EE518 - POWER CONVERTER ANALYSIS AND DESIGN LAB

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HARDWARE IMPEMENTATION OF BUCK-BOOST CONVERTER

Component used:

1-phase transformer 230v||15-0-15v

Mosfet(irf460),TLP-250,Voltage Regulator(IC 7815)

Diode(1N4007), LED , Diode Bridge Rectifier(DBR)

Resistance (33 ohm) , (1 killo ohm_)

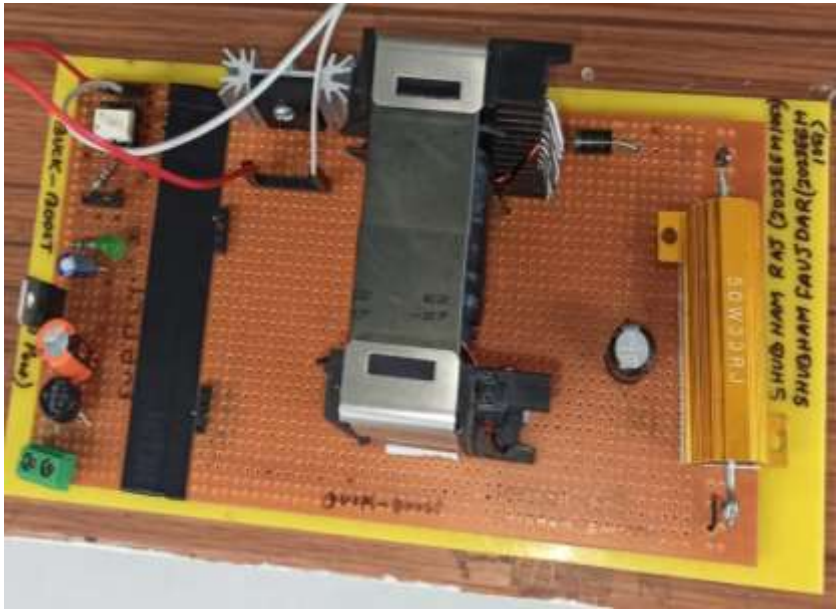
Inductance 1.6 milli Henry …… (1)

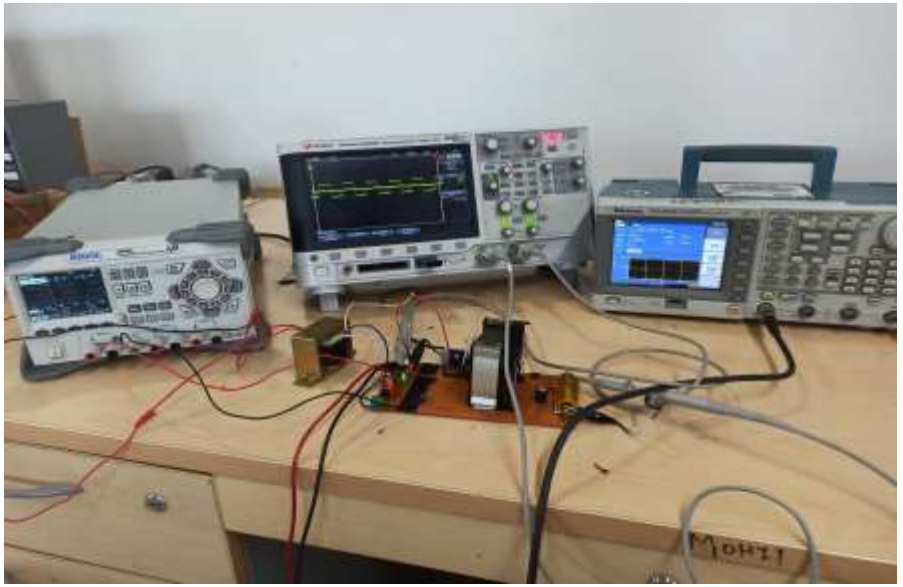
Filter capacitance 47 micro farad(100v)(1)

Rating of BUCK-BOOST:

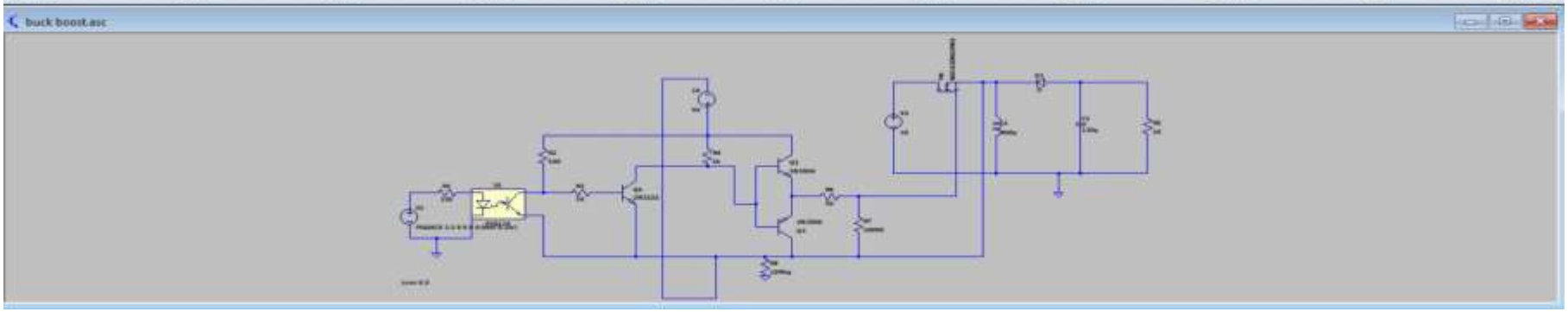
- Variable Dc input volatges : 1 to 30 (volt).
- Power Rating : 50 watts.
- Inductor value: 1.6 milli henry.
- output capaciotor : 47 micro farad.
- output Resistance : 33 ohm.
- Variable Duty cycle:0-1.

Hardware :

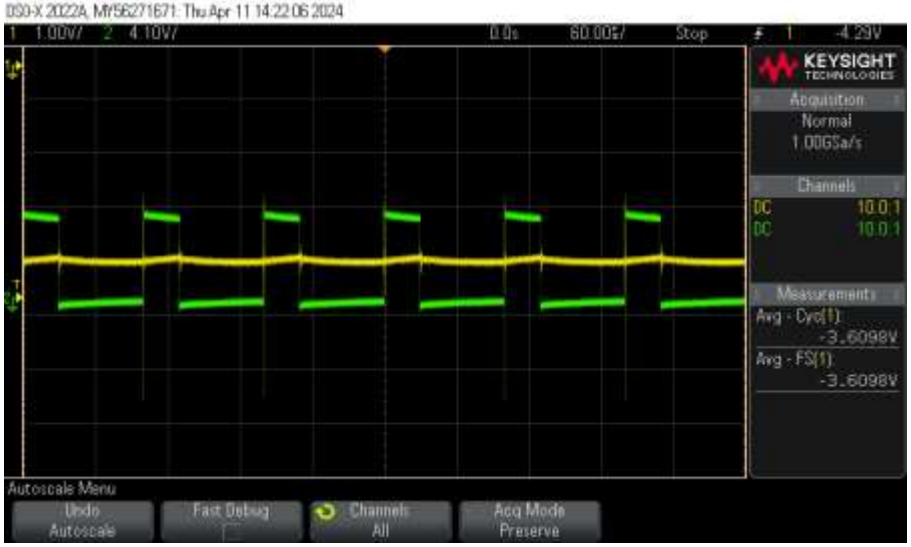


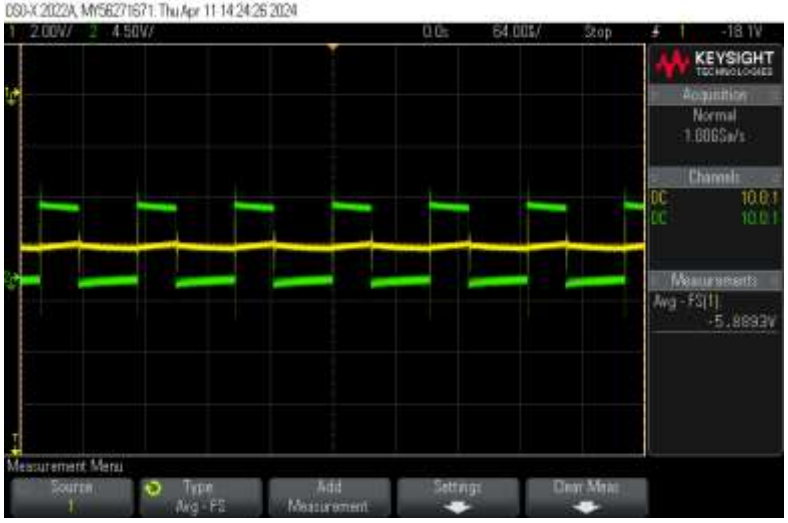


SIMULATION RESULTS:

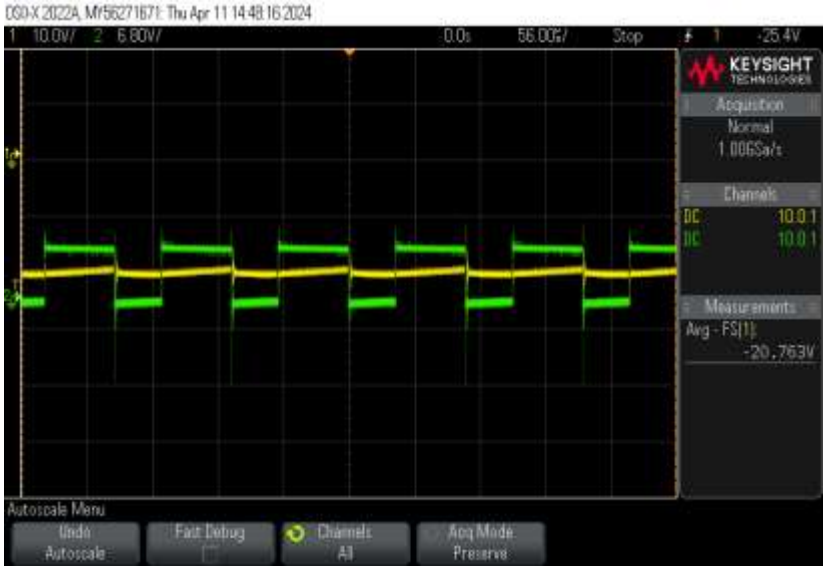


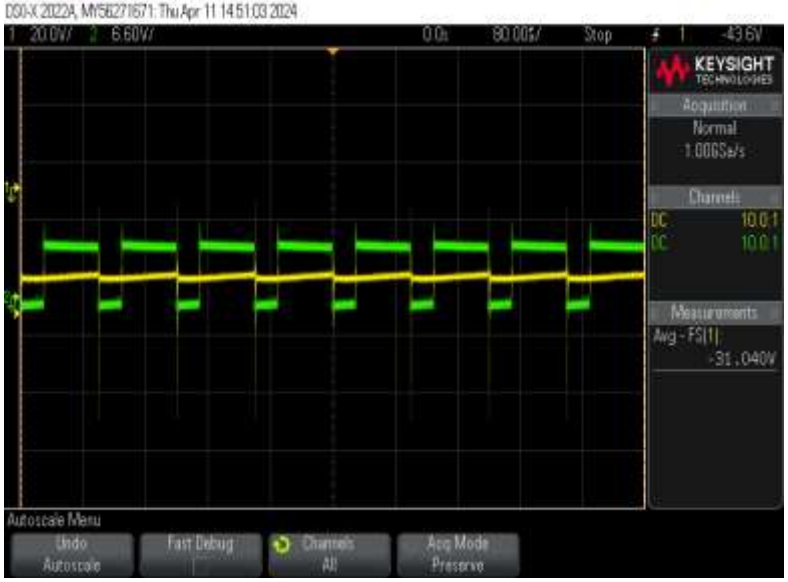
HARDWARE RESULTS:(BUCK-MODE)





HARDWARE RESULTS : (BOOST MODE)





Duty=0.5 Vin=10v and Vout=9.123v

Thank You