Smart Battery Management for Mobile Robotics 7-14 Cells

MR-BMS771

Last Updated: Aug 21, 2025

The MR-BMS771 is a standalone battery management system (BMS) reference design suitable for mobile robotics, such as drones and rovers, supporting 7- to 14-cell batteries.

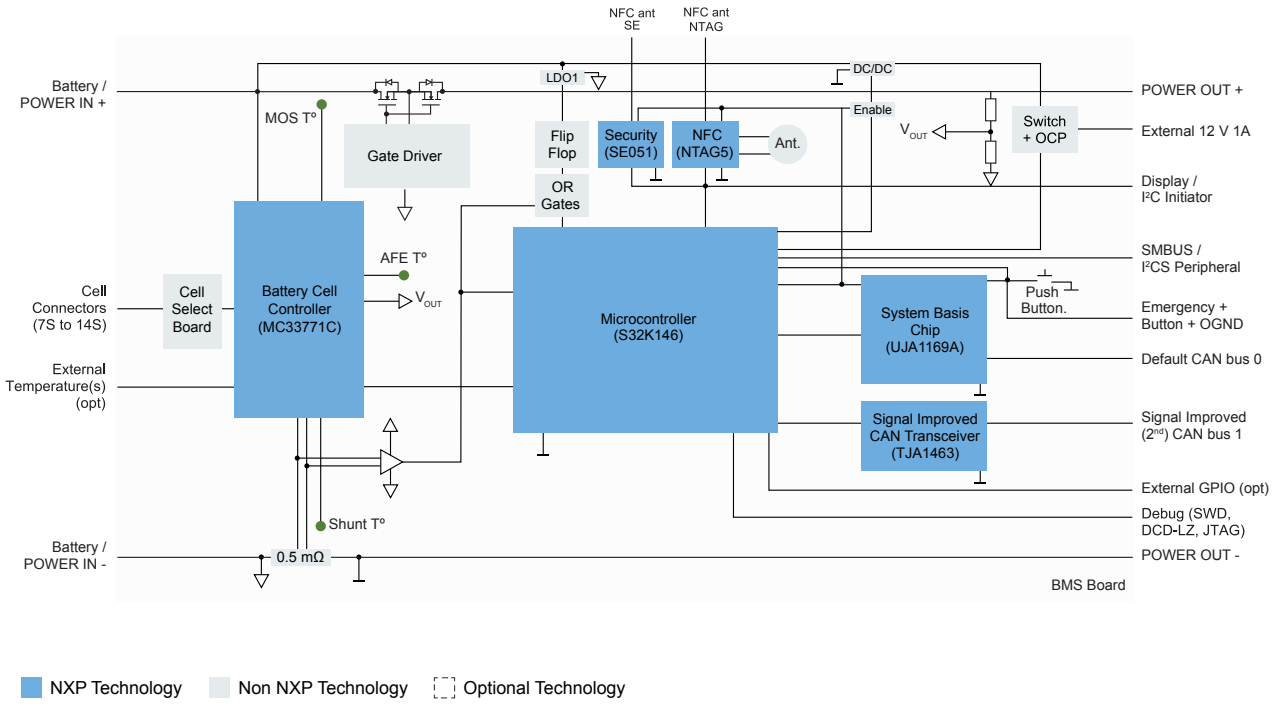
The design is suitable for other applications, such as portable medical devices, high-energy power tools and personal mobility (wheelchairs/scooters), all of which benefit from high-quality battery control.

The MR-BMS771 features a 7- to 14-cell voltage measurement, pack voltage measurement and output voltage measurement, as well as current sensing (coulomb counting), 1 to 3 possible cell temperature sensors and power switch. Other features include 2 controller area network (CAN) buses, inter-integrated circuit (I²C), display, near-field communication (NFC), universal asynchronous receiver-transmitter (UART) 12 V 1 A output and secure element.

The S32K146 microcontroller unit (MCU) allows for complete software flexibility and communication via CAN/unmanned aerial vehicle CAN (UAVCAN) or I²C/system management bus (SMBus).

Easily make your own control algorithms with Model-Based Design Toolbox (MBDT) in MATLAB SimuLink.

MR-BMS771 Block Diagram



View additional information for Smart Battery Management for Mobile Robotics 7-14 Cells.

Note: The information on this document is subject to change without notice.

www.nxp.com