SILOV SOLUTIONS
Incubated at Indian Institute of Technology, Delhi

Silov Solutions Private Limited

Incubated at Indian Institute of Technology Delhi, New Delhi

Technology Business Incubation Unit (TBIU), 2nd Floor,
Synergy Building, IIT Delhi, Hauz Khas, New Delhi - 110016

It was established in 2018, Silov Solutions Private Limited aims to develop equipment for efficient utilisation of renewable and non-conventional energy resources with primary focus being the photovoltaic based sources. We make equipment that is in accordance with the international standards and we prioritize product quality. We are constantly expanding and diversifying in order to make cost effective solutions. The company brings out a range of specialized products in the domain of renewable energy for household, industries, educational and research institutions. Incubated at Indian Institute of Technology, Delhi, Silov Solutions excels in the area of Solar PV emulators, DC micro grids, AC microgrids, Data logger, Acid sensors, Solar PV refrigerator, Solar PV based EV charger, renewable rich power system analysis and insulation coordination consulting, design & development of complete solutions for Supervisory Control And Data Acquisition (SCADA), customised embedded system solutions. Our products are designed skillfully and excel in the market by being unparalleled in meeting client needs, compared to other companies. The company endeavours on a road to success under the leadership of Prof. Sukumar Mishra, who is striving to bring about an unprecedented change in the world of technological development.

Contact

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1 kW Solar PV Emulator

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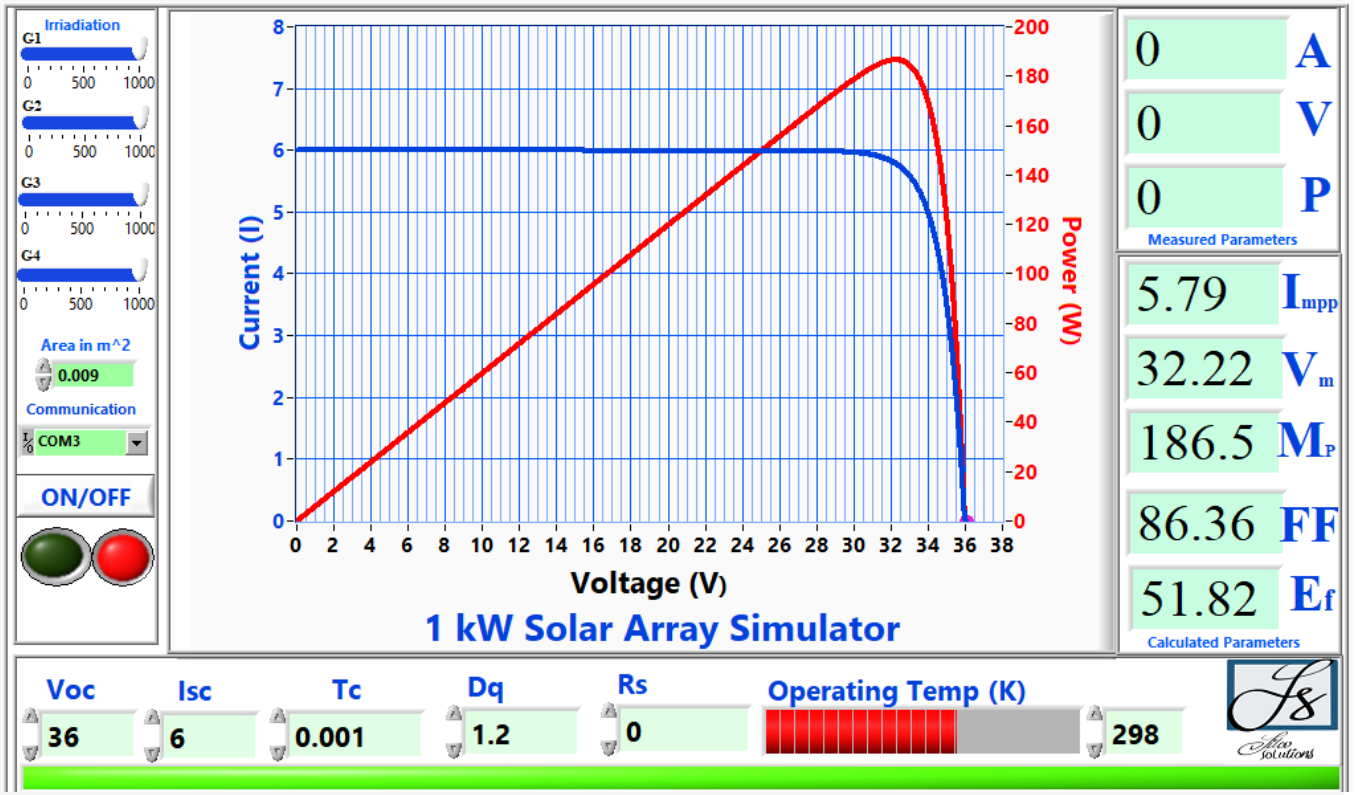
50 V 20 A Solar PV Array Emulator

Input Voltage	: 1 Phase 220-240V AC, 50 HZ
Output Voltage	: 0-50 V, 0-20 A
Voltage Resolution	: 0.1 V
Current Resolution	: 0.1 A
Software mode	: Available

1. Experiments on partial shading conditions
2. Experiments on variable Voc, Isc, Rs, Temperature, Tc
3. Implementation of maximum power point tracking control with additional converter
4. Implementation of grid connected control with additional inverter

Solar Emulator Software



5. Experiments on efficiency calculation
6. Experiments on fill factor calculation
7. Experimentation on voltage, curve tracking of emulator
8. Implementation of grid connected control with additional inverter

2 kW Solar PV Emulator

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100 V 20 A Solar PV Array Emulator

Input Voltage	: 1 Phase 220-240V AC, 50 HZ
Output Voltage	: 0-100 V, 0-20 A
Voltage Resolution	: 0.1 V
Current Resolution	: 0.1 A
Software mode	: Available

1. Experiments on partial shading conditions
2. Experiments on variable Voc, Isc, Rs, Temperature, Tc
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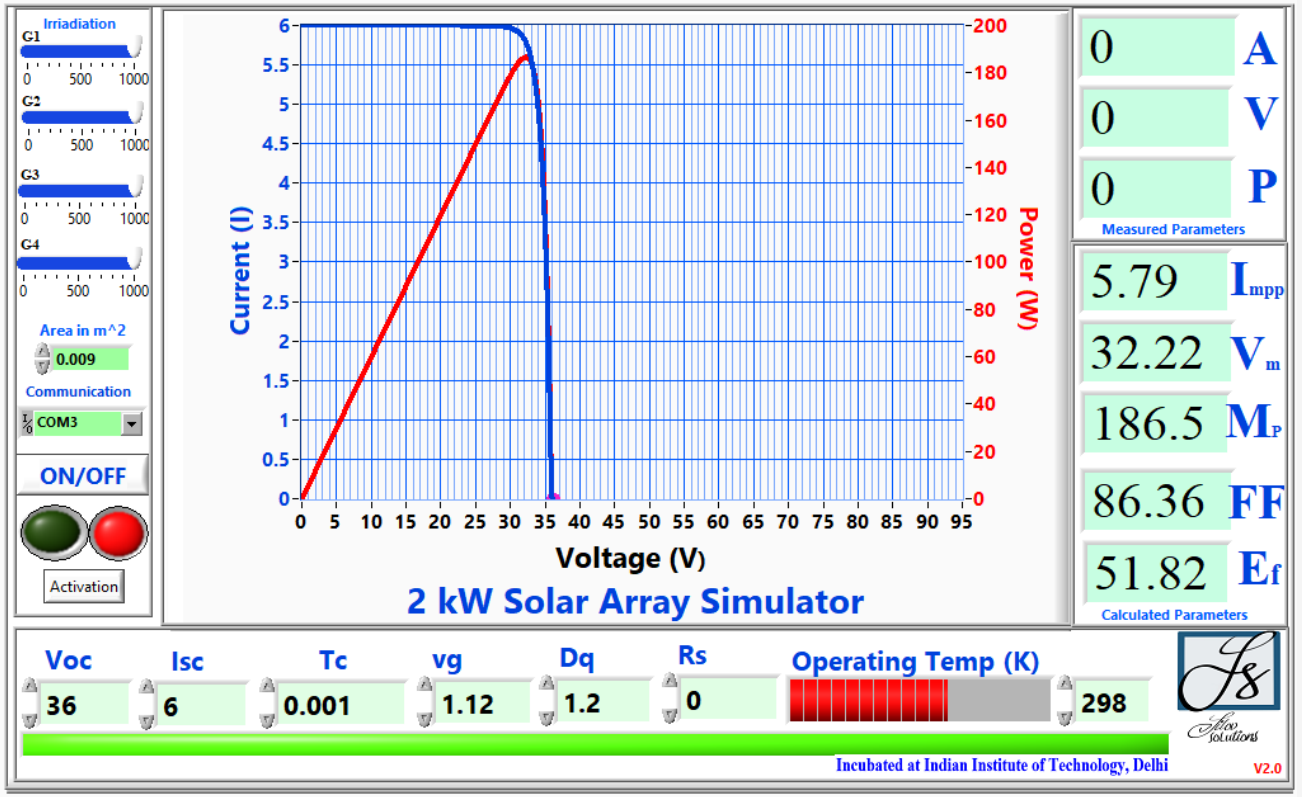
Solar Emulator Software



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DC Microgrid Research Testbed

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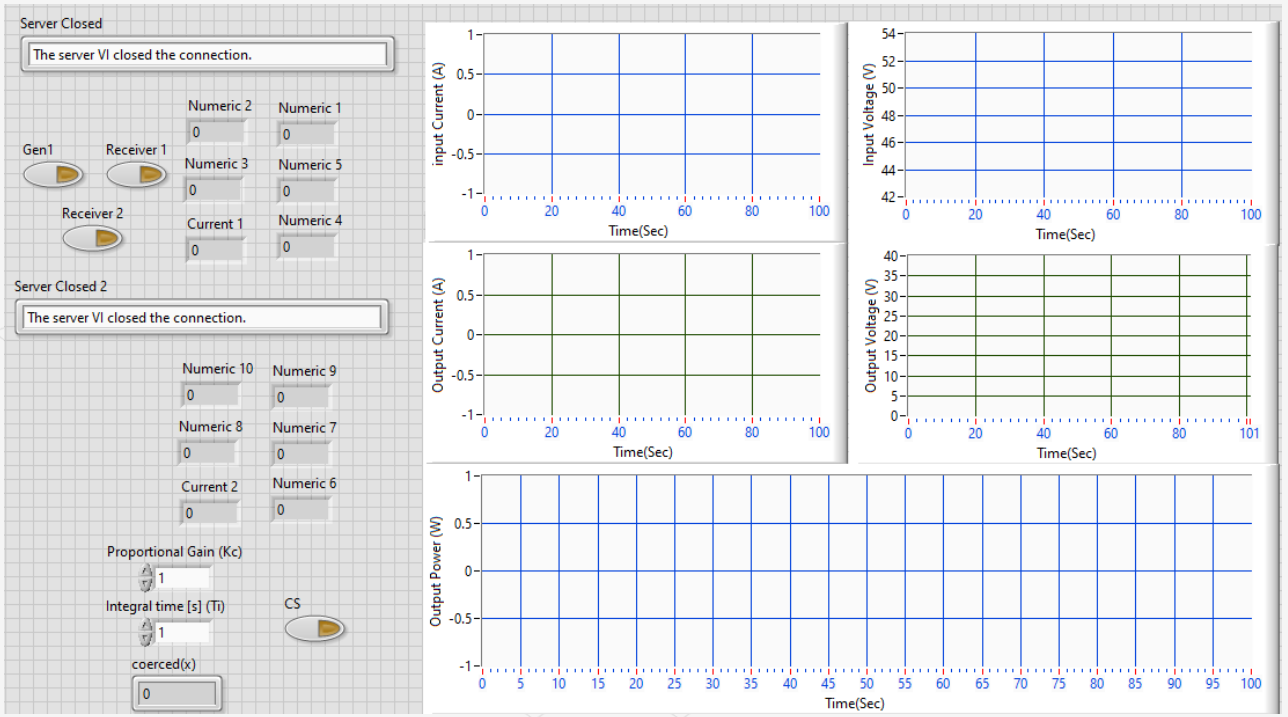
Customizable DC Microgrid Research Testbed

Input Voltage	: 0-50V, Battery Source/ SMPS Source
Output Voltage	: 0-50 V, 0-20 A
Voltage Resolution	: 0.1 V
Current Resolution	: 0.1 A
Programming	: LabView based Programming

1. Experiments on supervisory control- complete program will be given to customer
2. Experiments on distributed control- complete program will be given to customer
3. Experiments on distributed communication with TCP/IP Protocol
4. Implementation of DC- AC grid interconnection with extra hybrid inverter
5. Battery supercapacitor interconnection and analysis
6. Implementation of False Data Injection Attack and Mitigation Scheme
7. Many other experiments with novel control schemes, all real time experiments will be conducted by research scholars

Research testbed Software



Silov Solutions' DC Microgrid is a 3 or 5 kW DC microgrid with solar photovoltaic array emulator, battery, grid-connected inverter, two-wheeler electric vehicle charger, SMPS, and super capacitor (cost will be decided based on actual equipment). Compared to the legacy microgrids, this microgrid has higher resilience and is less likely to fail. This microgrid is not only a revolutionary product, but also aligns with the need for more resilient and plays a major role in the world of smart grids in the field of renewable energy

DC Microgrid Research Testbed

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Input Voltage	: 0-100V, Battery Source/ SMPS Source
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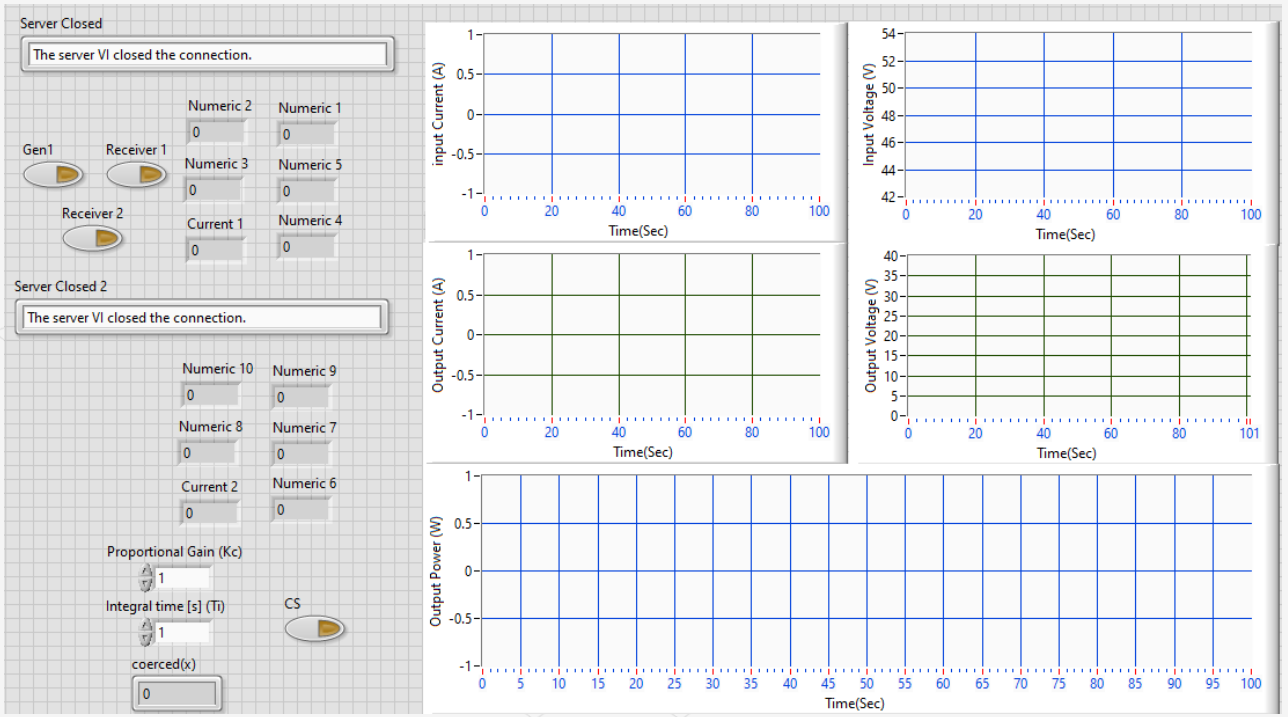
Research testbed Software



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Smart Data Logger

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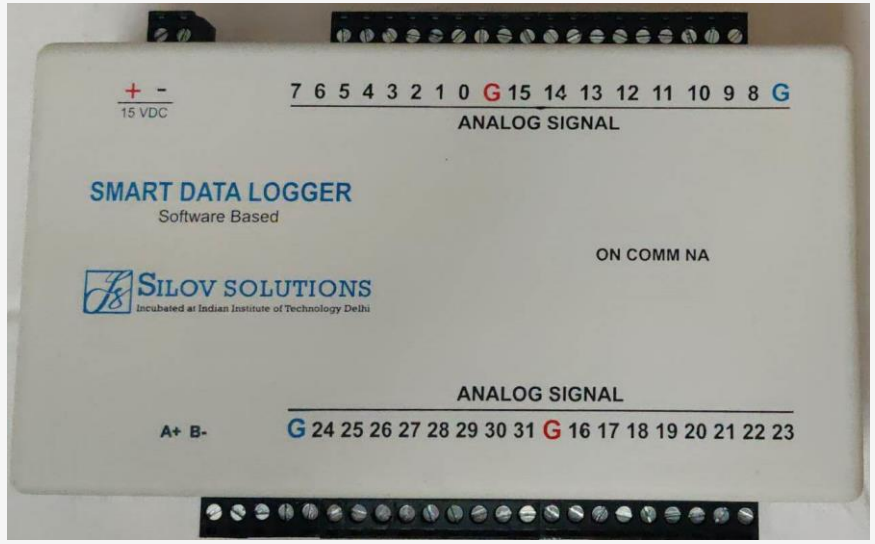
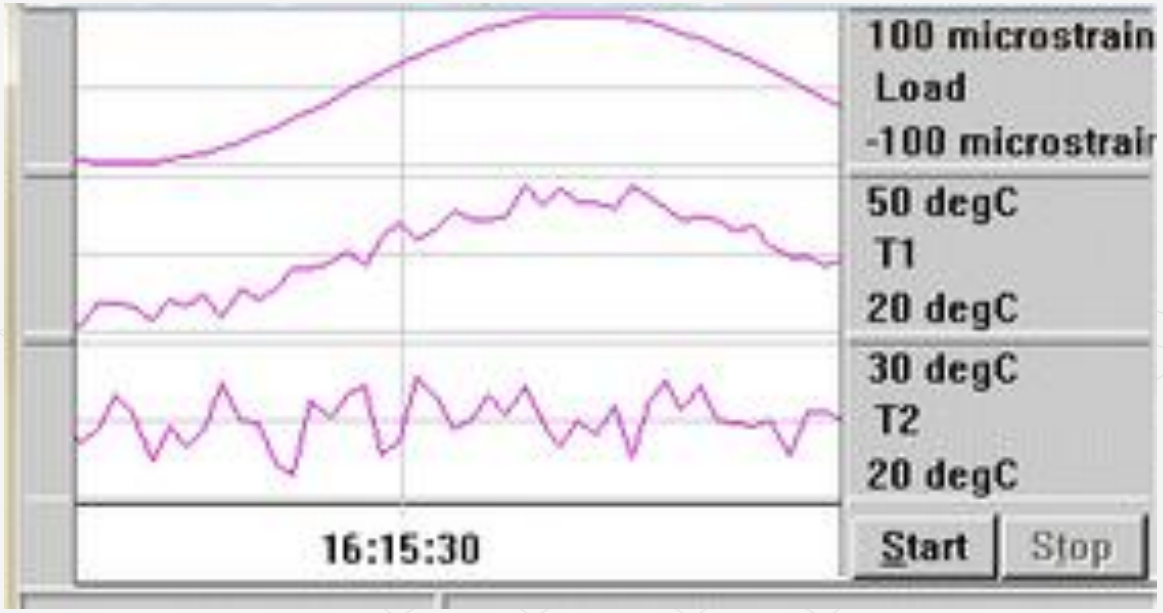
Datalogger



Analog Input Signal	:	Yes, 0-5 V with 0.1 V accuracy
Number of channels	:	32 Channels
Input Voltage	:	15 V DC
Software Program	:	Yes, It will be given

1. Experiments on interfacing with temperature sensor
2. Experiments on interfacing with humidity senosr
3. Experiments on interfacing with voltage/ current sensor
4. Experiments for any transducer with 0-5 V

Datalogger Software



Smart Datalogger is equipped to log the data from modules such as tempertaure, humidity, analog input, digitial input, digital output, data storage options etc.,

Smart DC Fast Charger

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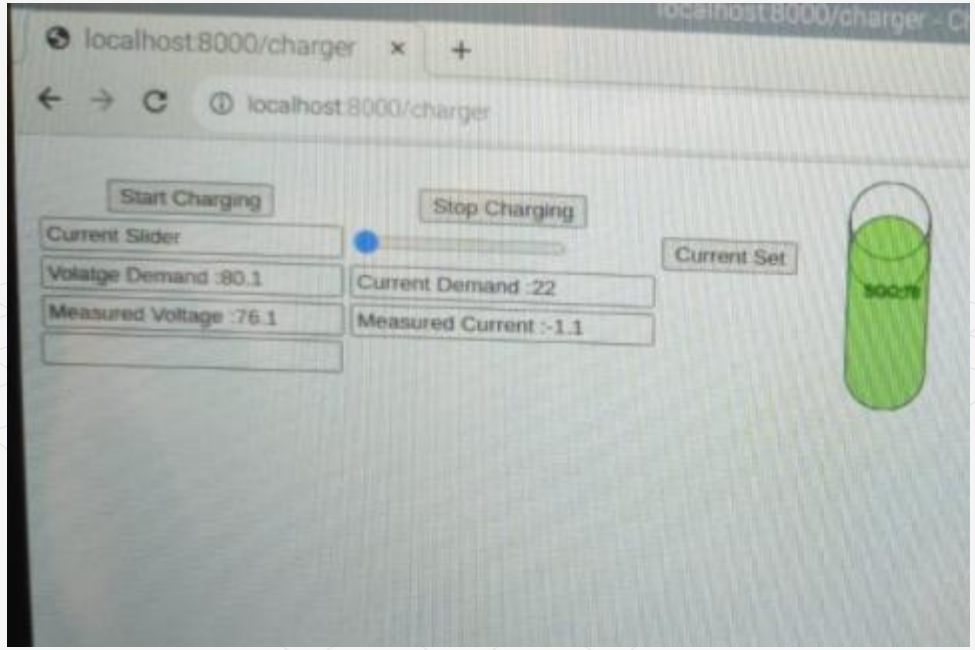
GB/T Based DC Fast Charger

1. Experiments on customized current control for charging EV
2. Experiments on analyzing EV data for various parameters including SoC, Voltage demand, Current Demand
3. Experiments on solar interconnection with solar pv panels
4. Experiments on bi-directional power flow and control

DC Fast Charger Software



Variable DC Fast Charger with Current Control having various parameters from the vehicle

Input Voltage	: 440 V AC, 3 Phase, 50 Hz
Output Voltage	: 80 V, 90 A
Compatible Standard	: GB/T Standard

Matlab Based Programmable DC- DC Universal Converter

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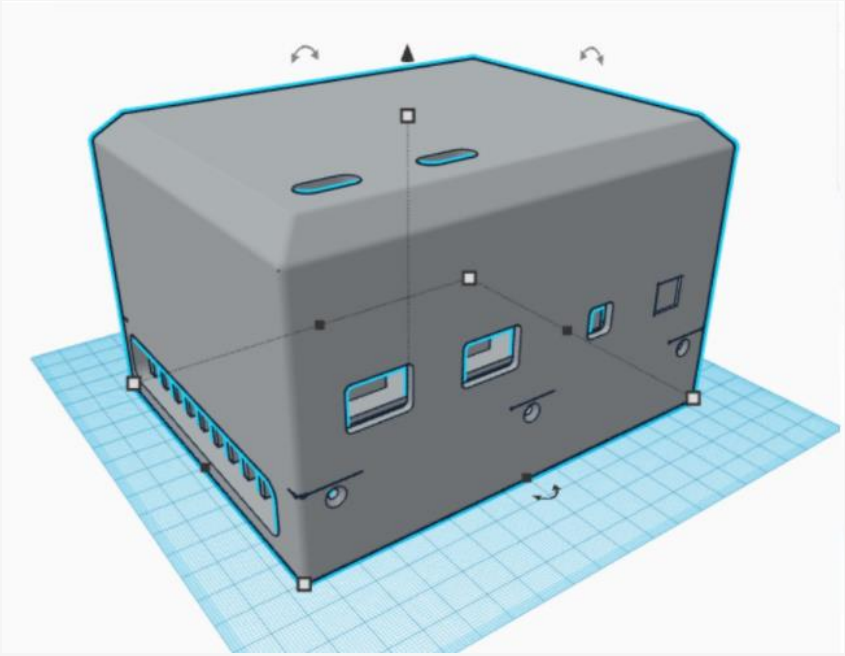
DC- DC Converter



Under Buck Configuration	: Input 10 V to 80 V DC, O/P: up to 80V
Under Boost Configuration	: Input 10 V to 50 V DC, O/P : 11 V to 80 V
Current Rating	: 20 A
Sensors	: Input Voltage, Output Voltage
Sensors	: Input Current, Output Current
MOSFET Driver	: Equipped
PWM Provision	: Equipped
Control through Matlab	: Available
Control through LabVIEW	: Available
Control through Microcontroller	: Available
Access to sensors	: Yes
Possible Efficiency at full load	: 90%
Type	: Non Isolated

1. Experiments on open loop control of synchronous buck converter
2. Experiments on closed loop control of synchronous buck converter
3. Experiments as a maximum power point tracking control
4. Bi-Directional Operation