KT-BMS Tester

Battery Management Test System

Your Key Benefits

- Customizable channel and scaling configuration file in JSON format for Automation Framework integration

- Modular and flexible PXI-based system adjustable for future requirements

- Works with Techways Cell Simulator, NI Data Acquisition System and Vector Vehicle Networking Hardware

- Integration with existing vehicle restbus (RBS)

- Linear, Polynomial, Table scaling enables various sensor simulations & measurements

- Configurable cell monitoring settings with real-time cell status measurement (Voltage & Current)

- BMS output signal & network message monitoring

- Tester safe operation interlocks

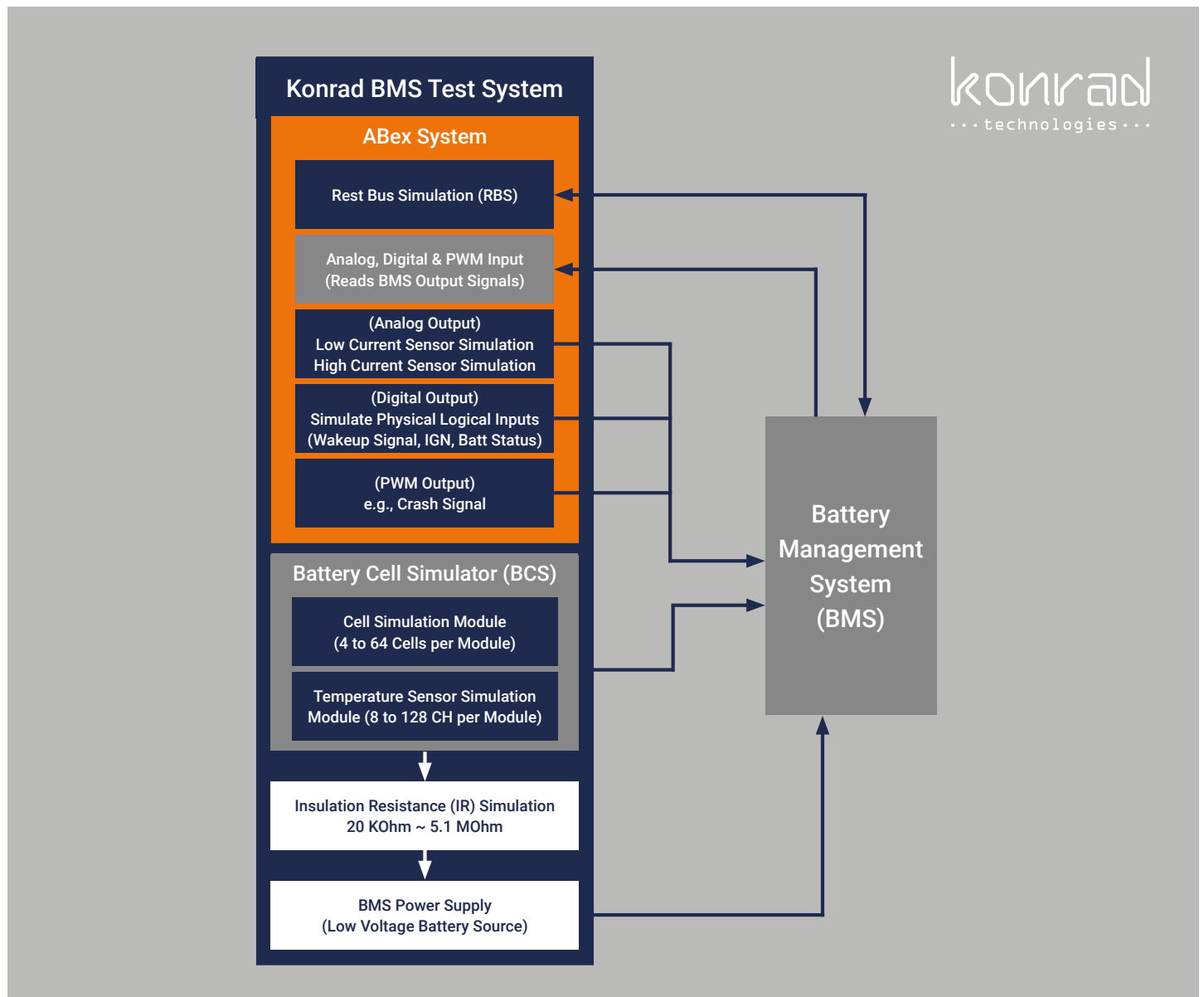- Customizable cell & temperature simulation channel count (ex.192 Cells + 48 CH temperature)

Overview

The Konrad Technologies Battery Management Test System (KT-BMS) allows customers to validate and test their BMS ECU. KT-BMS enables electronic control units (ECUs) testing & validation by reproducing the environment in the vehicle to bring the ECU into operation mode.

Leveraging the KT-BMS Tester, test engineers can effectively validate their Battery Management systems. The solution supports connectivity to Battery Cell Simulators to simulate the battery for the ECU as well as SOFT ECU integration if required.

Features

- Connectivity to Battery Cell Simulation

- Temperature Sensor Simulation

- Insulation Simulation

- Current Sensor Simulation

- Measurement IO for ECU : Power supply, CAN, LIN, AI, AO, DI, DO, PWM, OBD

- Individual Cell Simulation Source

- Battery Voltage Simulation Source

- Cell voltage control options with all cell, even cell, odd cell, individual cell, and a range of cells

- ASAM XIL interface for test automation

- Configurable Cell/Battery voltage and Temperature sensor simulation to validate the safety operations

- Ignition and Battery control

- Battery pack temperature control options with all, even, odd, individual, and a range of channel

System Overview

Konrad BMS Test System

ABex System

- Rest Bus Simulation (RBS)
- Analog, Digital & PWM Input (Reads BMS Output Signals)
- (Analog Output) Low Current Sensor Simulation High Current Sensor Simulation
- (Digital Output) Simulate Physical Logical Inputs (Wakeup Signal, IGN, Batt Status)
- (PWM Output) e.g., Crash Signal

Battery Cell Simulator (BCS)

- Cell Simulation Module (4 to 64 Cells per Module)
- Temperature Sensor Simulation Module (8 to 128 CH per Module)

Insulation Resistance (IR) Simulation 20 KOhm ~ 5.1 MOhm

BMS Power Supply (Low Voltage Battery Source)

Battery Management System (BMS)

Features vs. Functions Comparison

Functions of BMS

- Cell Voltage Monitoring
- Battery Voltage Monitoring
- Temperature Monitoring
- Insulation Monitoring
- High and Low Current Monitoring
- Cell Balancing
- Over Charge and Deep Discharge, Over Voltage and Under Voltage, Over Temperature and Under Temperature prevention (Main SOA)
- Vehicle Network Communication (CAN/LIN/A-Eth)

Features of KT-BMS Tester

- Individual Cell Simulation Source
- Battery Voltage Simulation Source
- Temperature Sensor Simulation
- Configurable Insulation Resistance Simulation
- Current Sensor Simulation
- Configurable individual cell voltage
- Configurable Cell/Battery voltage and temperature sensor simulation to validate the safety operations
- Rest Bus Simulation (RBS) and Network Monitoring