



Elithion™ Lithiumate pro

Battery Management System for Lithium Ion packs

Customer Specific Battery Management Solutions that will transform Li-Ion or Lipo packs from a collection of cells to a true smart battery system compliant with the European standards.

Customer-Specific Solutions

GHITECH is an official reseller of Elithion™ Battery Management Systems (BMS) and cell boards within the European Union. But GHITECH is more than a reseller.

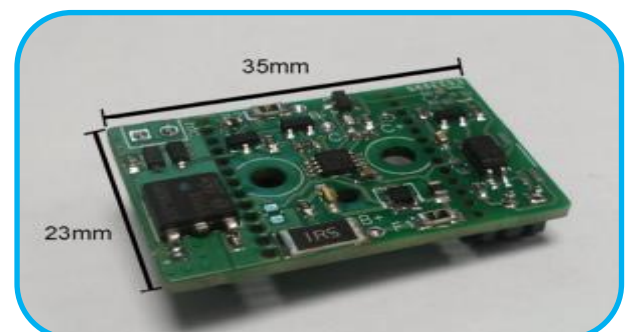
Over the years GHITECH has gained a lot of experience in applying Elithion™ systems within the Automotive sector. Doing so, GHITECH has frequently modified the standard Elithion™ products to customer specific requirements.

GHITECH is able to rapidly develop customer-specific battery management solutions. This allows customers to benefit from GHITECH's proven technology, technical competences and manufacturing services.

GHITECH is specialized in developing battery management solutions for automotive applications that require compliancy with European certification standards and regulations.

General Product description

Performs monitoring, evaluation, communication, balancing and protection of the battery.



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Versatile

- Compatible with most chargers, motor drivers
- Fully configurable, field programmable
- Supports all cell form factors
- Handles most Lithium chemistries
- CAN and RS232 communications

Safe

- Protects pack from over current
- Detects loss of isolation
- Distributed = few wires in HV pack

Easy to install

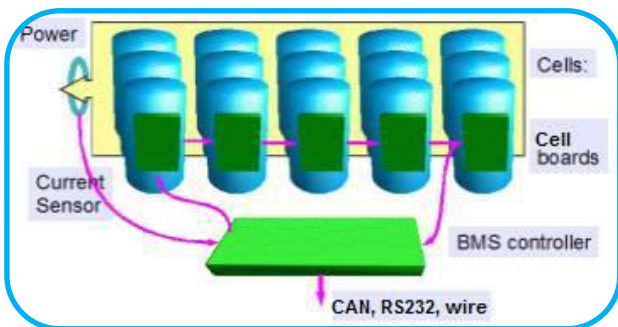
- Off the shelf components
- Single wire to adjacent cell boards
- Life prolonging:
 - Balances pack's SOC
- Protects pack from under/over voltage, charge and temperature

BMS System

In its most basic form, the BMS consists of a BMS controller (the Master) and a number of cell boards for cell sizes, equal to the number of cells in series.

A System may also include

- One or more current sensors to sense load and source (charger) current
- A High Voltage Front End (HVFE) to sense pack voltage and current, and to detect loss of isolation
- A State Of Charge display
- Balance Boosters™ to increase the level of balancing current, one per cell board



Example: GHITECH Cell Board

GHITECH has developed new improved cell boards that are compatible with regular cell boards from Elithion™ that are used for pouch cells.

Improvements

- Cell boards are protected with fuses
- Reverse polarity protection
- Overvoltage protection
- 50% faster cell-voltage balancing
- 40°C lower temperature during balancing
- Better mounting clearance
- Integrated Balance Boosters

Specifications

General Controllers

Supply voltage (Vdc nom)	12
12 V supply current (mAdc nom)	150
Control inputs' voltage (Vdc nom)	0 to 12
Digital outputs' sink current (Adc)	1.5 cont max 5 peak max
Analog outputs' voltage (Vdc)	0 to 5
RS232 rate (baud)	19200
CAN rate (kHz)	125/250/500/1000
Reading rate (readings/s)	0.1 to 1.5
Number of cells monitored	1 to 255
Operating temperature (°C)	-40 to +85
Volume (liters)	0.8
Sensed battery current (Adc)	5 to 600

General Cell boards

Cell voltage sensing range (Vdc)	2.09 to 4.54
Cell voltage sensing accuracy (mVdc)	+/-20
Cell-board temperature sensing accuracy (°C)	+/-4
Cell current drain, standby (µA max)	2.0
Cell current drain, operating (mA nom)	2
Cell current drain, balancing (mA nom)	200
Battery isolation (kV)	2.5



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