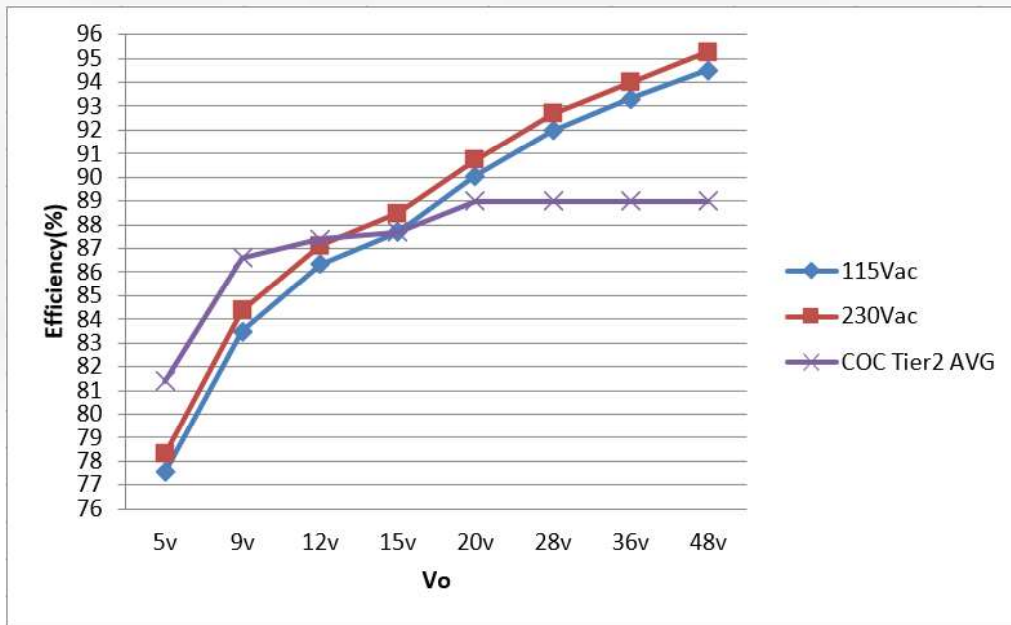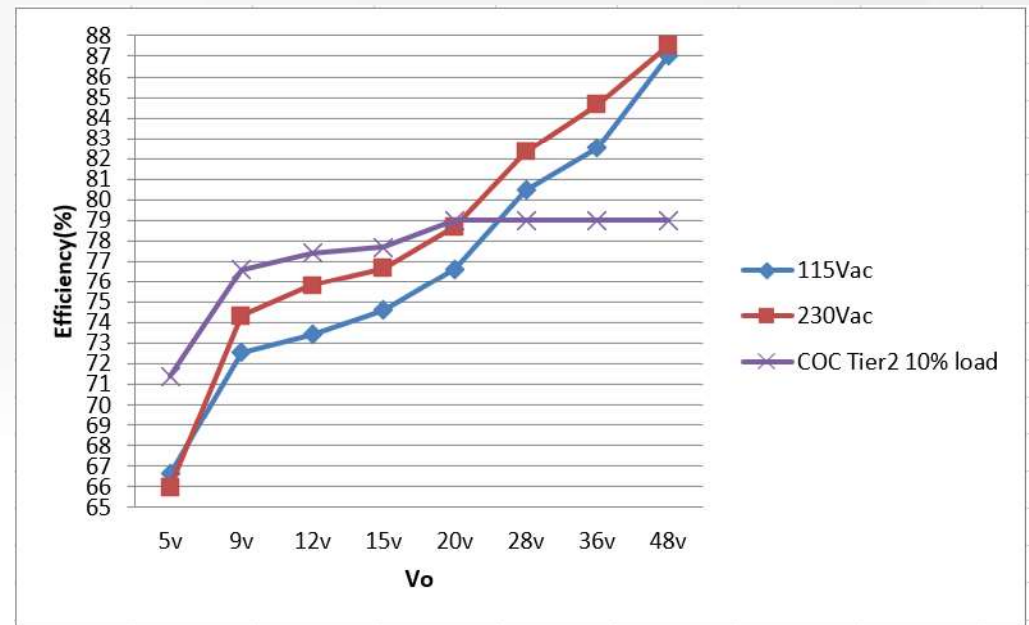# COC V5 Tier2 Specification and Average/Light Load Efficiency

Avg. efficiency

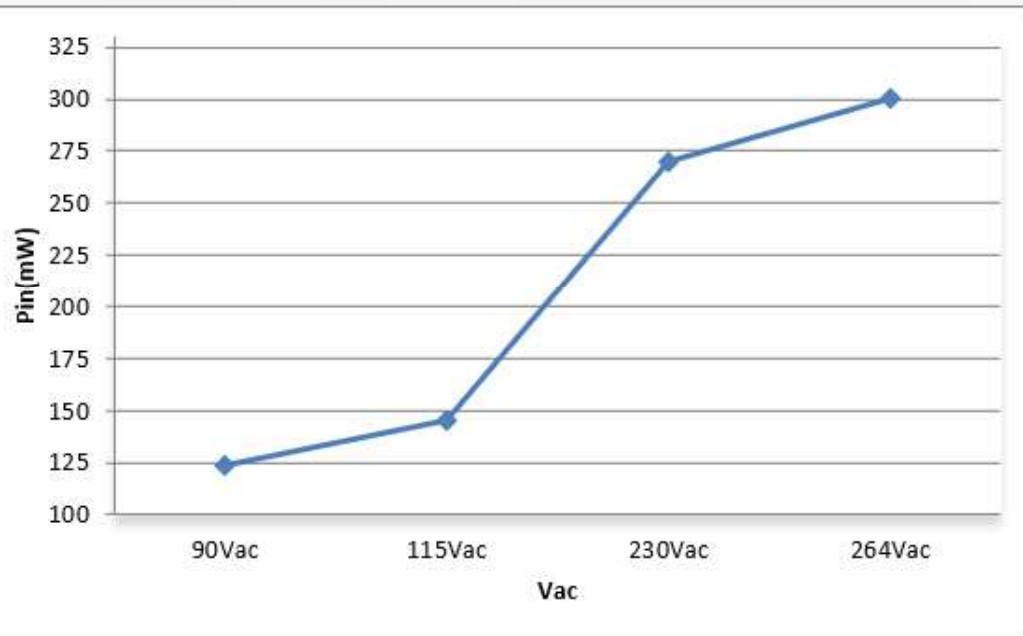10% load efficiency

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Standby Power and PF

Standby Power

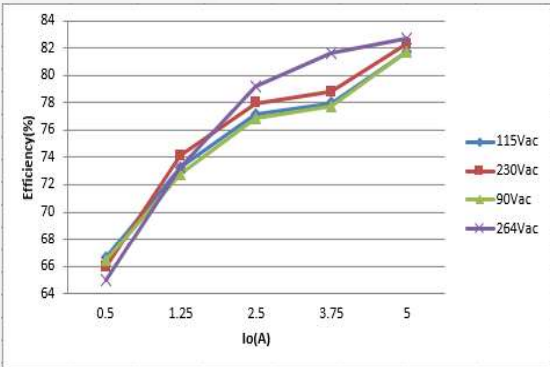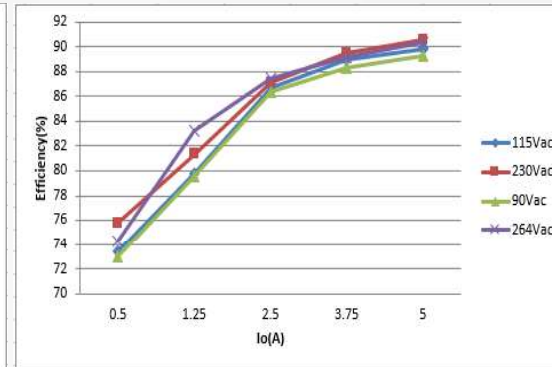PF

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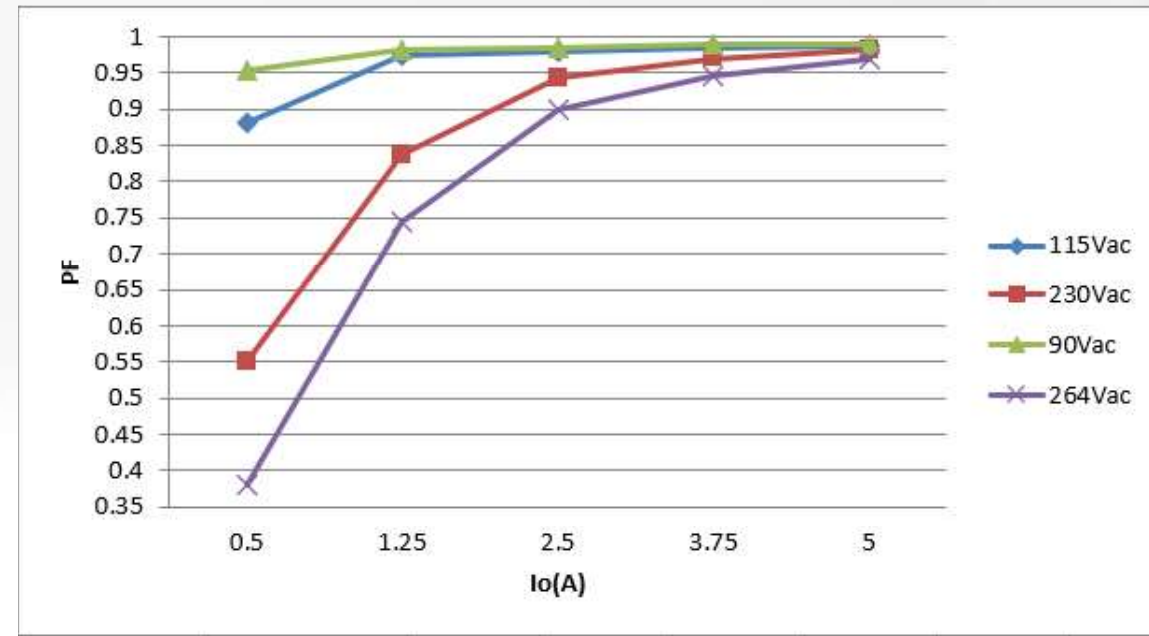
Efficiency Vs Load

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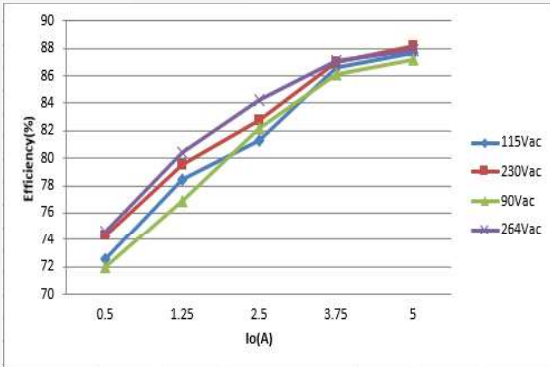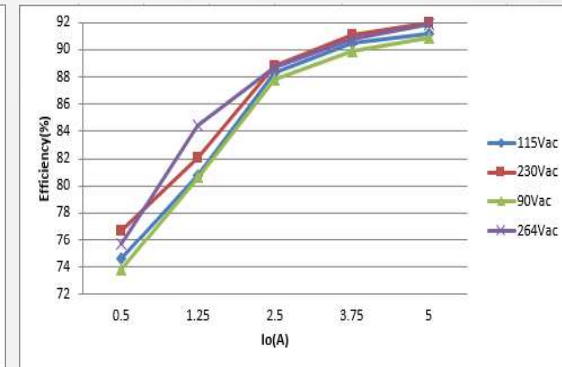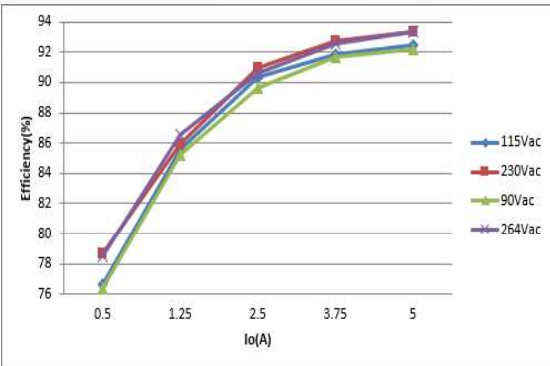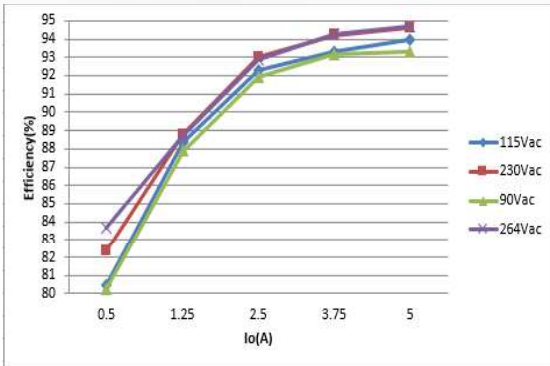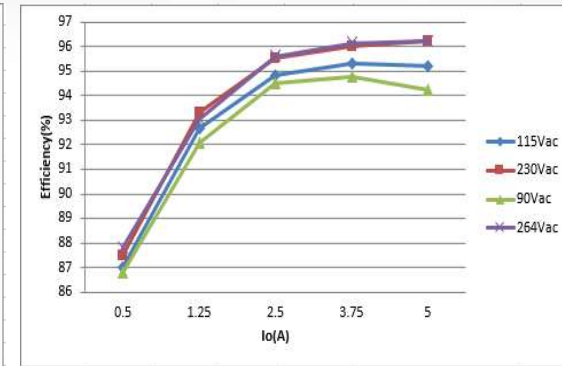
PFC Waveform at 90Vac and Full Load

90Vac and full load
Ch1: input voltage
Ch2: input current
Ch3: fast leg SW voltage
Ch4: bulk voltage
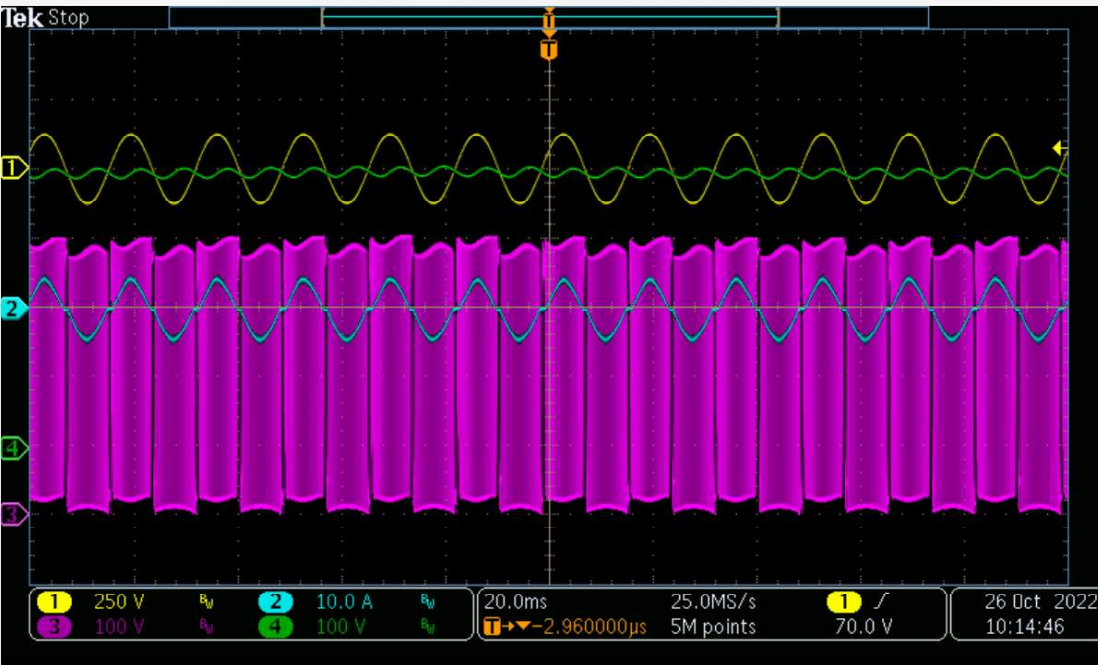
90Vac and full load
Ch1: input voltage
Ch2: inductor current
Ch3: fast leg SW voltage
Ch4: bulk voltage

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PFC Waveform---0 to 240w&240w to 0 Transition

90Vac and 0 to full load transition
Ch1: input voltage
Ch2: inductor current
Ch3: fast leg SW voltage
Ch4: bulk voltage
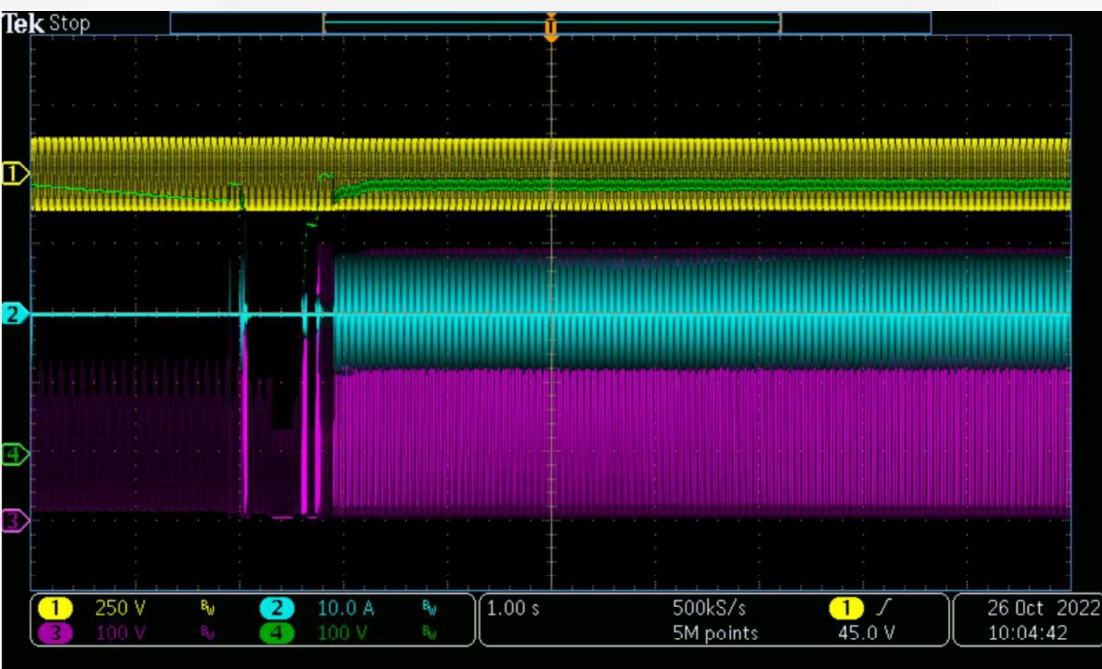
90Vac and full load to 0 transition
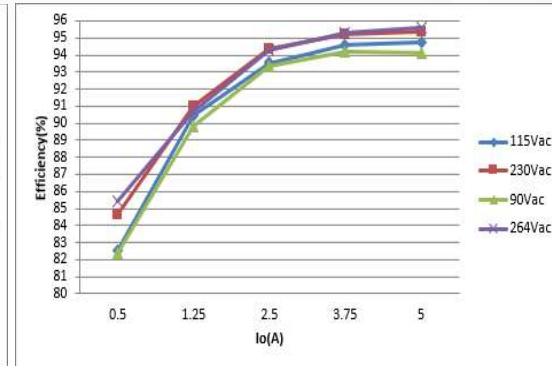Ch1: input voltage
Ch2: inductor current
Ch3: fast leg SW voltage
Ch4: bulk voltage

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PFC Waveform---Line Transition
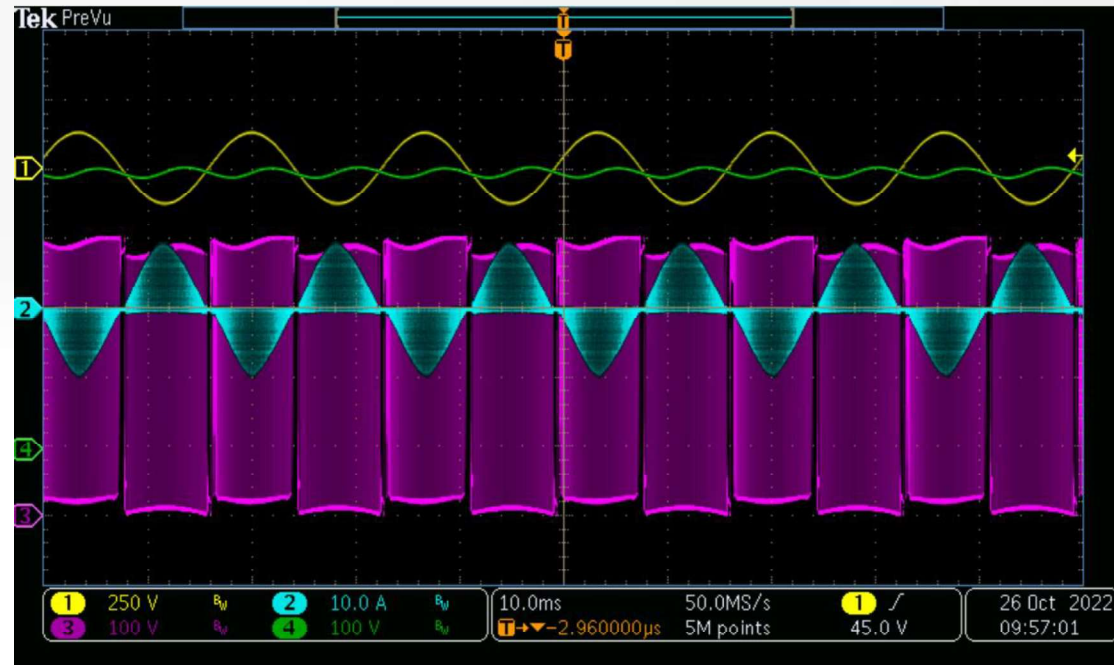
115Vac to 230V transition at full load
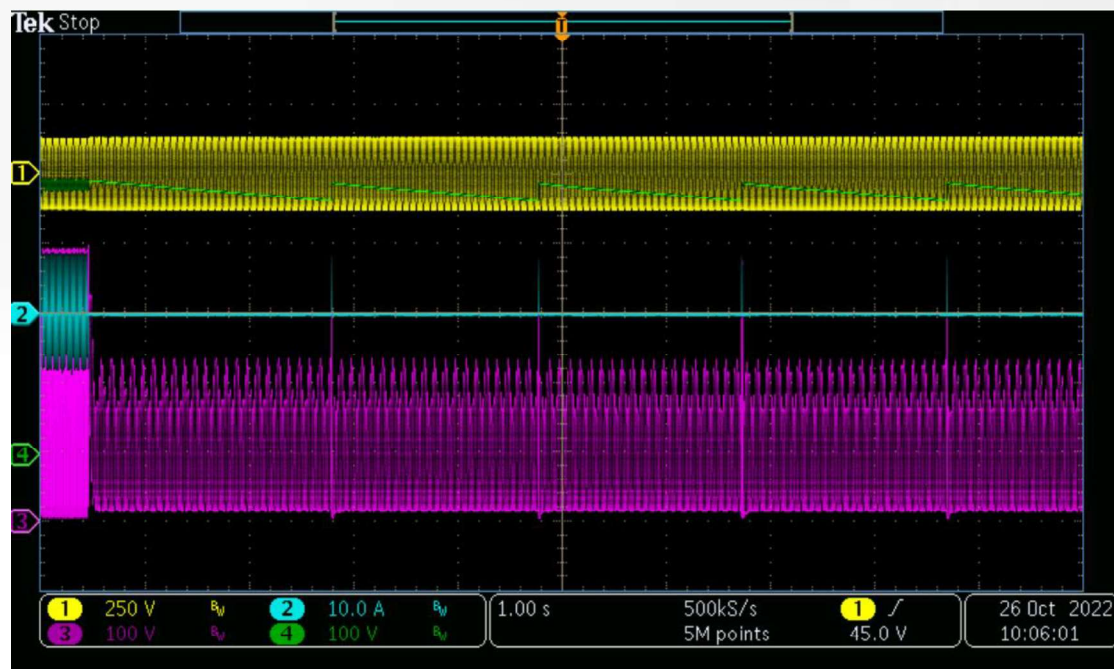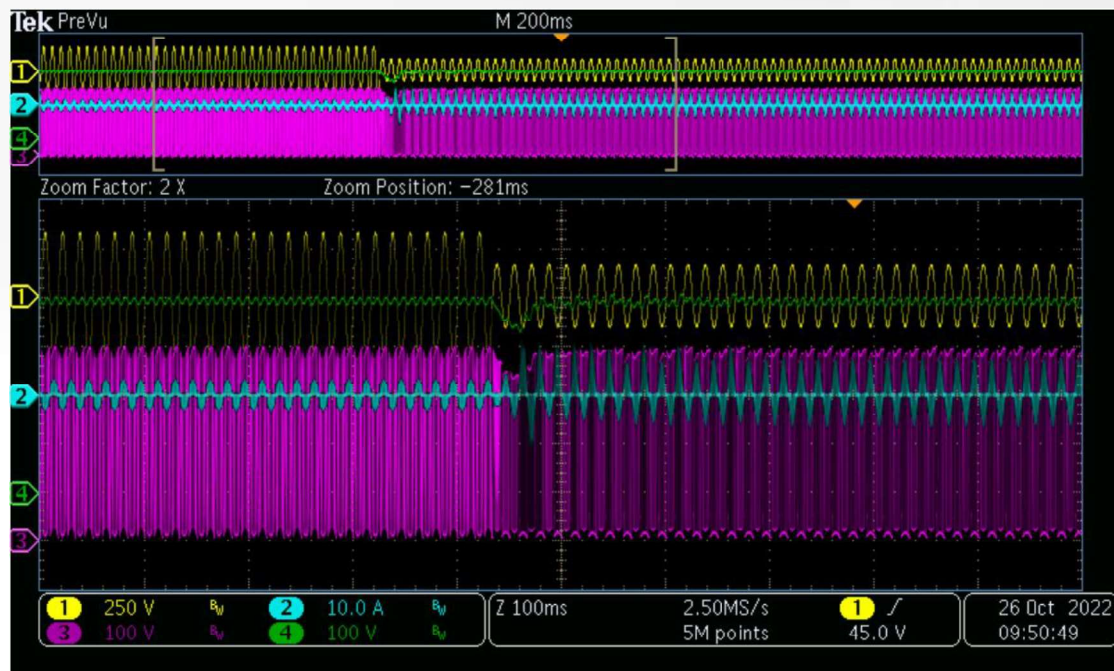Ch1: input voltage
Ch2: inductor current
Ch3: fast leg SW voltage
Ch4: bulk voltage

230Vac to 115V transition at full load
Ch1: input voltage
Ch2: inductor current
Ch3: fast leg SW voltage
Ch4: bulk voltage

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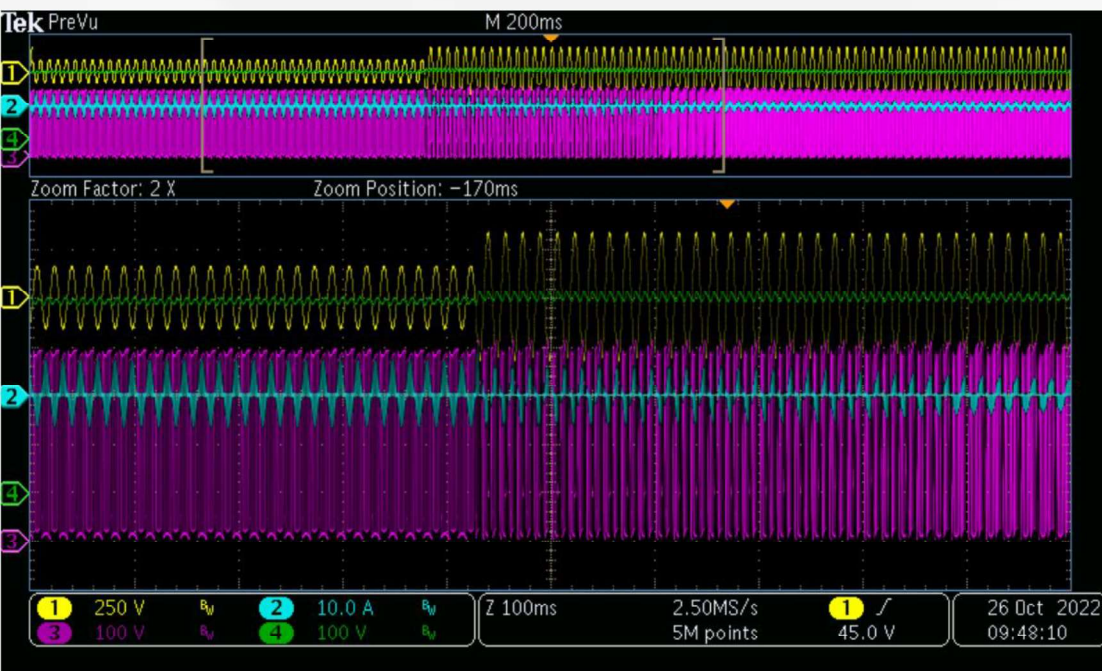
LLC Start and Operation waveform

Power on at 115Vac and 48v&5A
Ch1: LLC SW node voltage
Ch2: primary current
Ch3: Vbulk pin voltage(pin3)
Ch4: Mlower

Stable operation at 115Vac and 48v&5A
Ch1: LLC SW node voltage
Ch2: primary current
Ch3: Vbulk pin voltage(pin3)
Ch4: Mlower

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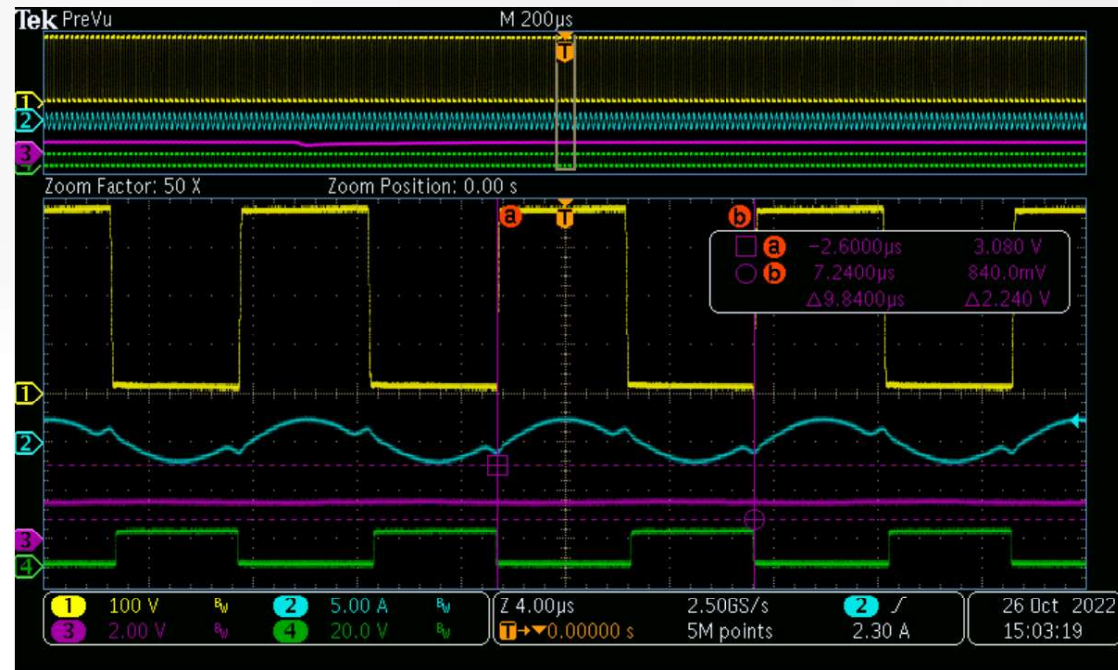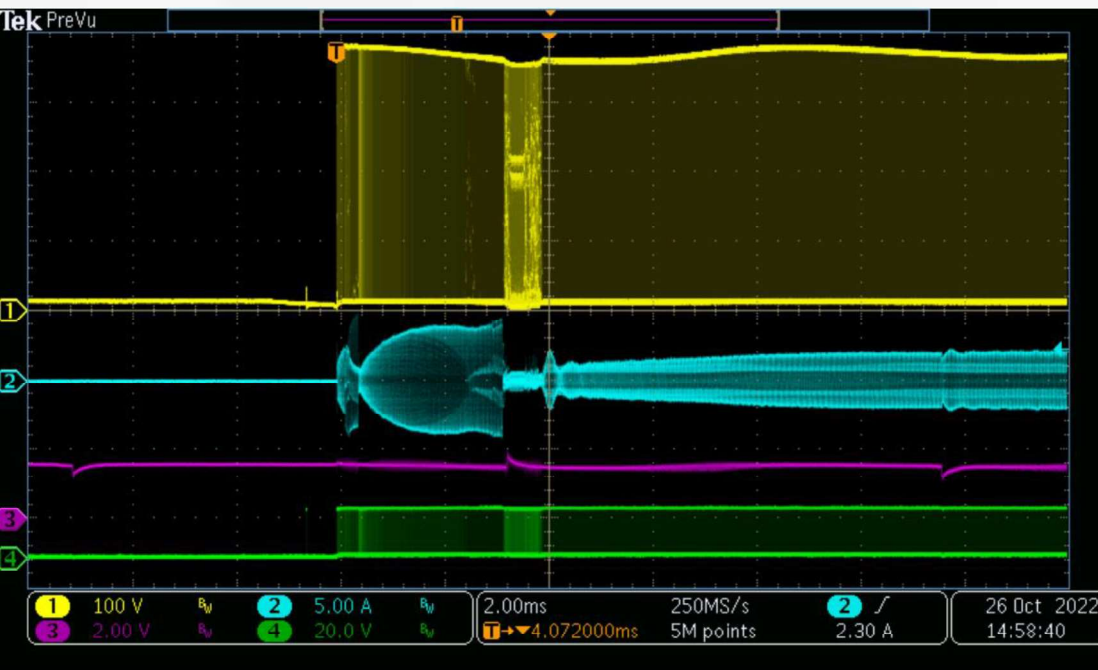
Hold Time and Secondary Stress

Power off at 90Vac and 48v&5A
Ch1: LLC SW node voltage
Ch2: input voltage
Ch3: output voltage
Ch4: bulk CAP voltage

Secondary stress at 48v&5A
Ch3: Vds_sec
Ch4: Syn. drive

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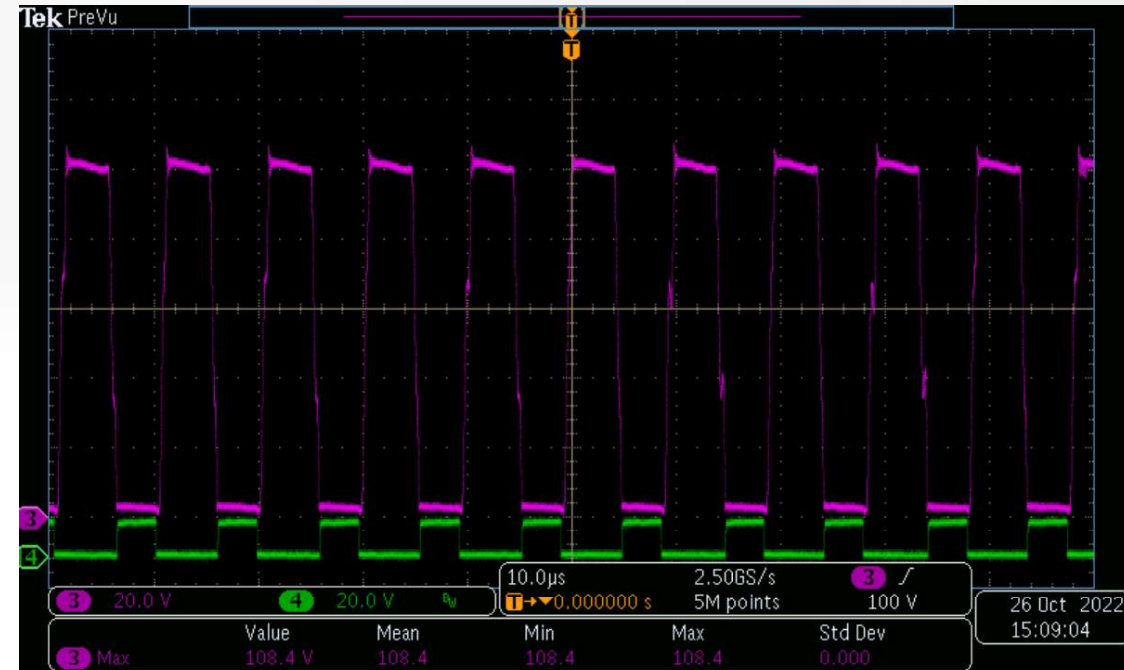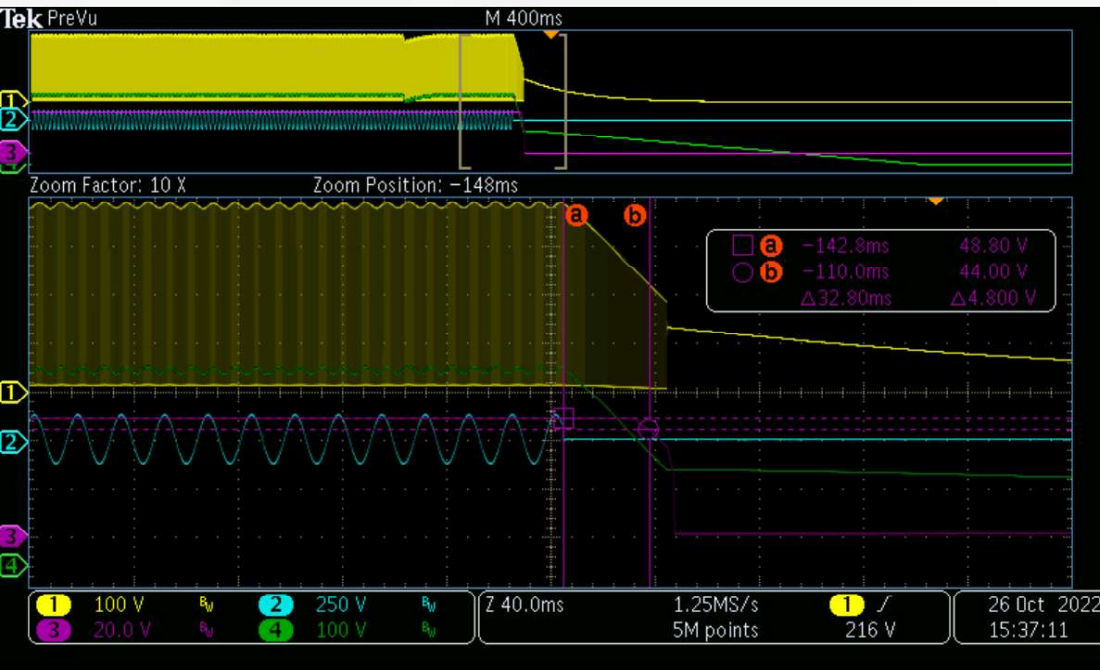
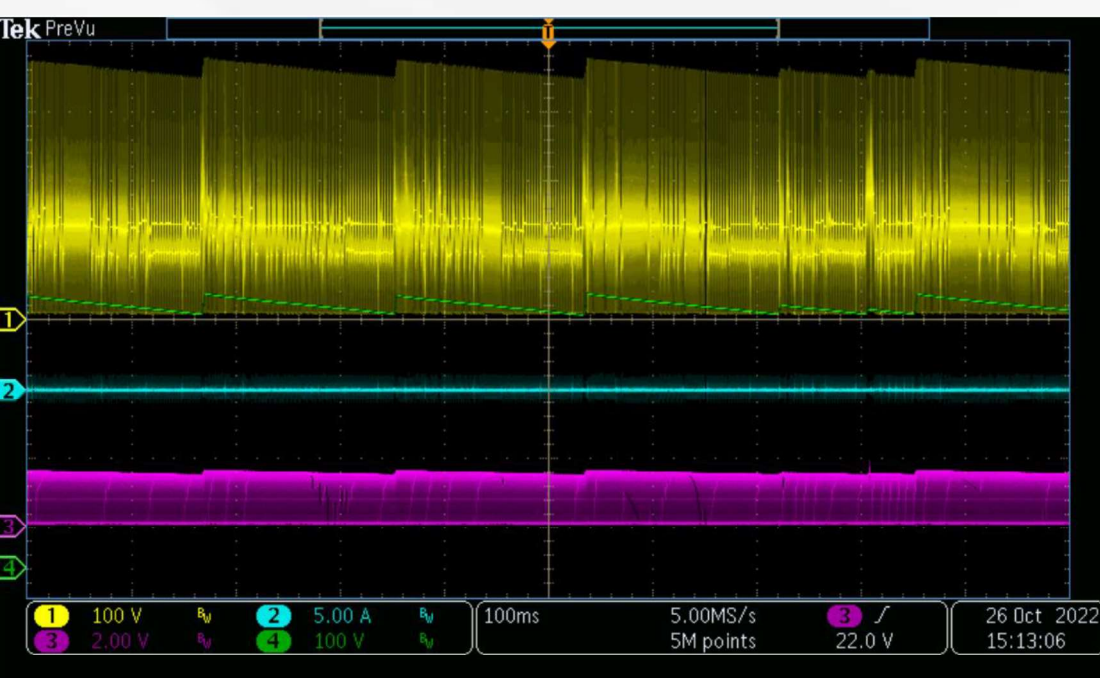# LLC Operation waveform at Skip Mode

48v&0A
Ch1: LLC SW node voltage
Ch2: primary current
Ch3: Vbulk pin voltage(pin3)
Ch4: Bulk CAP voltage

48v&0.2A
Ch1: LLC SW node voltage
Ch2: primary current
Ch3: Vbulk pin voltage(pin3)
Ch4: Bulk CAP voltage

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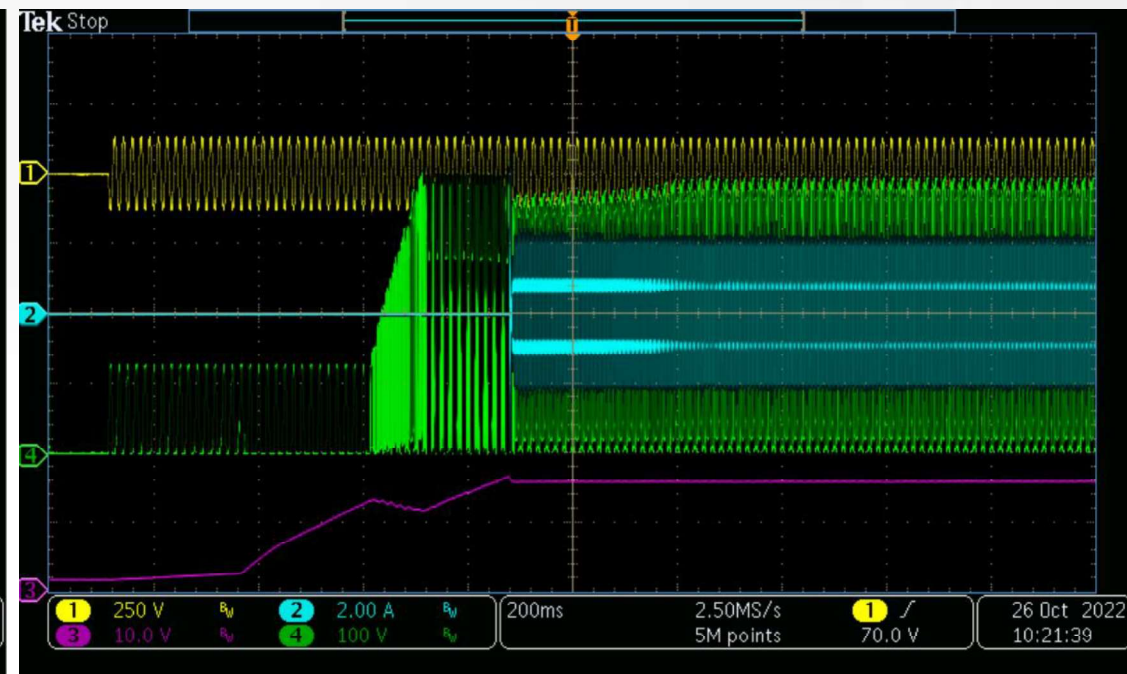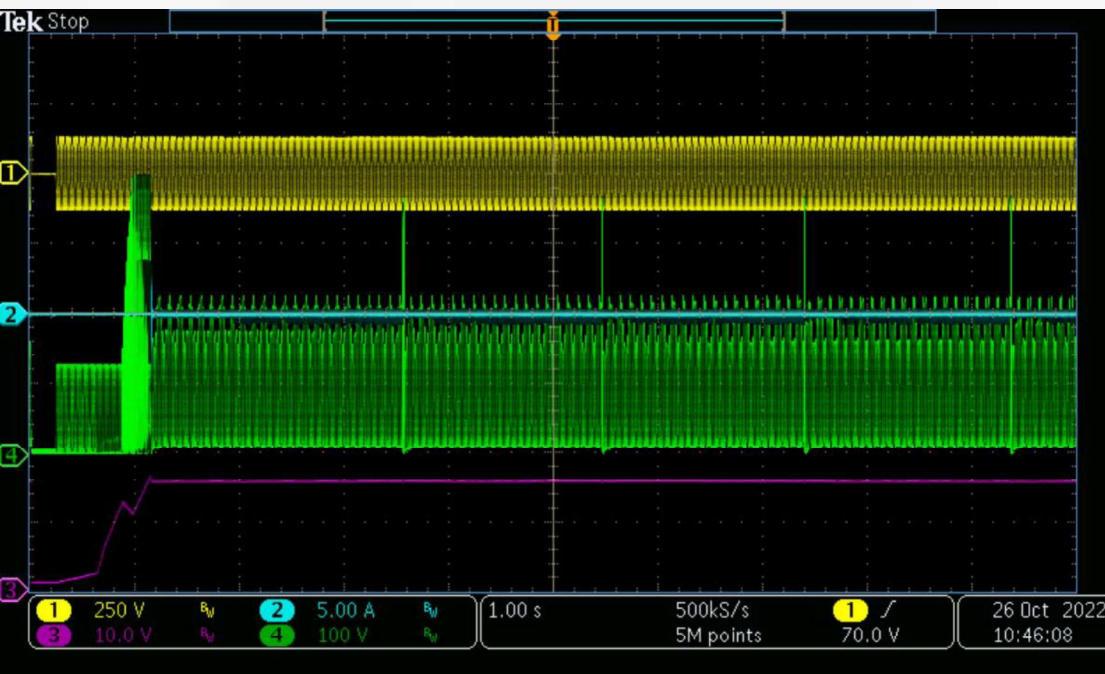
Startup Timing at No Load and Full load

48v&0A
Ch1: input AC voltage
Ch2: LLC primary current
Ch3: LLC Vcc voltage
Ch4: PFC fast leg voltage

48v&5A
Ch1: input AC voltage
Ch2: LLC primary current
Ch3: LLC Vcc voltage
Ch4: PFC fast leg voltage

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Load Dynamic Response at 5V
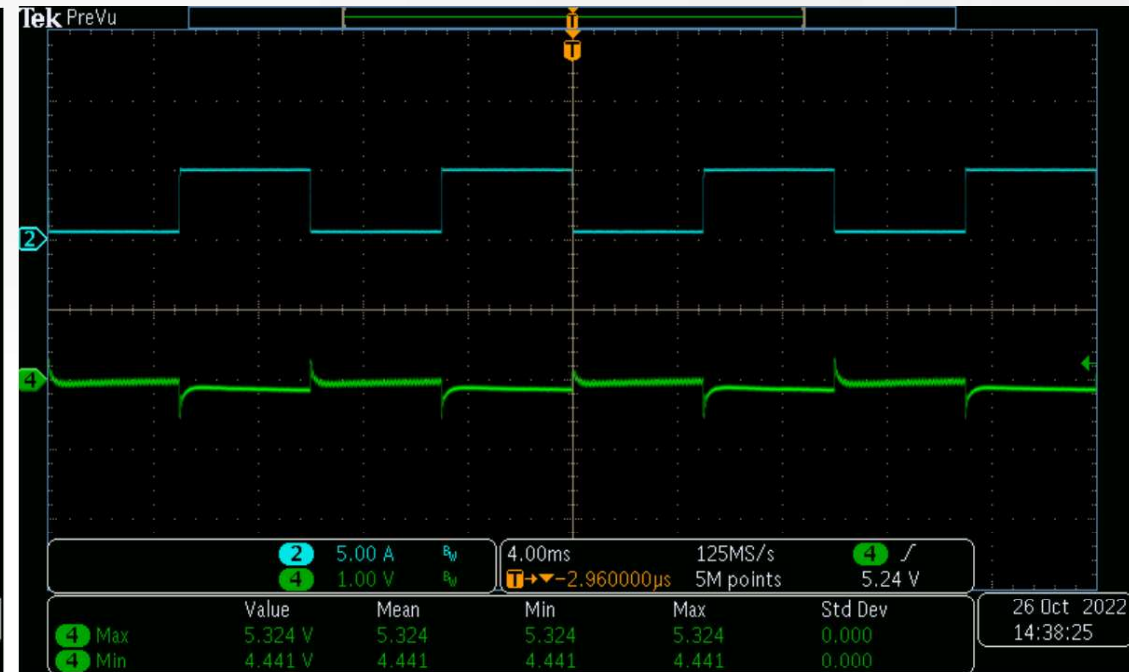
5v&0A to 0.5A, 10mS cycle, 0.25A/uS
Ch2: output current
Ch4: output voltage

5v&0.5A to 5A, 10mS cycle, 0.25A/uS
Ch2: output current
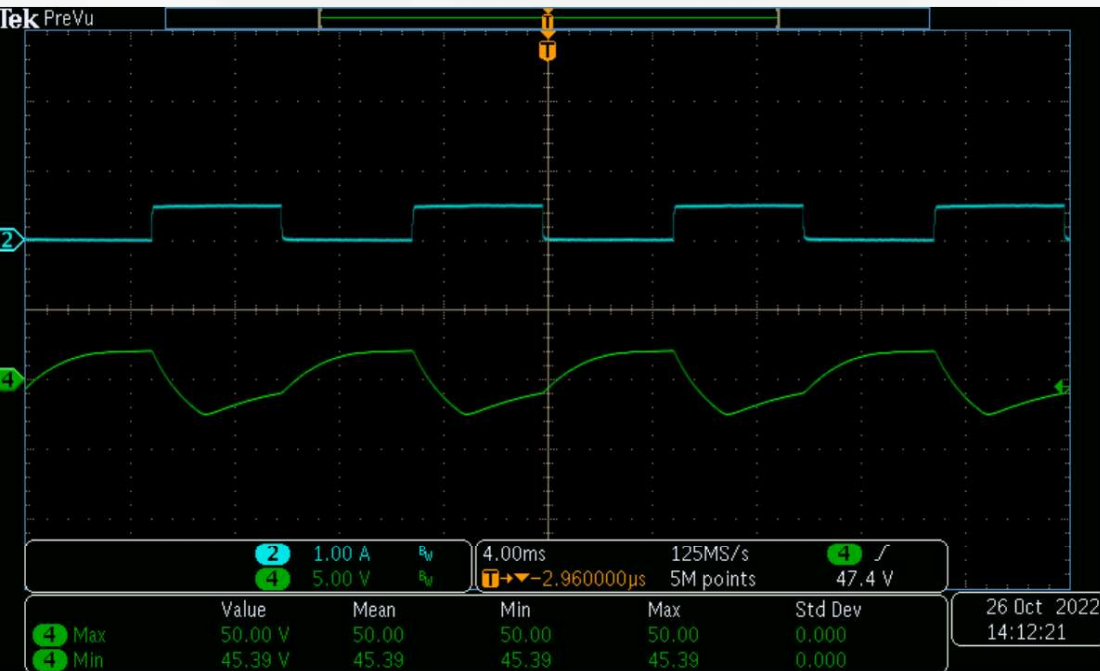Ch4: output voltage

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Load Dynamic Response at 48V

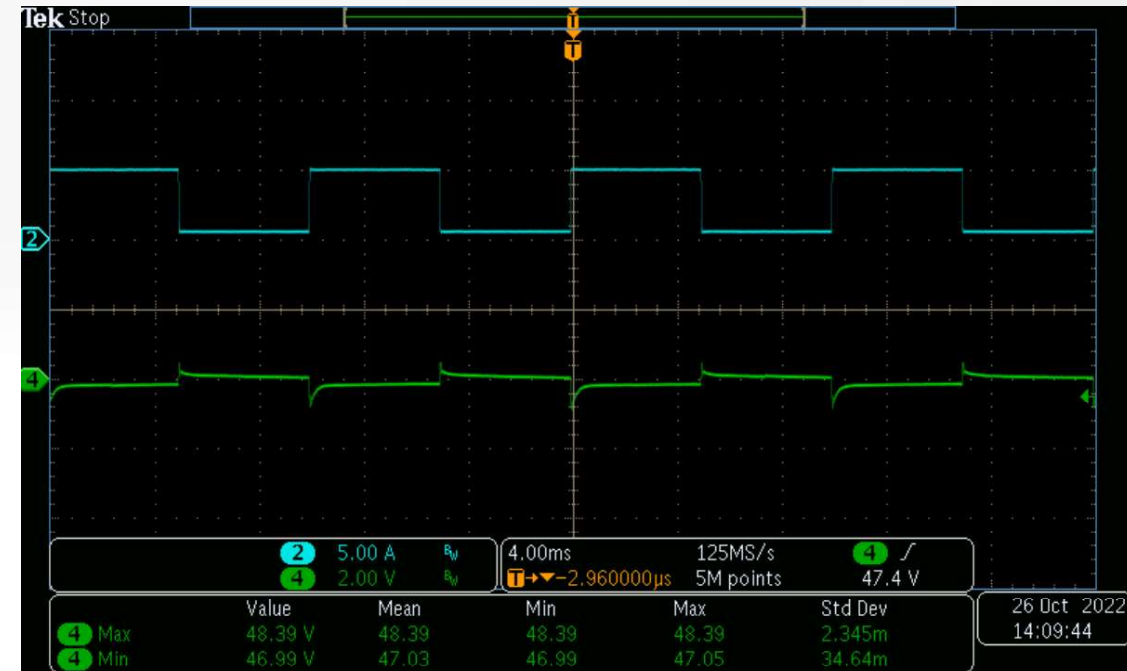48v&0A to 0.5A, 10mS cycle, 0.25A/uS
Ch2: output current
Ch4: output voltage

48v&0.5A to 5A, 10mS cycle, 0.25A/uS
Ch2: output current
Ch4: output voltage

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DC-DC OCP Waveform

OCP at 52V input and 48V5.5A output
Ch2: output current
Ch3: SW voltage
Ch4: output voltage

OCP at 52V input and 48V6A output
Ch2: output current
Ch3: SW voltage
Ch4: output voltage

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Thermal Camera Image(after 15min operation)

90Vac&48V5A   115Vac&48V5A   230Vac&48V5A   230Vac&48V5A

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