

# Cell Level Traction Battery Performance Test System

- Bi-directional Power cyclers, which acts as source and sink during charge/discharge of batteries
- Individual cells (18650, Prismatic etc) can be tested. System has 26 channels with different current capacities from 2 A, 25A, 50 A, 100A, 300A which can be paralleled together to get higher charge/discharged currents
- Integration and Emulation of Battery Management System (BMS) through Controller Area Network (CAN) bus interface
- Performance and Characterization Test
  - Measurement of Static capacity
  - Constant power discharge
  - Hybrid pulse power (low and high current levels) Characterization
  - Self-discharge
  - Cold cranking testing of batteries
  - Charge sustaining energy efficiency
  - Charge depleting energy efficiency
  - Perform charge/ discharge cycling of batteries to obtain charge and discharge capacity, energy and DC internal resistance
  - Reserve Capacity Testing
  - Start/Stop testing
  - Cycle Life Test
  - Map-based cycle life at various DOD (depth of discharge) and current (Ampere) test conditions
  - Battery Cycle life testing and Calendar Life Test.
  - Reference performance testing
  - Electrical Abuse Test
    - Overcharge/Over voltage
    - Over-discharge



## Specifications:

- Voltage 0V to 18V DC for each channel
- System with each channel independently capable of both source, and sink operation throughout the voltage range of 0 to 18V DC
- Battery Channels
  - 04 Channels  $\pm$  2 A
  - 08 Channels  $\pm$  25 A
  - 08 Channels  $\pm$  50 A