



REPORT

ZETA CONVERTER



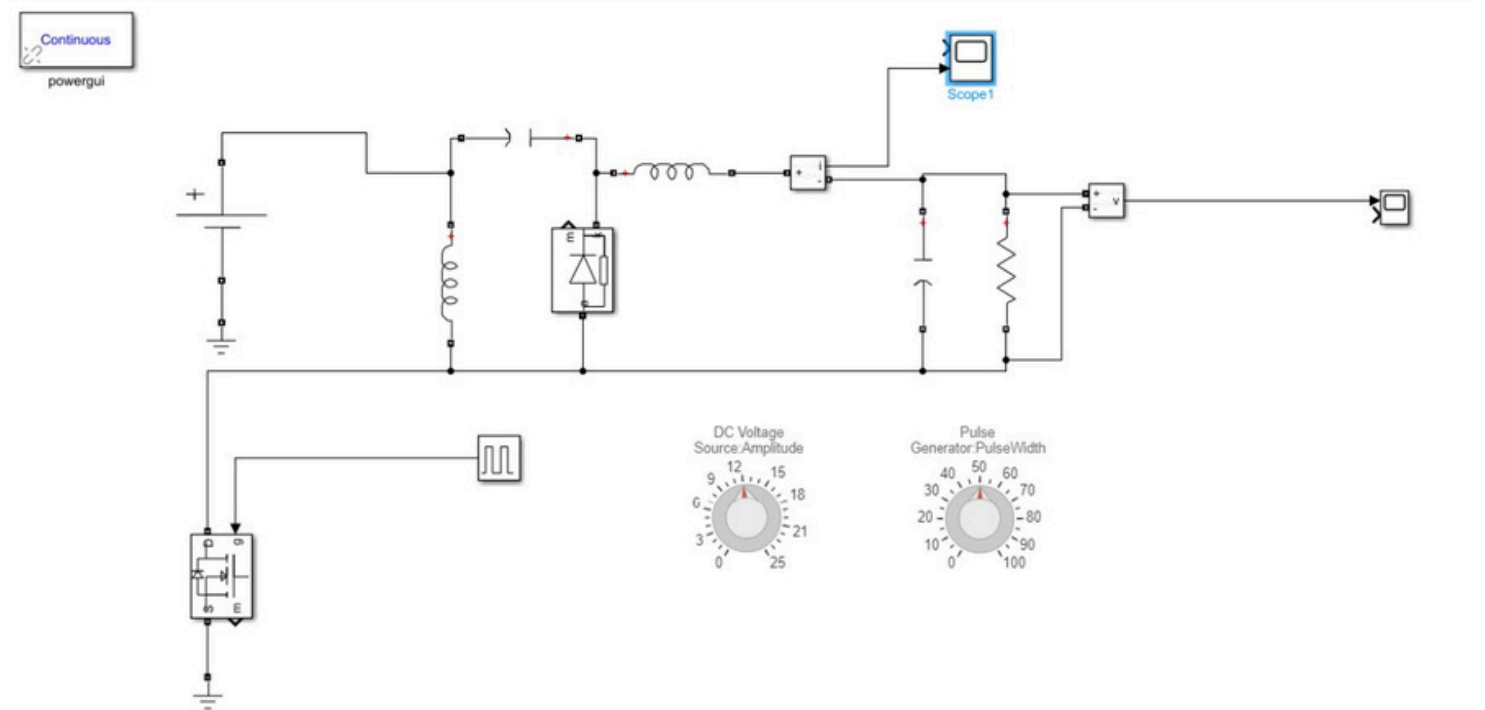
Presented By
HARSHAL

Aim

Zeta Converter

**Specifications: Input 12 V, Output 6–18 V,
Switching frequency 10 kHz, Output current
Waveforms of diode current and inductor
voltage in CCM.**

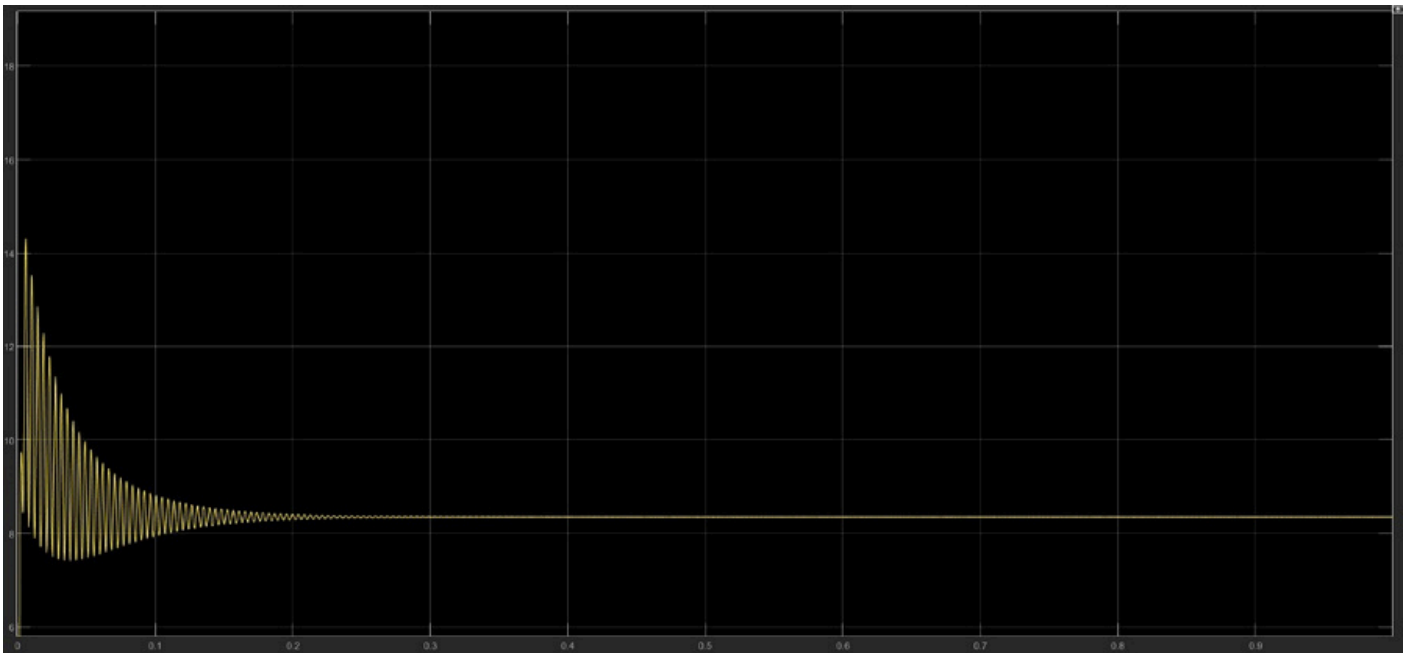
Matlab Simulation



Circuit Diagram

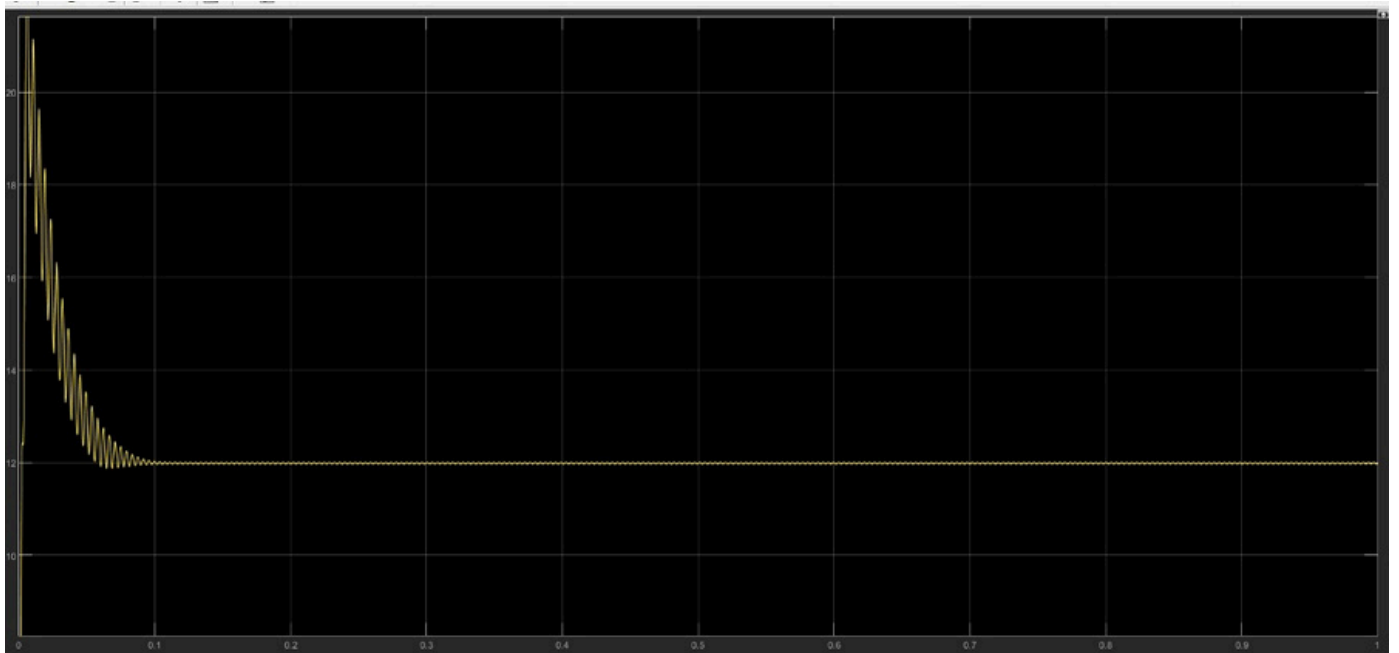
Simulation Output Voltage

- At 33% Duty Cycle



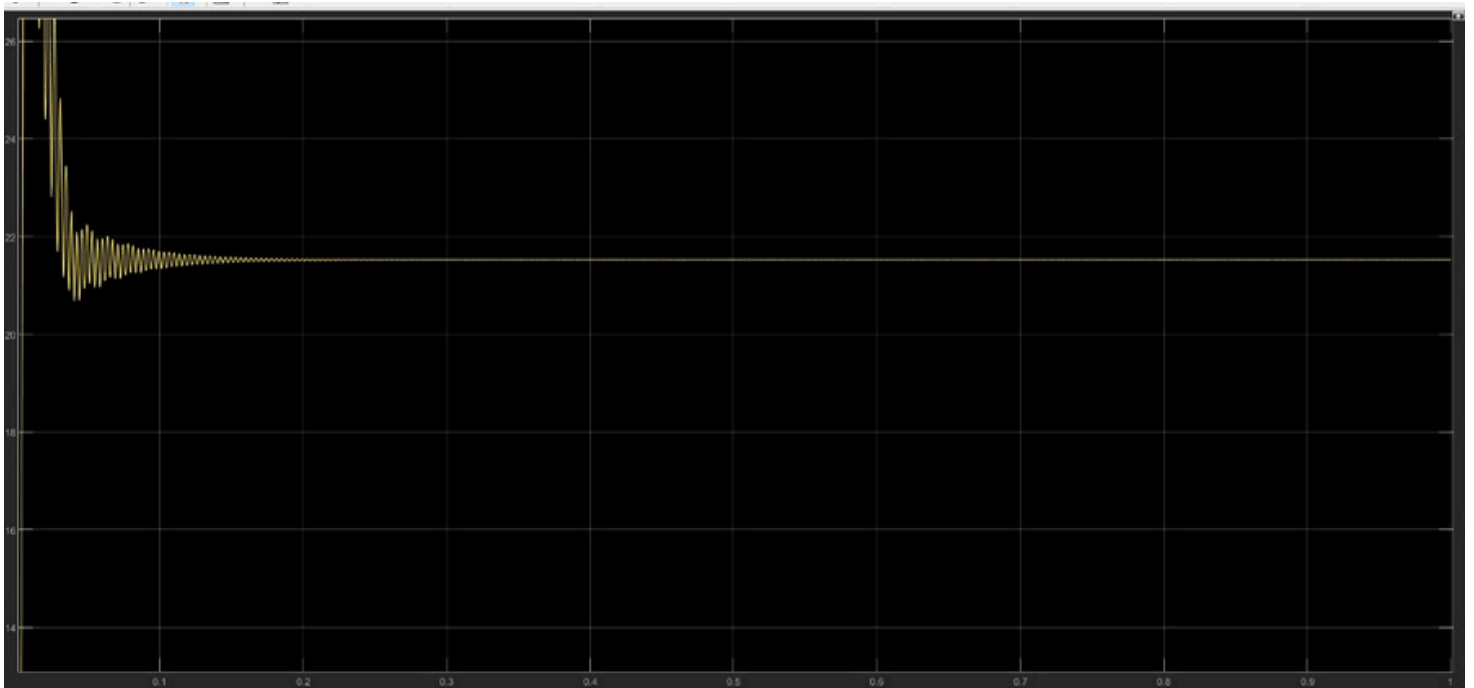
Simulation Output Voltage

- At 50% Duty Cycle

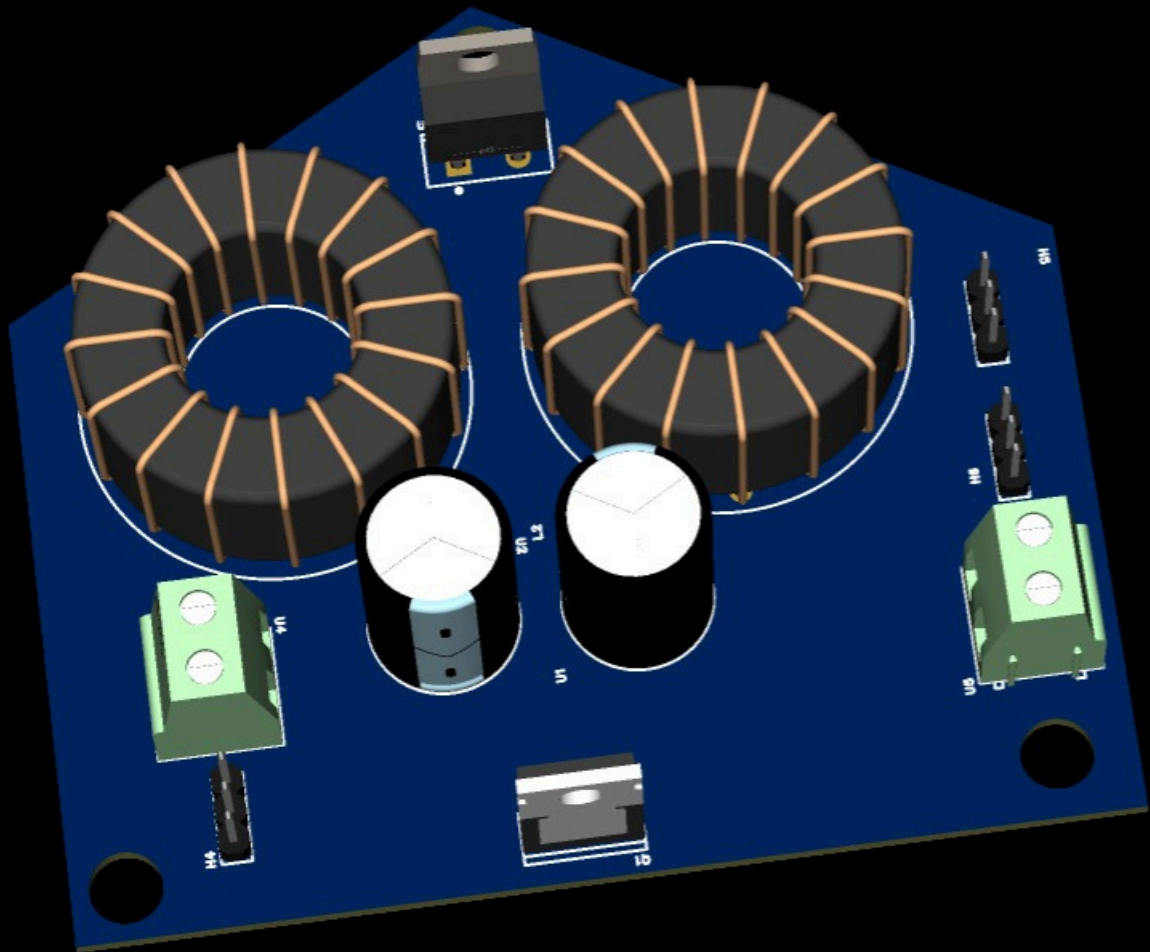


Simulation Output Voltage

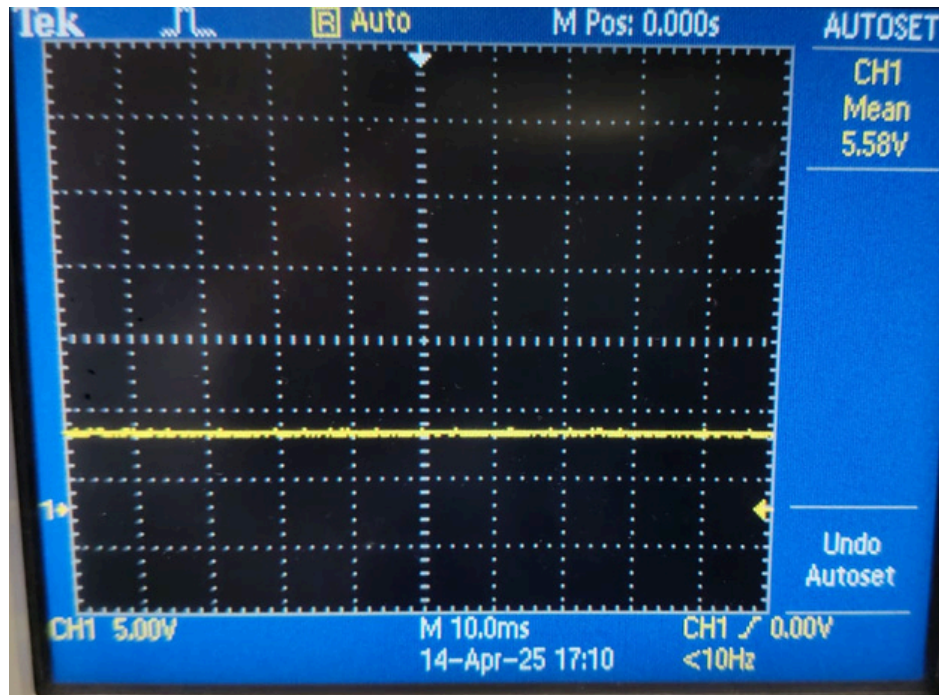
- At 64% Duty Cycle



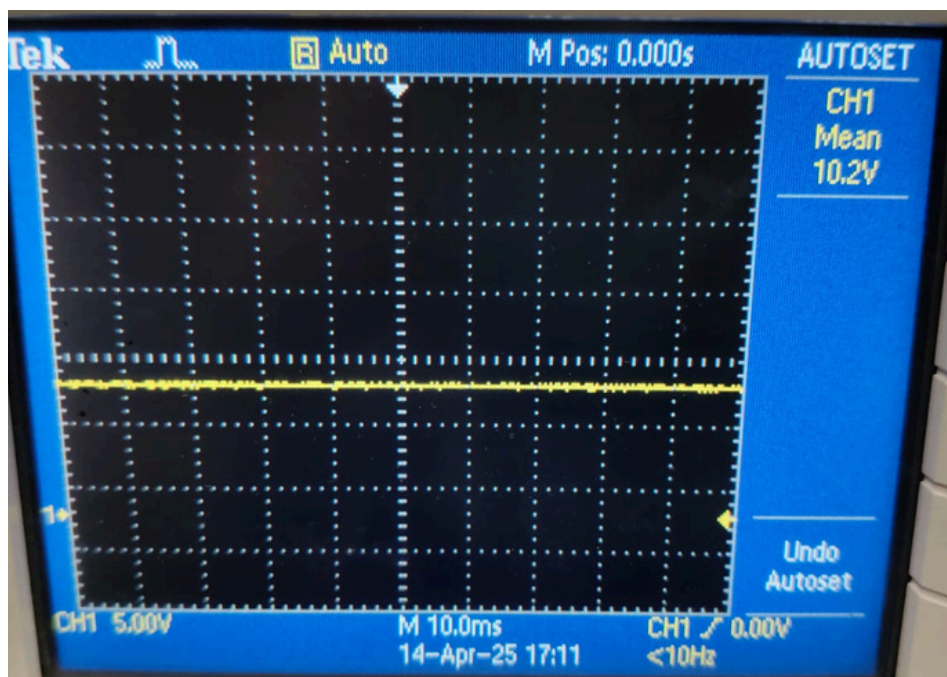
PCB



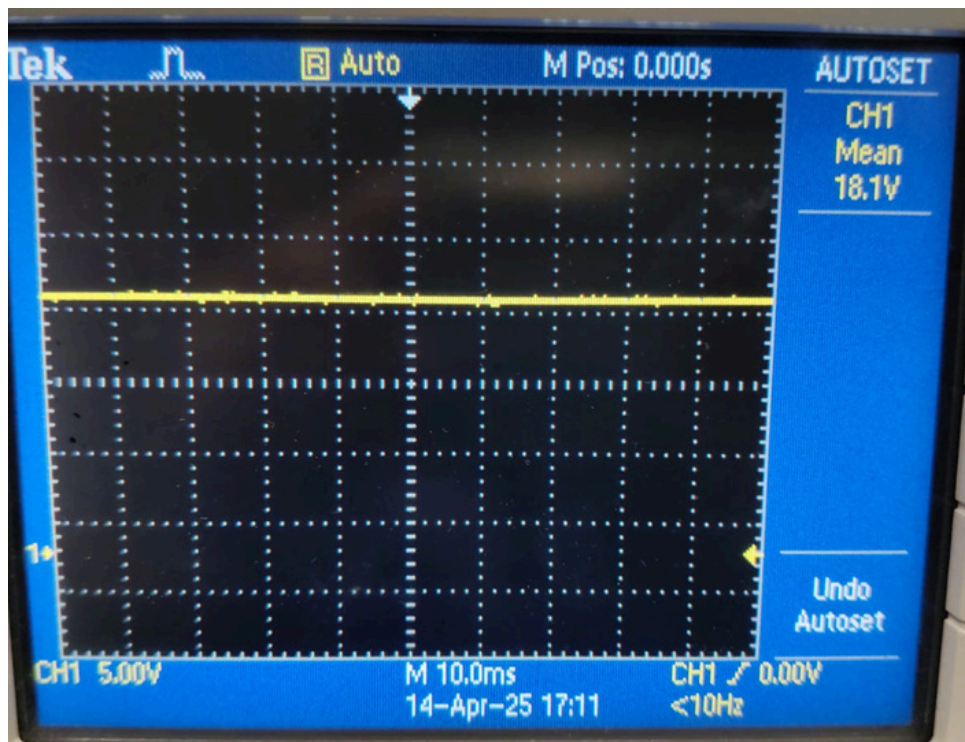
- **Output Voltage = 5.58V at 33% Duty cycle**



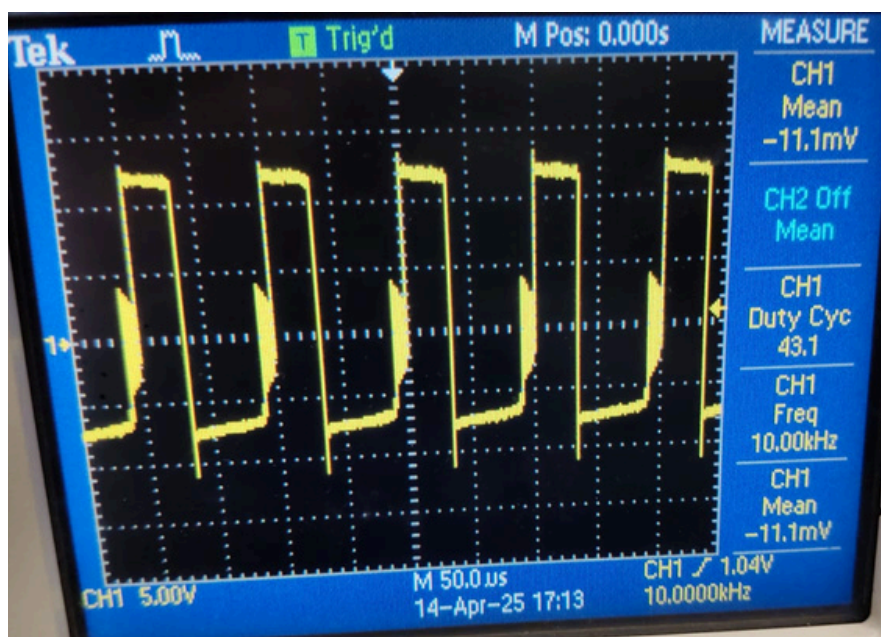
- **Output Voltage = 10.2V at 50% Duty cycle**



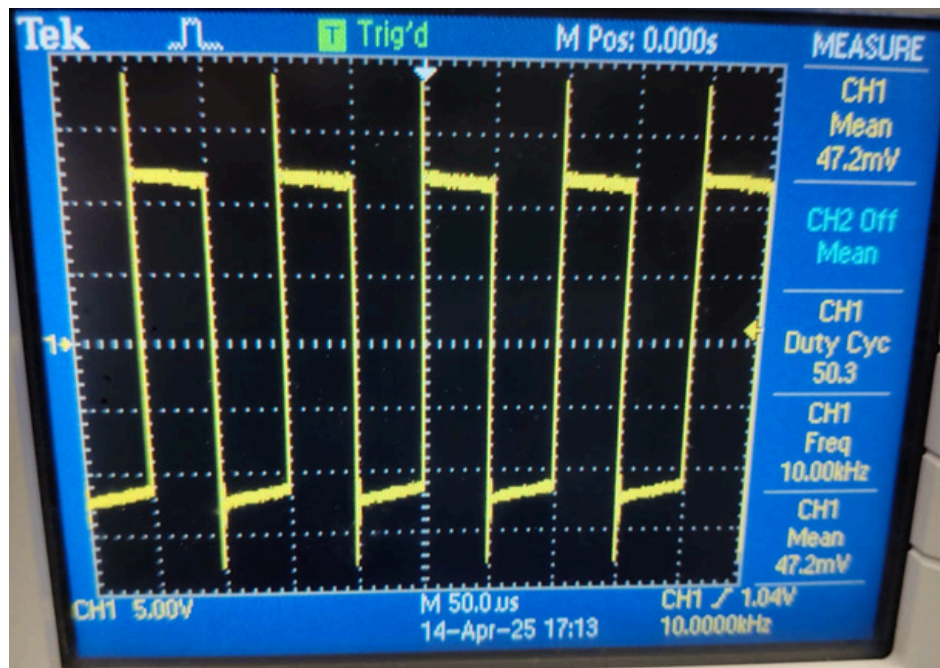
- Output Voltage = 18.1V at 64% Duty cycle



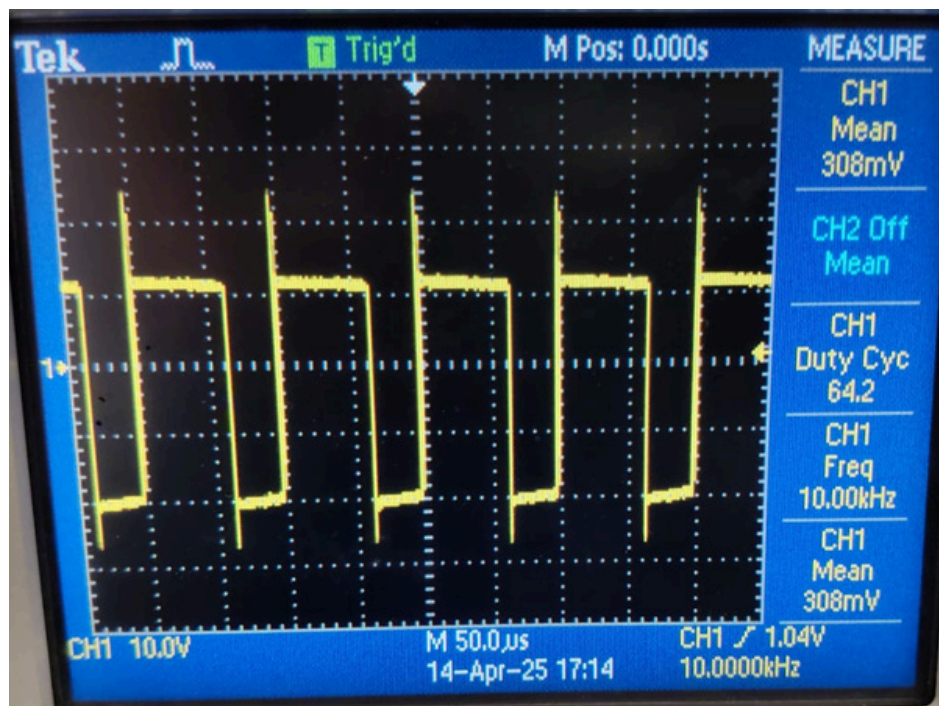
- Inductor Voltage L1 at 33% Duty cycle



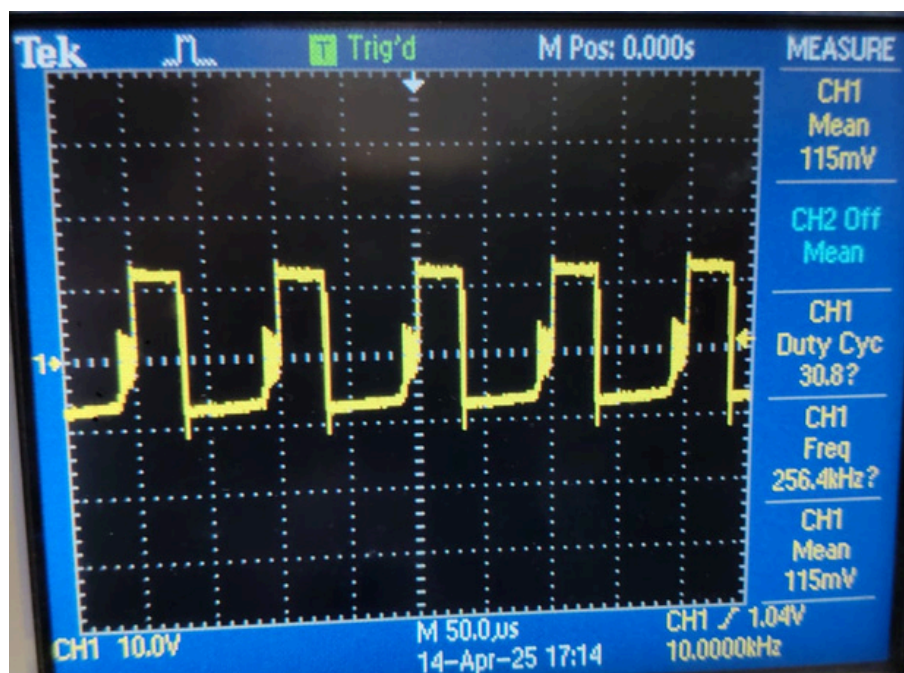
- Inductor Voltage L1 at 50% Duty cycle



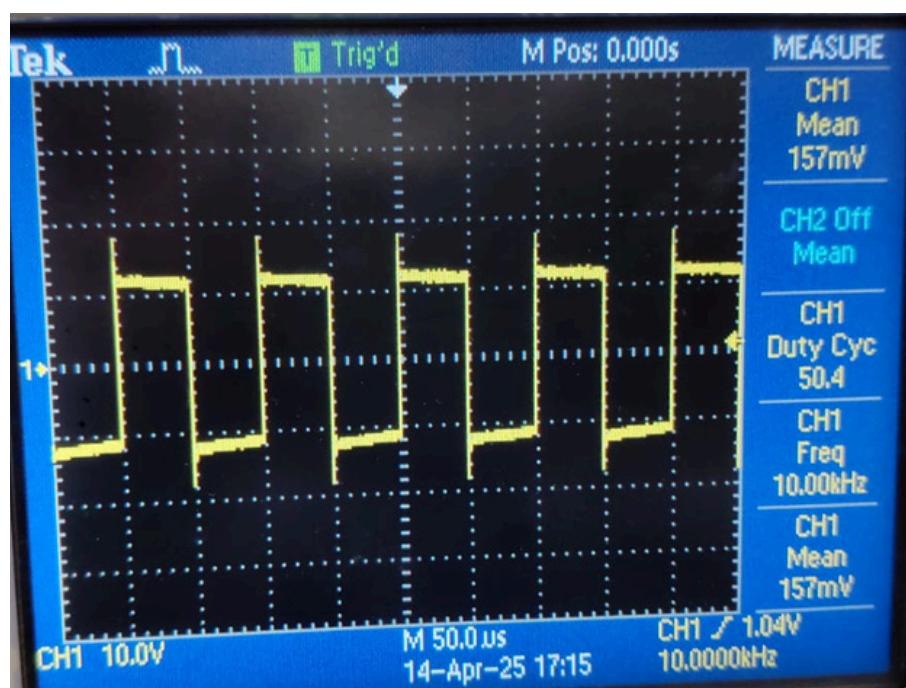
- Inductor Voltage L1 at 64% Duty cycle



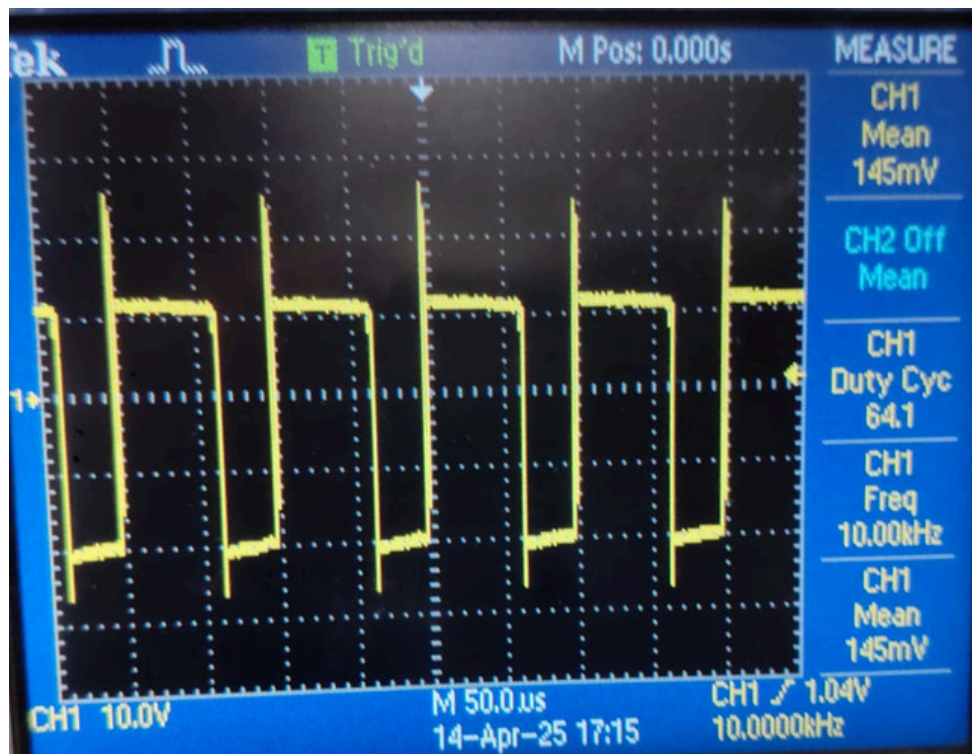
- Inductor Voltage L2 at 33% Duty cycle



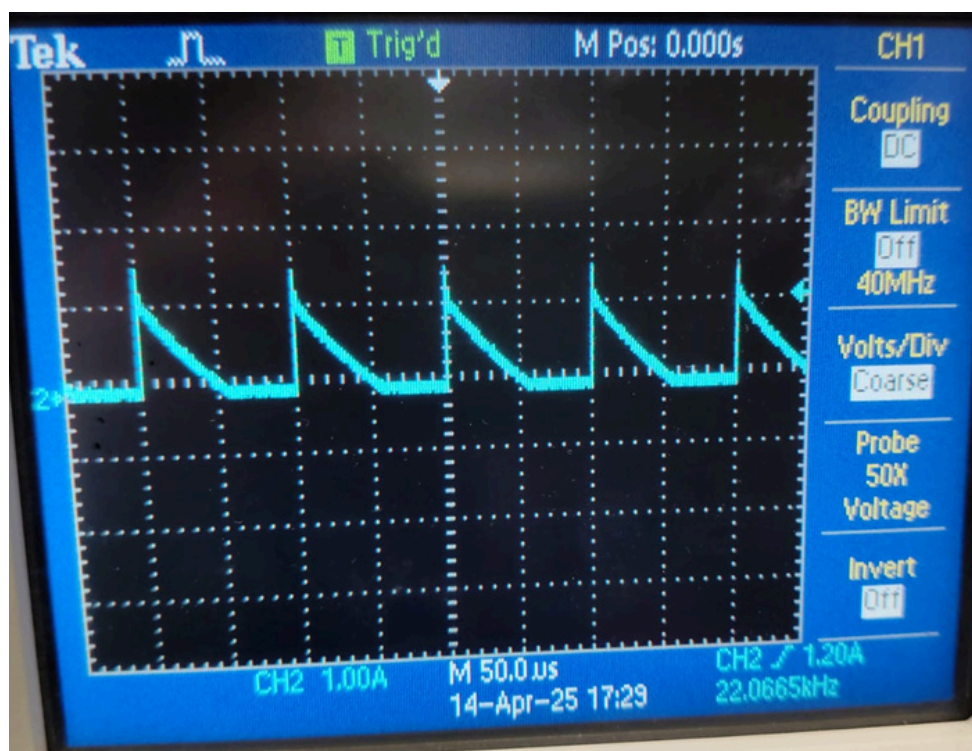
- Inductor Voltage L2 at 50% Duty cycle



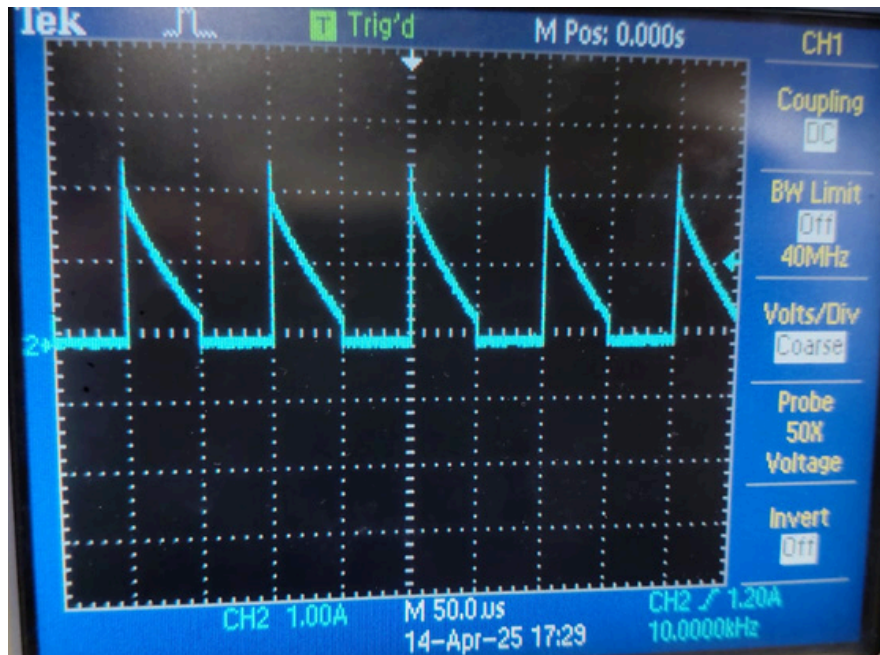
Inductor Voltage L2 at 64% Duty cycle



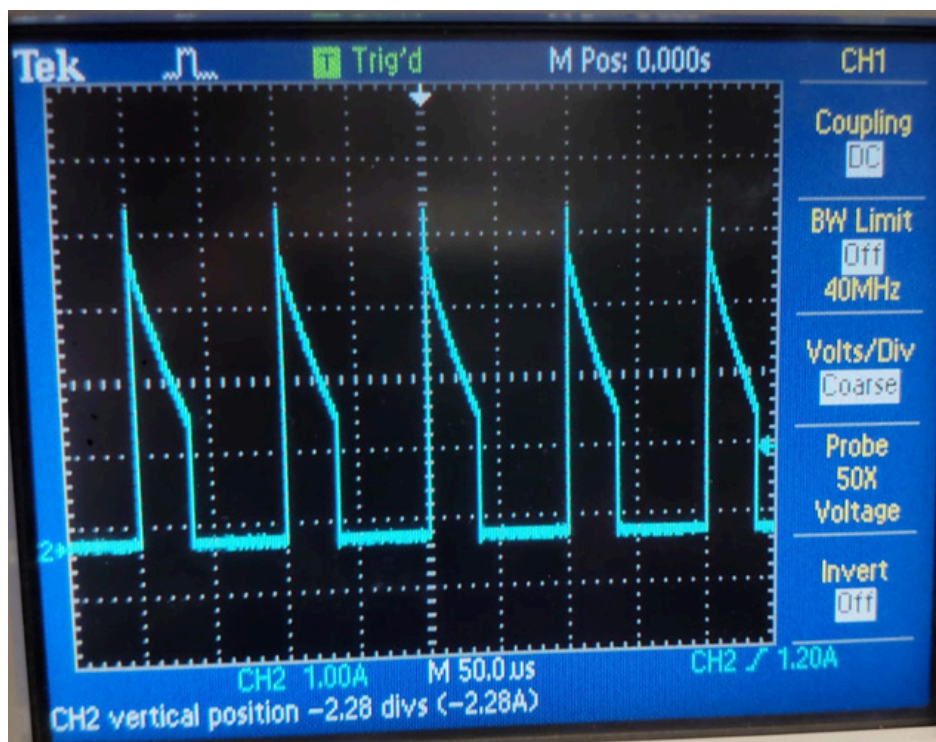
- Diode Current at 33% Duty cycle



- Diode Current at 50% Duty cycle



- Diode Current at 64% Duty cycle



Hardware Implementation

