

E-2 B4

220002048

220002056

220002065

220002079

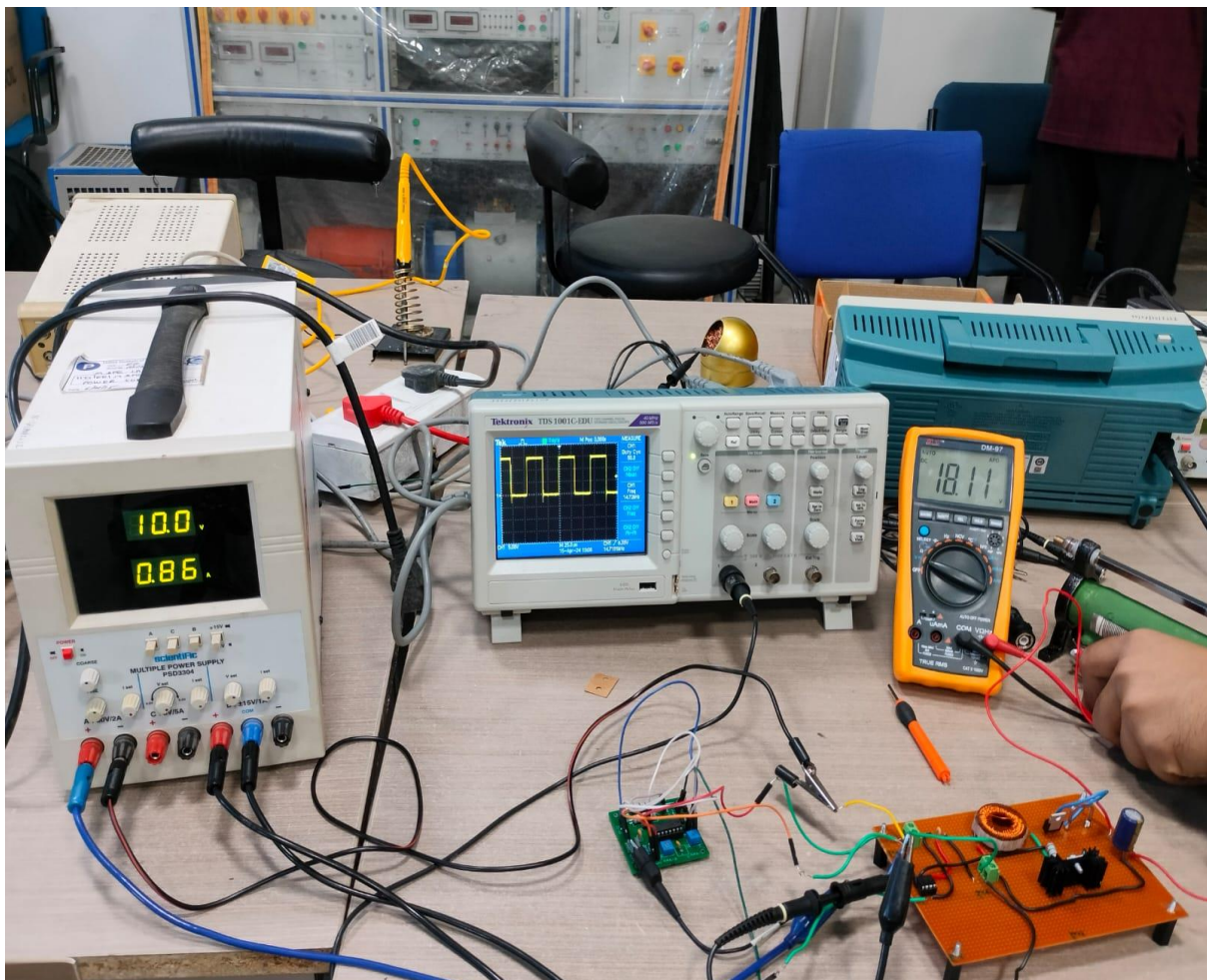
Problem Statement: Boost Converter

a) Specifications: Input 10 V, Output 18 V, Switching frequency 15 kHz, Output current 1 A.

Waveforms of diode current and inductor voltage in CCM.

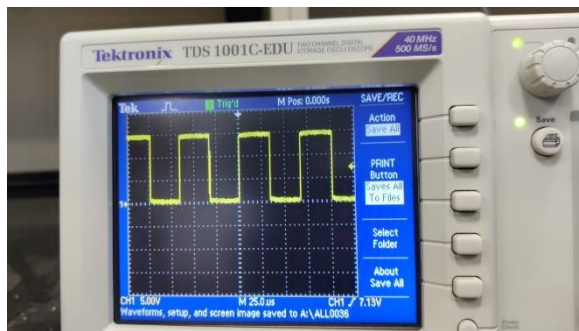
b) Increase load resistance to demonstrate DCM.

Image of soldered gate driver and converter board:

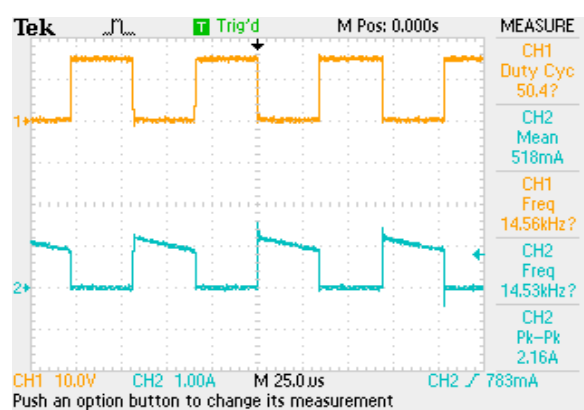
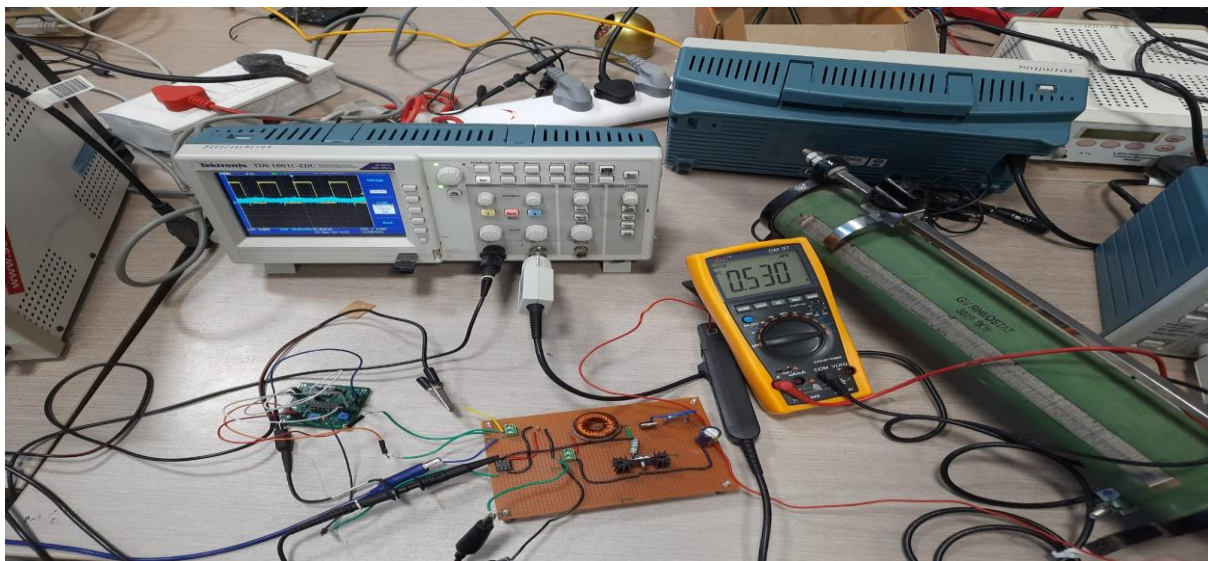
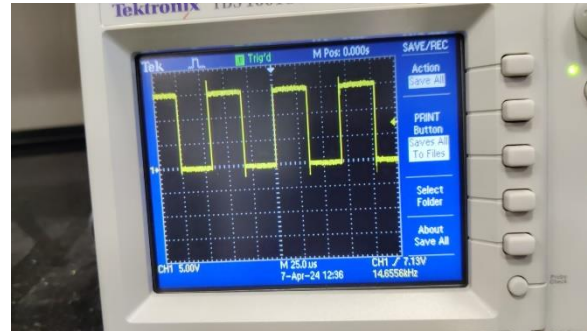


Waveforms:

Pwm

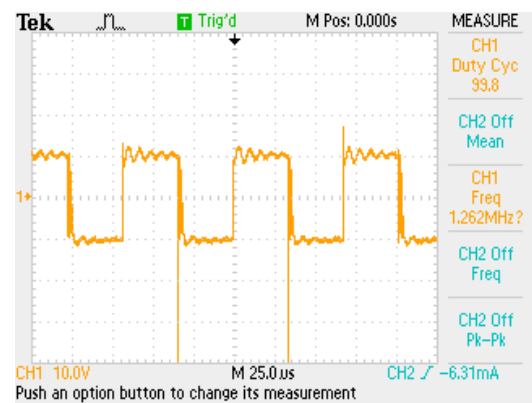


Driver Circuit



Diode current in CCM

R=34ohms

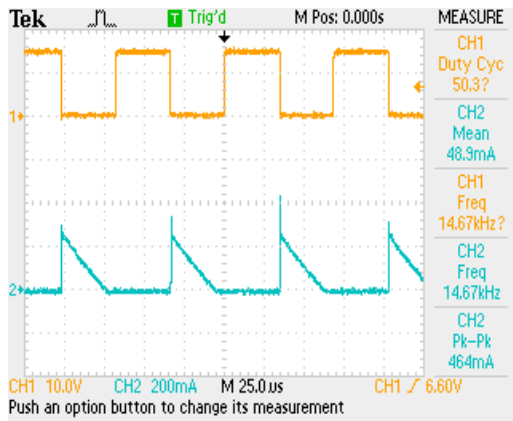


Inductor voltage in CCM

R=34ohms

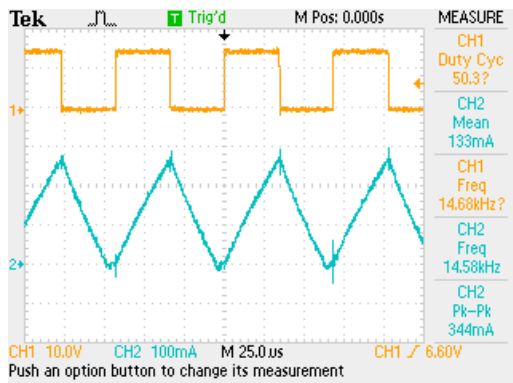
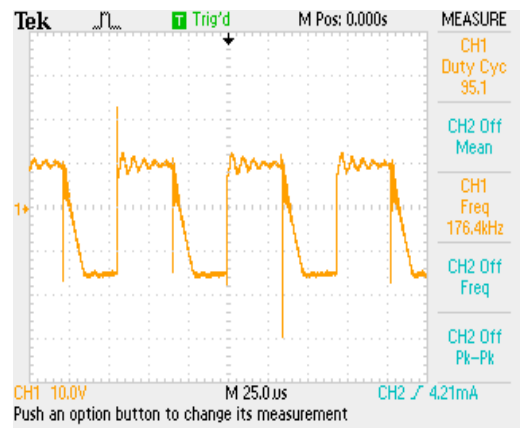
Diode current in DCM

$R=390\Omega$



Inductor voltage in DCM

$R=390\Omega$



Inductor current in DCM

Output Voltage in DCM

