



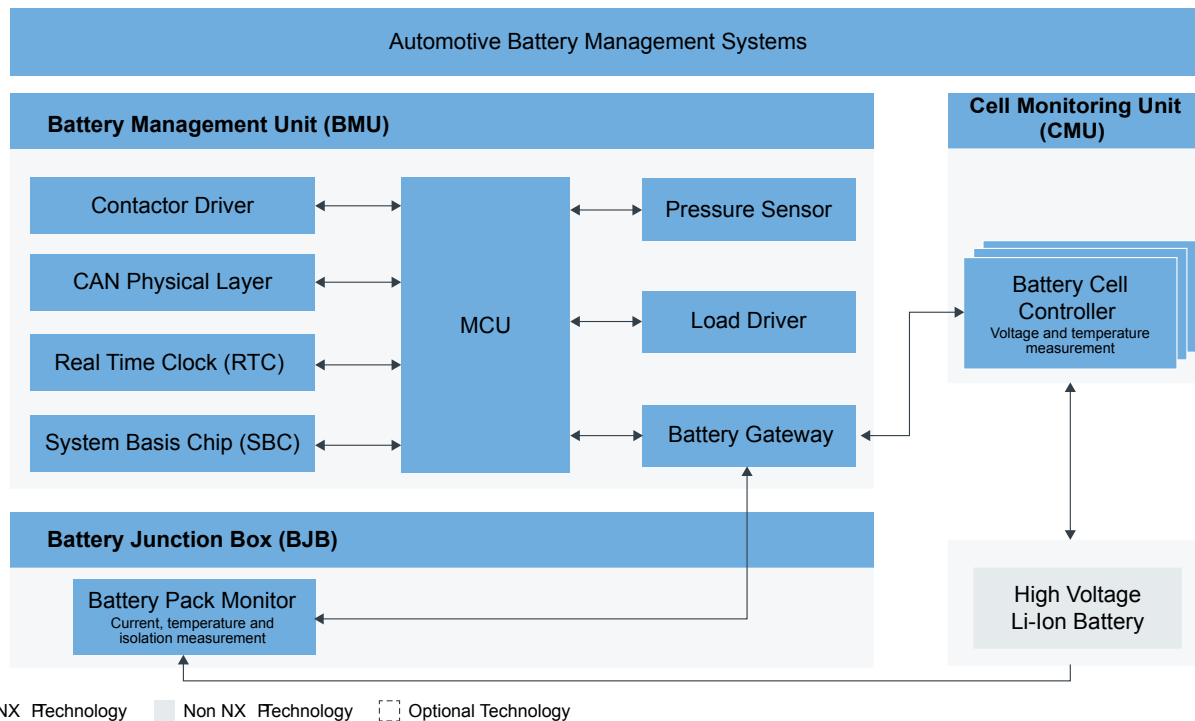
Battery Management System (BMS)

Last Updated: Feb 26, 2025

Battery management systems (BMS) enhances the performance and ensures the safety of a battery pack composed of multiple cells. Functional safety is critical as lithium-Ion batteries pose a significant safety hazard when operated outside their safe operating area. That's why our BMS portfolio offers high measurement accuracy after soldering and aging in additional ISO 26262 support up to ASIL D functional safety capability.

Committed to sustainable mobility and renewable power grids, we offer innovative BMS solutions including the complete chipset for wired or wireless BMS communications, common software and functional safety documentation. With our reference designs, we accelerate our customer's development and enable modern BMS innovations for automotive and industrial applications.

High Voltage BMS Block Diagram

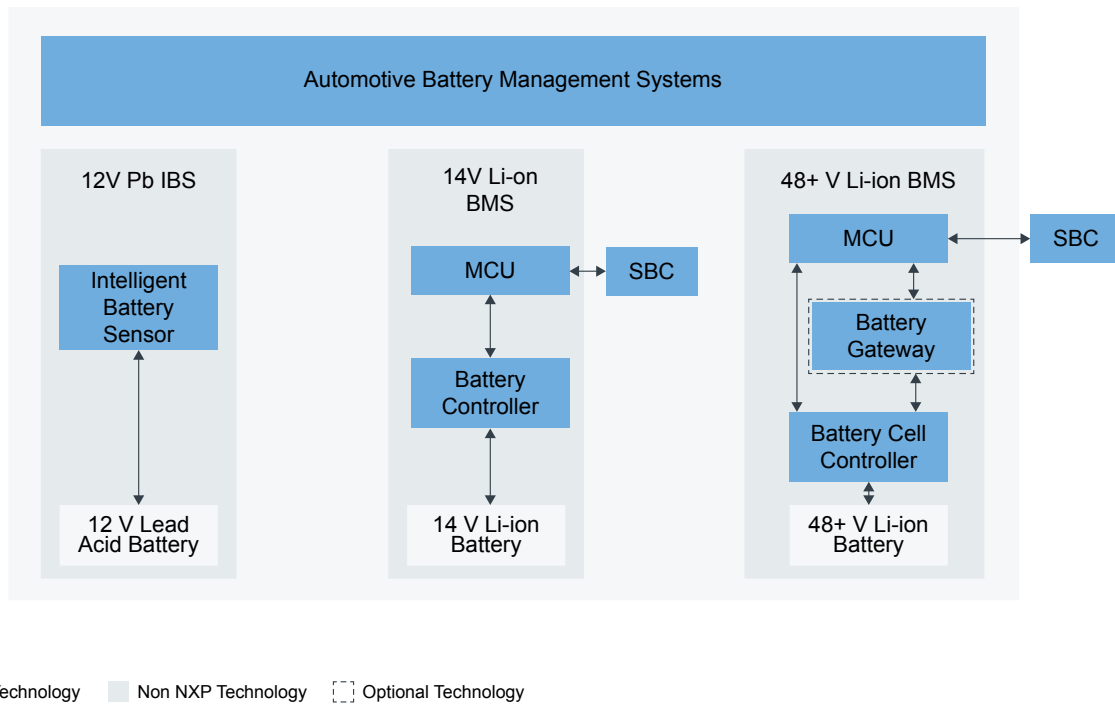


Recommended Products for High Voltage BMS

Automotive Battery Management Systems	<ul style="list-style-type: none"> • High Voltage Battery Management System (HVBMS): High Voltage Battery Management System (HVBMS) • Battery Management Systems (BMS) Hardware Solutions: Battery Management Systems (BMS) Hardware Solutions
Contactor Driver	<ul style="list-style-type: none"> • HB2000: SPI Programmable 10 A H-Bridge Brushed DC Motor Driver
CAN Physical Layer	<ul style="list-style-type: none"> • TJA1145A: High Speed CAN Transceiver with Partial Networking, CAN FD Data Rates up to 5 Mbit/s

RTC	<ul style="list-style-type: none"> • PCA2131: Nano-Power Highly Accurate RTC with Integrated Quartz Crystal for Automotive Applications
System Basis Chip	<ul style="list-style-type: none"> • FS26: Safety System Basis Chip with Low Power, for ASIL D Systems
MCU	<ul style="list-style-type: none"> • S32K3: S32K3 Microcontrollers for Automotive General Purpose
Pressure sensor	<ul style="list-style-type: none"> • NBP8-9x: Highly Integrated Battery Pressure Monitor Sensor
Load Driver	<ul style="list-style-type: none"> • MC12XS6: External Automotive Lighting Multi-Channel eXtreme Switch
Battery Gateway	<ul style="list-style-type: none"> • BMX6X02: General-Purpose Battery Management System Communication Gateway • MC33665A: General Purpose BMS Communication TPL Transceiver and CAN FD Gateway • TJA1057: High-Speed CAN Transceiver - Mantis Family • TJA144x: Automotive CAN FD Transceiver Family
Battery Cell Controller	<ul style="list-style-type: none"> • MC33771C: 14-Channel Li-Ion Battery Cell Controller IC • MC33775: 14 Channel Li-Ion Battery Cell Controller IC ASIL D • MC33774: 18 Channel Li-Ion Battery Cell Controller IC ASIL D
Battery Pack Monitor	<ul style="list-style-type: none"> • MC33777: Battery Junction Box Monitor IC • MC33772C: 6-Channel Li-Ion Battery Cell Controller IC
Battery Gateway	<ul style="list-style-type: none"> • MC33665A: General Purpose BMS Communication TPL Transceiver and CAN FD Gateway • TJA144x: Automotive CAN FD Transceiver Family
Battery Gateway	<ul style="list-style-type: none"> • MC33665A: General Purpose BMS Communication TPL Transceiver and CAN FD Gateway • TJA144x: Automotive CAN FD Transceiver Family
NFC Reader	<ul style="list-style-type: none"> • NCx3321: NFC Forum-Compliant Frontend IC with Superior RF Performance for Automotive • NCx3320: Automotive-Grade NFC Frontend IC
NFC Tag	<ul style="list-style-type: none"> • NCx3310: NFC Forum-Compliant Tag IC with I²C for Automotive
Temperature Sensor	<ul style="list-style-type: none"> • P3T1755DP: I3C/I²C-Bus ±0.5 °C Accurate Digital Temperature Sensor • P3T1750DP: I3C/I²C-Bus, ±1 °C Accuracy, Digital Temperature Sensor

Low Voltage BMS Block Diagram

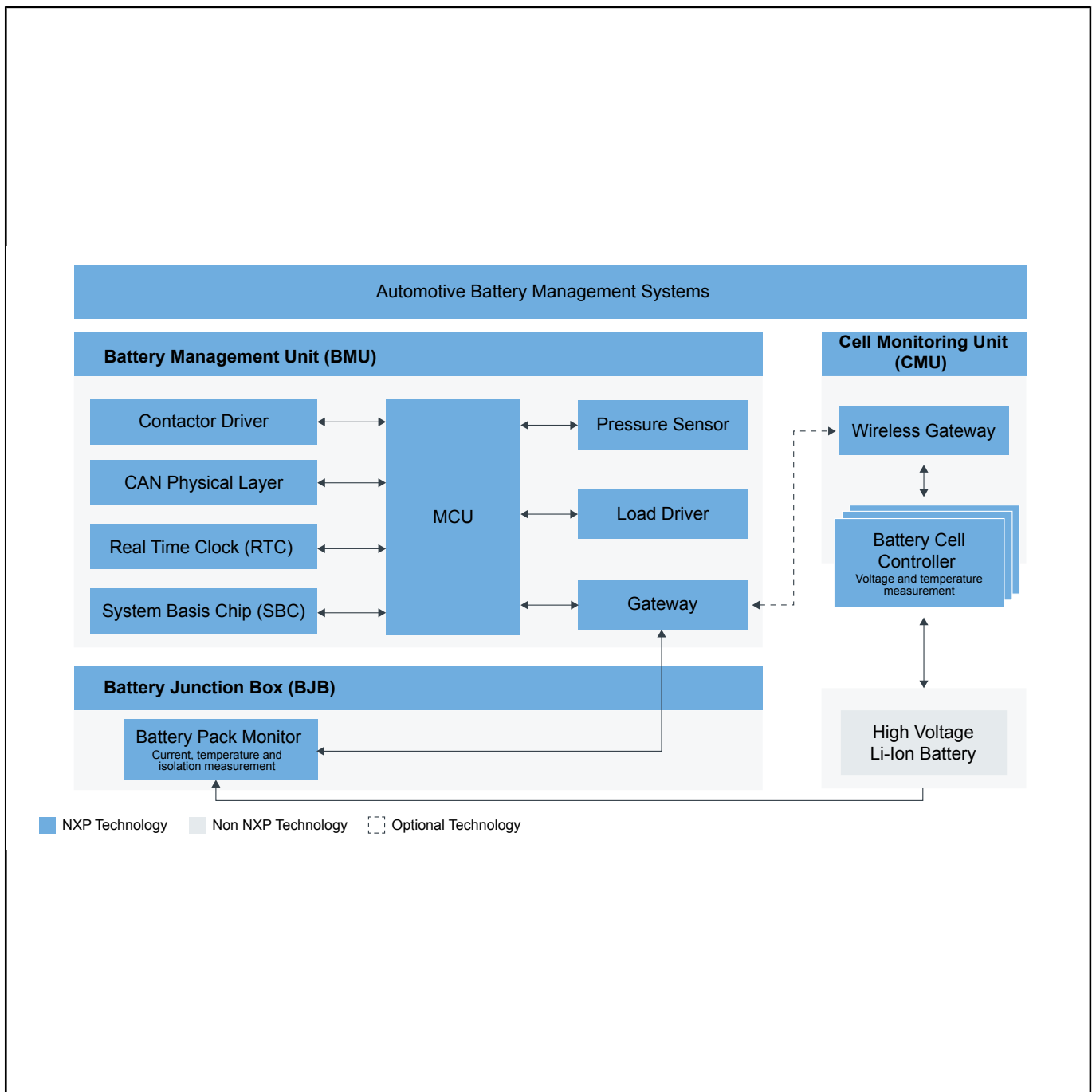


Recommended Products for Low Voltage BMS

Intelligent Battery Sensor	<ul style="list-style-type: none"> • MM9Z1_638: Battery Sensor with CAN and LIN
MCU	<ul style="list-style-type: none"> • S32K1: S32K1 Microcontrollers for Automotive General Purpose • S32K3: S32K3 Microcontrollers for Automotive General Purpose
Battery Gateway	<ul style="list-style-type: none"> • MC33664: Isolated Network High-Speed Transceiver
Battery Cell Controller	<ul style="list-style-type: none"> • MC33772C: 6-Channel Li-Ion Battery Cell Controller IC

Battery Cell Controller	<ul style="list-style-type: none"> • MC33771C: 14-Channel Li-Ion Battery Cell Controller IC
Automotive Battery Management Systems	<ul style="list-style-type: none"> • Battery Management Systems (BMS) Hardware Solutions: Battery Management Systems (BMS) Hardware Solutions • High Voltage Battery Management System (HVBMS): High Voltage Battery Management System (HVBMS)
SBC	<ul style="list-style-type: none"> • FS23: Safety System Basis Chip (SBC) Family with Power Management, CAN and LIN • FS24: Safety Mini CAN FD SBC for Automotive Applications Fit for ASIL B • FS26: Safety System Basis Chip with Low Power, for ASIL D Systems

Wireless BMS Block Diagram



Recommended Products for Wireless BMS	
Automotive Battery Management Systems	<ul style="list-style-type: none"> • Battery Management Systems (BMS) Hardware Solutions: Battery Management Systems (BMS) Hardware Solutions • High Voltage Battery Management System (HVBMS): High Voltage Battery Management System (HVBMS)
Contactor Driver	<ul style="list-style-type: none"> • HB2000: SPI Programmable 10 A H-Bridge Brushed DC Motor Driver
CAN Physical Layer	<ul style="list-style-type: none"> • TJA1145A: High Speed CAN Transceiver with Partial Networking, CAN FD Data Rates up to 5 Mbit/s
RTC	<ul style="list-style-type: none"> • PCA2131: Nano-Power Highly Accurate RTC with Integrated Quartz Crystal for Automotive Applications
System Basis Chip	<ul style="list-style-type: none"> • FS26: Safety System Basis Chip with Low Power, for ASIL D Systems
MCU	<ul style="list-style-type: none"> • S32K3: S32K3 Microcontrollers for Automotive General Purpose
Pressure sensor	<ul style="list-style-type: none"> • NBP8-9x: Highly Integrated Battery Pressure Monitor Sensor
Load Driver	<ul style="list-style-type: none"> • MC12XS6: External Automotive Lighting Multi-Channel eXtreme Switch
Gateway	<ul style="list-style-type: none"> • BMA606X: Wireless Battery Management System Link • BMX6X02: General-Purpose Battery Management System Communication Gateway • MC33665A: General Purpose BMS Communication TPL Transceiver and CAN FD Gateway
Battery Cell Controller	<ul style="list-style-type: none"> • MC33774: 18 Channel Li-Ion Battery Cell Controller IC ASIL D
Battery Pack Monitor	<ul style="list-style-type: none"> • MC33777: Battery Junction Box Monitor IC
Wireless Gateway	<ul style="list-style-type: none"> • BMA606X: Wireless Battery Management System Link

View our complete solution for [Battery Management System \(BMS\)](#).

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

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