

PRODUCT BRIEF



BEVOP™ provides the hardware and software components needed to accelerate the development of a Battery Management System (BMS) for a wide variety of applications including automotive and others with different levels of safety requirements.

The development board incorporates key elements for ASIL compliant designs. These include major components such as Infineon's AURIX™ MCU, TLE9012 battery monitoring and balancing IC with matching TLE9015 iso UART transceiver, and OPTIREG™ PMIC for Functional Safety. They are fully integrated to operate with the backplane to provide CAN, Ethernet, Analog Input, Digital I/O, High and Low Side switch and even additional iso SPI.

Using the onboard 4 x TLE9012, 48 lithium-ion (Li-ion) cells can be monitored and balanced. Each of the four channels accommodate 12 cells and communicate with each other using UART. Additional isolated channels can be easily added for ultimate flexibility in creating larger battery packs of higher 400+ voltages and currents. Other BMS components such as pack monitoring and coulomb counting that use iso SPI can also be easily added.

With battery cells connected to BEVOP™ the available software on the AURIX™ MCU allows the monitoring and balancing of them, and developers can access important data and control via CAN or Ethernet using Neutron Controls GUI on a host PC. Both the GUI and the firmware are available with API's and reference code for quick modification or used as a base for rapid development.

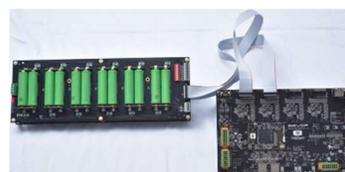
Using it as the master MCU, it has all the necessary components and interface to create a complete BMS to control contactors, chargers and load or can be used as modular slave MCU.

Features

- 32-bit AURIX™ TriCore™ Microcontroller – TC399
- 4 x TLE9012DQU Li-ion 12 cell per channel monitoring and balancing with temperature sensing
- Dual iso UART and dual iso SPI for isolated ring topology communications between BMS elements
- Communications backplane including CAN and Dual Ethernet and control I/O
- Reference software and drivers integrated with MCAL and SafeRTOS/AUTOSAR

Applications

- Battery Electric Vehicle (BEV)
- Hybrid Electric Vehicle (HEV)
- Plug-in Hybrid Electric Vehicle (PHEV)
- Fuel Cell Electric Vehicle (FCEV)
- 12V Li-Ion battery systems
- Energy Storage System (ESS)
- Home Energy Storage system
- eBike battery management system



Packaging

- 4 x Neutron Controls 18650 Battery Strips for 192V pack
- 4 more BEVOP™ to achieve >800V pack
- BEVOP™ Total Development Platform with contactors, charger and inverter