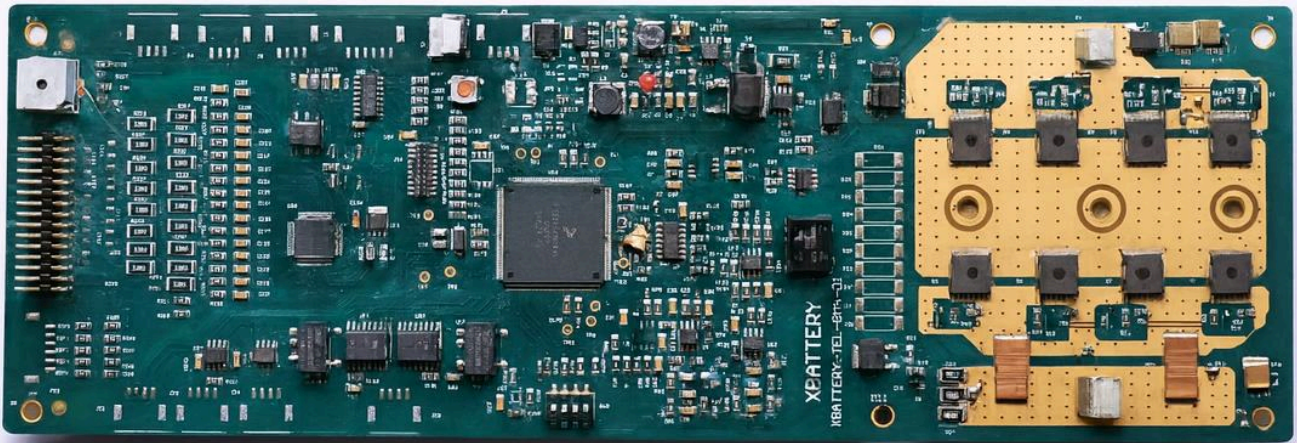


***X*BATTERY**

BharatBMS for Energy Storage



Made in India



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Xbattery BharatBMS-ESS

Xbattery BharatBMS-ESS is a compact, high-performance BMS engineered for next-generation Energy Storage Systems. Supporting up to 250 cells in series LFP packs, it ensures precise monitoring, smart balancing, and multi-level protection for reliable and scalable energy management.

Applications



Backup & UPS Systems

Uninterrupted, stable energy support.



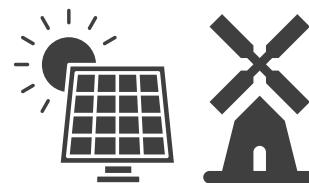
Telecom Infrastructure

Reliable backup for towers.



Industrial Battery Packs

High-performance power systems.



Renewable Energy Storage

Solar and wind power systems.

Core Features



Intelligent Cell Monitoring

Supports up to 250 cells with ± 2 mV precision and passive balancing.



Communication & Control

CAN FD, UART, SPI, and Ethernet for real-time data and remote monitoring.



Safety First

ISO 26262-compliant protection with fault diagnostics for voltage, current, and temperature.



Thermal Management

Real-time temperature sensing and thermal runaway detection for efficient heat control.



Scalable Architecture

Modular design allows flexible series and parallel configurations.



SOC/SOH Algorithms

Accurate State-of-Charge and State-of-Health estimation.



Smart Diagnostics

Real-time visualization and lifecycle analytics for optimal performance.



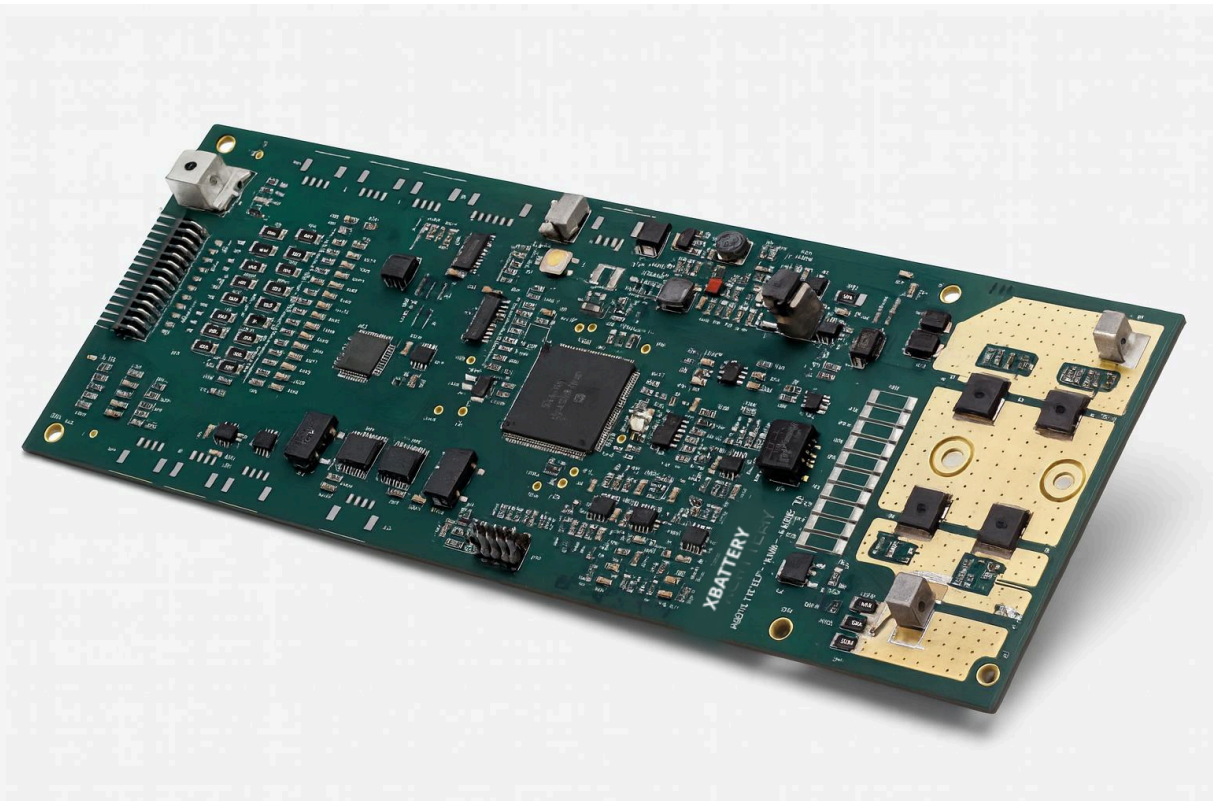
Optimized Software

High-efficiency C framework for real-time applications.



Customizable API

Open API for seamless integration and control.



ESS BMS Offerings

01

Xbattery BharatBMS-ESS-51.2V

Modular smart BMS for UPS, telecom, and small ESS supports up to 16 cells for compact, reliable energy storage.

02

Xbattery BharatBMS-ESS-72V

High-efficiency BMS for industrial and medium-scale ESS, supports up to 28 cells for safe and efficient power management.

03

Xbattery BharatBMS-ESS-110V

Advanced BMS for large ESS and grid storage, supports up to 42 cells for high-voltage, high-performance energy systems.

04

Xbattery BharatBMS-ESS-800V

Advanced BMS for high-power storage systems, supports up to 250 cells for safe and optimized energy control.

Product Specifications

Specification	ESS 51.2V	ESS 72V	ESS 110V	ESS 800V
Cell Configuration	Up to 16S	Up to 28S	Up to 42S	Up to 250S
Nominal Pack Voltage Range	51.2V	90.0V	134.4V	800.0V
Max Pack Voltage Range	58.4V	102.2V	153.3V	912.5V
Min Pack Voltage Range	40.0V	70.0V	105.0V	625.0V
Typical Applications	UPS, Telecom, Small ESS	Industrial ESS	Large ESS	Megawatt Grid-Scale
Battery Capacity Range	5kWh	25kWh	38kWh	276kWh

Tech Specifications

General & Electrical Specifications		Parameters	Mechanical & Environmental		Parameters
Input Power		12V typical	Dimensions & Weight		Configurable
<hr/>			Mounting Form Factor/Connector Types		Configurable
Cell Voltage & Balancing			Operating & Storage Temperature Range		-20°C to +60°C ; Up to +60°C
Cell Voltage Measurement Range		-0.3V to 5V	Humidity/Environmental Classifications (indoor/outdoor, shock & vibration specs)		Non-condensing depending on enclosure
Measurement Accuracy & Resolution		±5mV; 1mV resolution	Ingress/IP rating (if enclosure provided)		IP20–IP65 configurable
Balancing Topology (active or passive/dissipative)		Passive	<hr/>		
Balancing Current		~30 to 300mA (depending on configuration)	Software, Diagnostics & Tools		
Balance Enable/Threshold Voltages		Typically enabled >3V	Configuration Software Tools		PC-based GUI or CLI over UART/CAN
<hr/>			Event/Error Logging & RTC capabilities		Timestamped fault log (non-volatile) ; Yes (battery-backed optional)
Temperature Sensing & Thermal Management			Diagnostics & Self-Test features		Self-test on boot, watchdog, CAN alive
Number & Type of Temperature Sensors Supported		4–90 NTCs (10kΩ typical)	Versioning & Firmware upgrade method		UART or CAN bootloader supported
Sensor Range & Accuracy		±1°C	<hr/>		
Thermal Protection Thresholds and cut-offs		0°C to +60°C (pack operation); < -20°C or >65°C configurable trigger	Protections & Safety		
<hr/>			Over-voltage Protection (per cell)		Cell: >3.65V
Current Handling			Under-voltage Protection (per cell)		Cell: <2.5V
Charge Current Limit		1C (eg. 100A for 100Ah pack)	Over & Under-temperature cut-offs		Charge: 0°C to 45°C; Discharge: -20°C to 60°C
Continuous Charge Current		50A	Leakage/Ground fault detection		Optional (RCD/GFD integration)
Continuous Discharge and Peak Discharge Limits		150A/200A (<10s) Depending on cell/pack	Protection switching topology		MOSFET/Contactor based
<hr/>			Precharge circuit or inrush current limiting		Yes (resistive soft start/inrush limiter)
Standards & Certifications			<hr/>		
Safety Standards		BIS compliant, IEC 62133-2	Communication Interfaces		
EMS/EMC compliance, regulatory notes		BIS applicable, CISPR 25 in roadmap	Supported Protocols		CAN UDS, Modbus
<hr/>			Baud Rates & CAN Speeds		CAN: 125k to 1 Mbps; RS 232/485: 9600–115200
Performance & Lifecycle			General-purpose I/O		2 (Analog Inputs)
Efficiency		>98%	Host Interfaces		CAN or UART to host/controller/charger
Power Consumption (active/idle/sleep current)		2000mW/50mW/<5mW	<hr/>		
Cycle Life Expectations (if gauging capacity)		Depends on battery pack capacity			



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