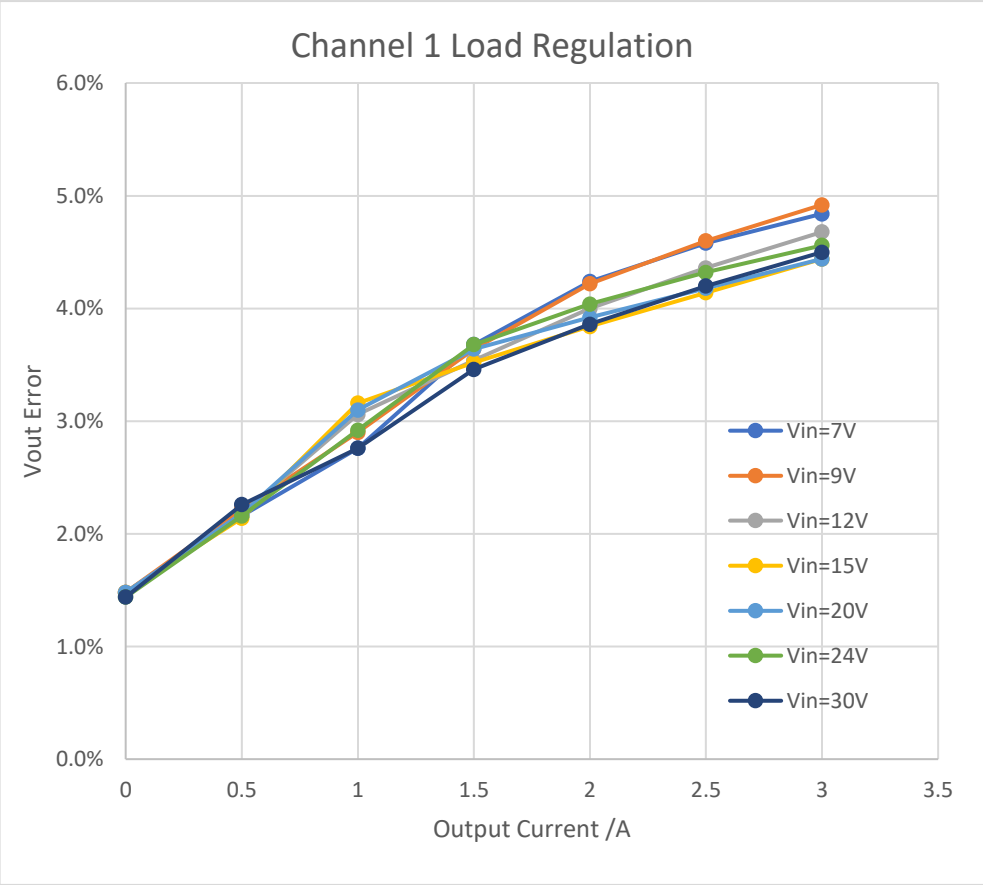
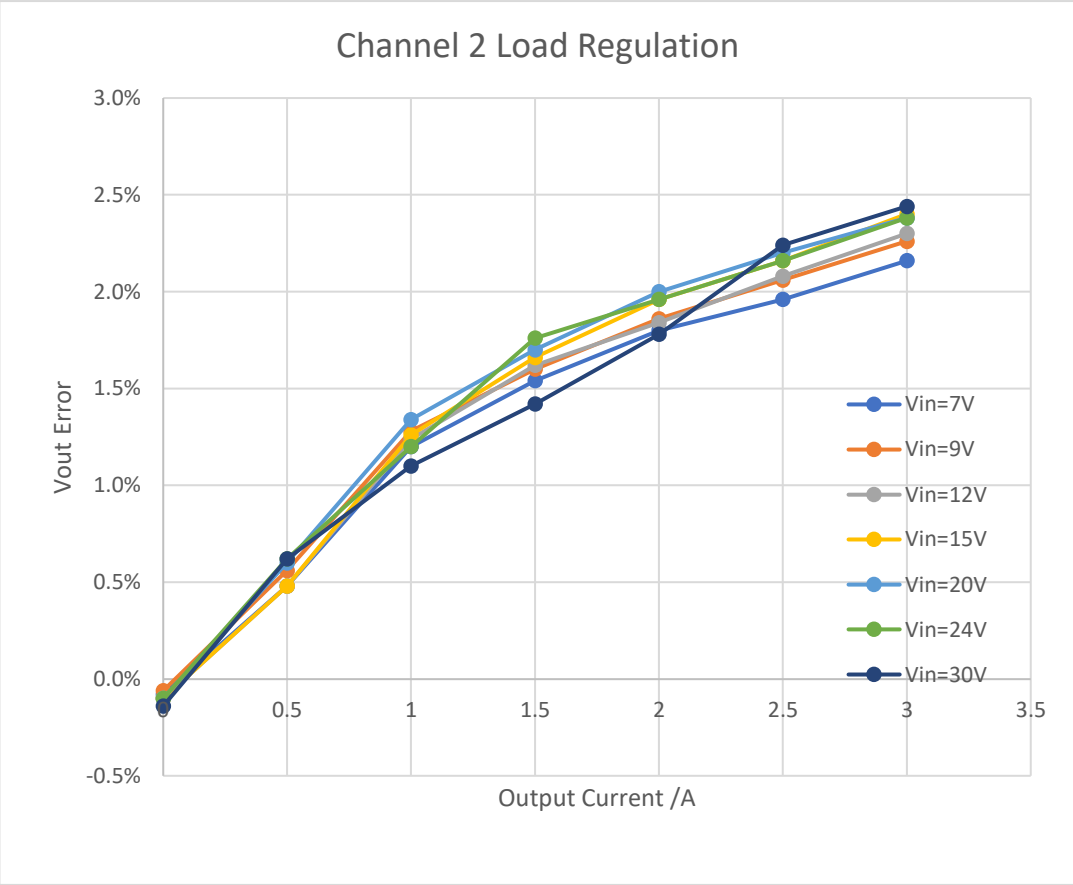
Measurement - Load Regulation





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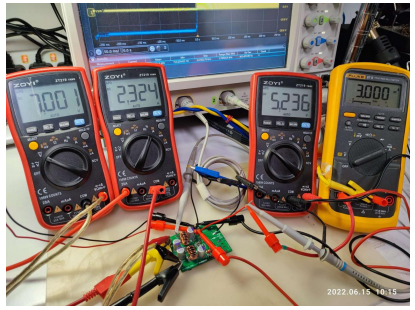
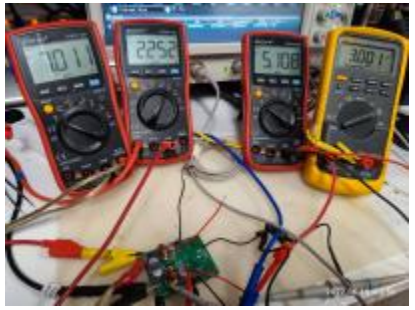
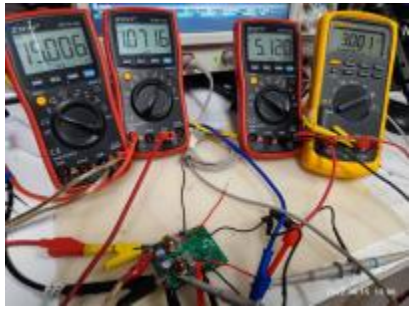
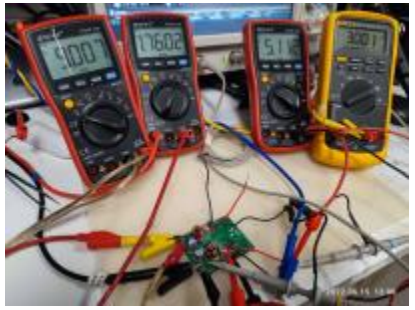
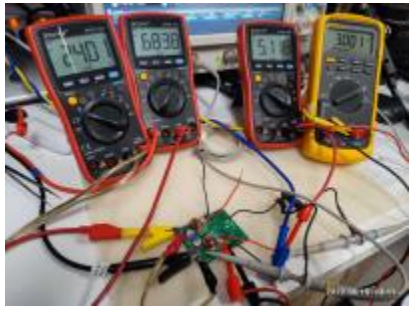
Reading at Output Full Loading

Channel 1 measurement



Channel 2 measurement

Waveforms - Startup (Output at 3A load)

Waveform is captured at channel 1, output is loading at 3A

Yellow: Switch Node Blue: Output

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Waveform - Transient Loading

Transient Loading at 0 to 3A

Vin=7V, Output ripple ~500mV

Vin=30V, Output ripple ~500mV

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Waveforms - Channel 1 Over Current Protection

Yellow Trace: Switch Node Blue Trace: DC-DC Output

At Vin=7V, output over current protection is at 3.1A, and then channel 1 runs into hiccup mode.

At Vin=30V, output over current protection is at 3.1A, and then channel 1 runs into hiccup mode.

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Waveforms - Channel 2 Over Current Protection

Yellow Trace: Switch Node Blue Trace: DC-DC Output

At Vin=7V, output over current protection is at 3.16A, and then channel 2 runs into hiccup mode.

At Vin=30V, output over current protection is at 3.16A, and then channel 2 runs into hiccup mode.

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Summary

- The quiescent current is around 22mA@Vin=30V and 20mA@Vin=12V with switching
- The power efficiency is over 90% at 3A output loading for Vin = 7V to 30V
- The output setpoint of Vout at channel 1 is > 1% and less than 1% at channel 2.
- The line regulation error of 5V Vout is within 1% at different loading condition for both channel 1 and 2
- The load regulation of 5V Vout at channel 1 is around 4% and 3% at channel 2
- The output can start up smoothly at Vin = 12V or 30V with full 3A loading
- The OCP is around 3.1A for both channel 1 and channel 2 outputs.

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