

Automated test solutions for the entire product lifecycle

FLEX BMS™ Validation System



APPLICATIONS

types of BMSs

regression testing

Functional safety testing

Simplified evaluation of multiple battery management systems

The *FLEX BMS™* Validation System is a quick-connecting, highly flexible test system for rapid evaluation of centralized, single-board and distributed battery management systems. Utilizing Bloomy's industry-leading battery cell simulators, COTS instrumentation, and industry-standard connectors and models that run in real-time, the *FLEX BMS™* Validation System can easily be reconfigured to test a wide variety of BMSs. The *FLEX BMS™* Validation System is used by national and regional safety and standards labs for certifying the BMS for a wide array of e-mobility products and applications.

FEATURES

- Up to 48 cells of simulation
- Voltage- or resistance-based thermistor simulation
- Simulate real pack current charging and discharging up to 600A through the BMS
- Simulate and monitor all BMS IO signals & communications
- Easily reconfigurable with standard DSub connectors and breakout boards
- Intuitive UI with model-based or direct IO control of simulated signals
- Ergonomic, flexible and easy-to-use

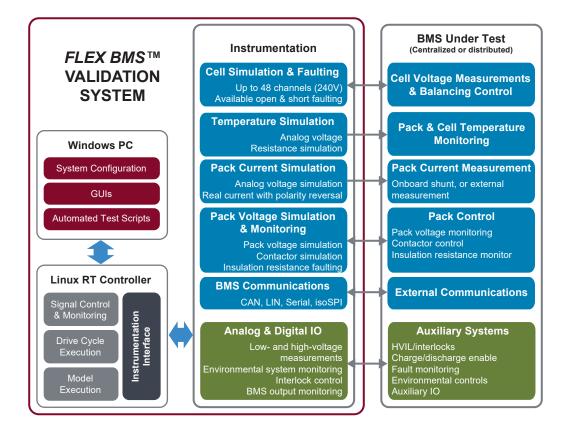
Need to simulate more than 48 cells? Inquire about Bloomy's full-featured BMS HIL Test System.

Rapid evaluation of many different

Hardware, software and firmware

SoC and SoH algorithm tuning

SYSTEM DIAGRAM



HARDWARE SPECIFICATIONS

The following specifications are standard. Systems can be customized to accommodate specific requirements.

SIGNAL TYPE	QTY	DESCRIPTION	DETAILS
Cell Simulation	12-48	Simulation of individual cells	0-5VDC, Sink/Source 500mA ±3mV accuracy, 0.1mV resolution
Temperature Simulation	4-32	Simulation of cell/pack temperatures	Analog Voltage (±10V) Resistance (0-65kΩ)
Pack Current Simulation	1-2	Simulation of full pack current (eg 400A)	1-4 Analog Voltage (±10V) (isolated or non-isolated) 1x Programmable PS (30A, 60A, 150A, 600A options) with polarity reversing relays for charge/discharge
Vehicle Discretes	2-8	Controlling ignition, interlock, enable, CAN power	Fixed power supply with 5, 12, or 24V digital output control
Insulation Resistance Sim	1-2	Simulation HV resistance to test BMS monitor circuits	Fixed resistors with high voltage switching
Communications	1-4	BMS-Vehicle, Module, etc.	CAN, LIN, Serial, IsoSPI
Contactors	2-4	Simulation of contactors to verify BMS control	Real contactors w/faulting or HV DCDC with modeling
Misc. BMS IO	4-12	Misc. analog/digital inputs and outputs to/from BMS	Analog/digital inputs & outputs for simulation/monitoring
Vehicle/CAN Power	1	5, 12V or 24V main power	Available as fixed or Programmable Power Supply

Call (860) 298-9925 or visit www.bloomy.com