(BMS) PRO: BMS 16S-40A
BATTERY MANAGEMENT SYSTEM

Introduction

Bacancy's BMS Pro is a cutting-edge battery management system that meets the rigorous standards of the Indian Government's AIS-156 amendment-3. This state-of-the-art system is equipped with unique and highly flexible features, making it one of the most reliable and efficient solutions for battery management needs.

One of the key advantages of BMS Pro is its exceptional security measures that help protect batteries from overcharging, over-discharging, and overheating, thereby ensuring their longevity and reliability. Moreover, BMS Pro offers advanced cell balancing features that prevent cell overvoltage or Undervoltage, which can significantly improve battery performance and lifespan.

In addition, BMS Pro provides precise estimations of both state of charge (SOC) and state of health (SOH), which are essential for monitoring battery performance and predicting its life expectancy accurately. This feature can help businesses save money by avoiding premature battery replacements and ensuring optimal battery usage. BMS Pro also supports multiple communication protocols, including CAN, BLE, and 4G, making it highly versatile and compatible with a wide range of battery types and configurations.
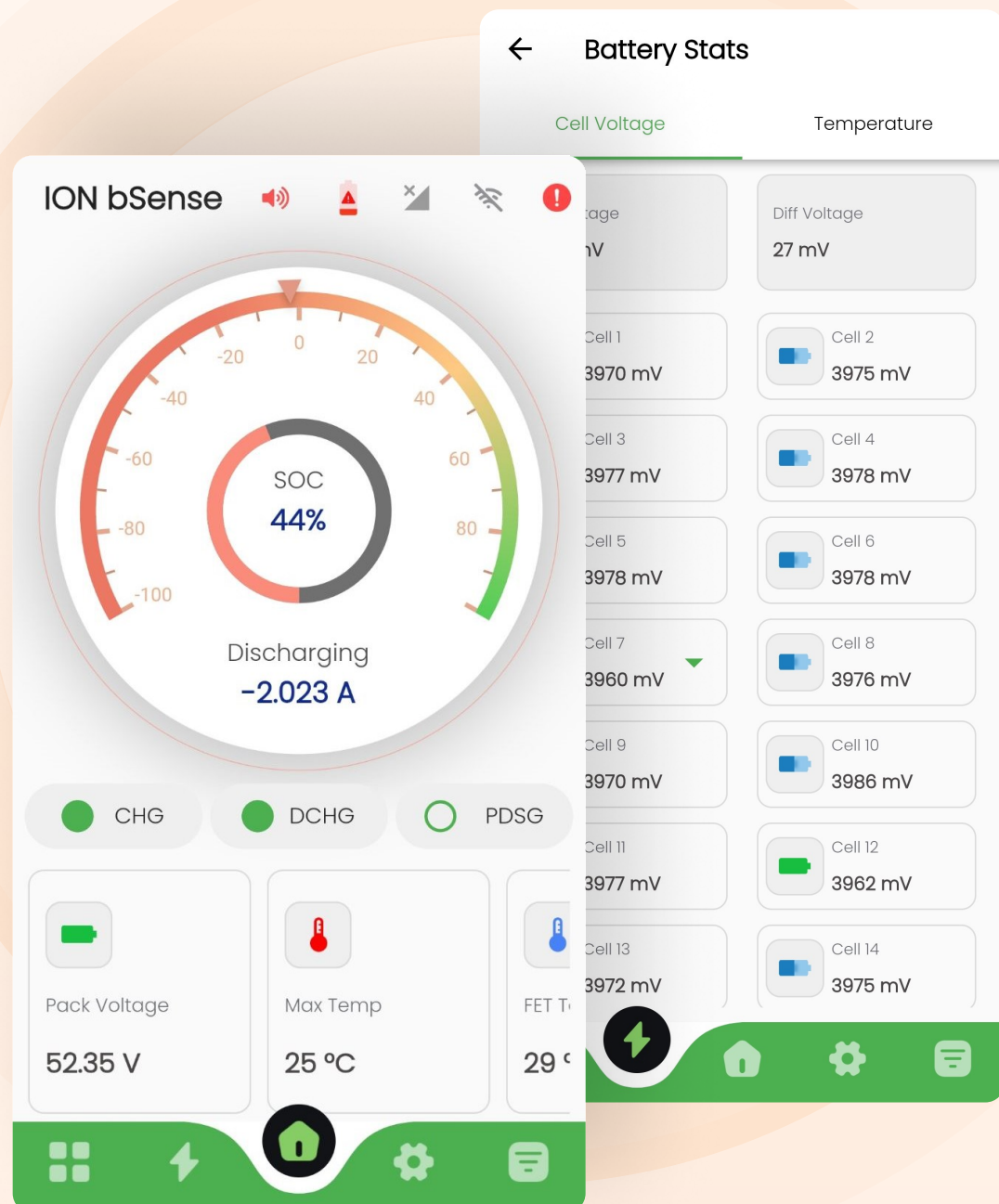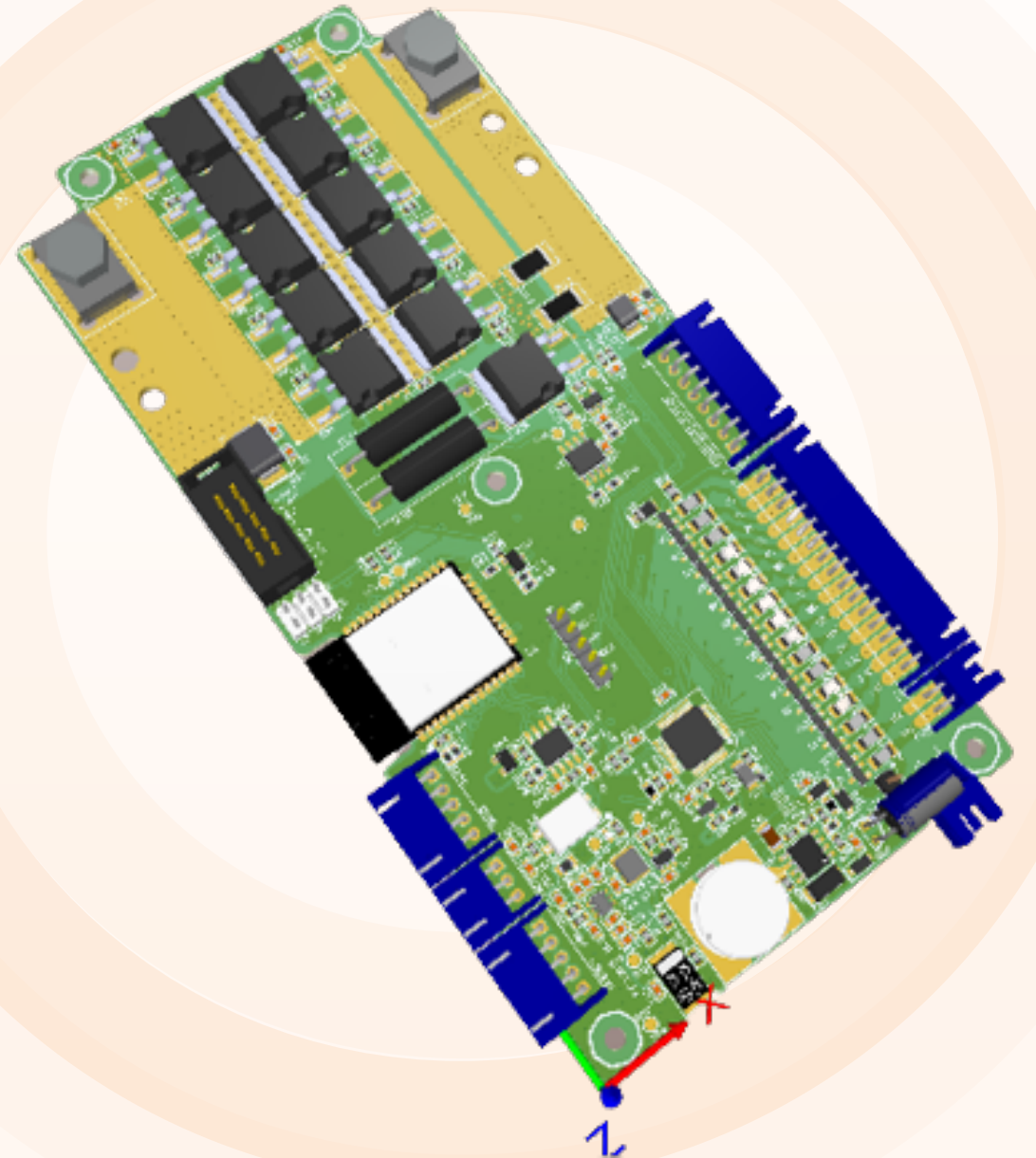
Bacancy's BMS provides exceptional levels of performance and functionality for battery management needs in various applications. With its advanced features and capabilities, BMS Pro offers unparalleled reliability, efficiency, and flexibility, making it an ideal solution for businesses seeking to optimize battery usage and performance.

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Key Features

- Cell voltage measurement accuracy of up to ±10mV

- Current measurement accuracy is up to 2% at calibration point.

- Very low quiescent current

- Passive balancing; default up to 150mA (scalable upon request)

- Continuous discharge current up to 40A

- SOC algorithm with OCV compensation with SOC accuracy to within ±4%

- ±2 °C accuracy in temperature measurement

- Comply with recent AIS-156 amendment-3.

- Optional support for small OLED, Buzzer, FAN, Smoke detection sensor, Ignition Signal.

Key Features

- Plug & Play support for Bacancy's Telematics

- Fully configurable parameters to support various types of cell and use cases

- Supporting BLE, Wi-Fi, and GSM/GPRS communication

- Non-isolated CAN communication

- Accurate estimation of SOC/SOH

- Passive Cell Balancing

- Secure MQTT feature available for cloud communication

- Firmware upgrade over the air via a cloud interface

- Alert, Fault and Diagnose Event logging

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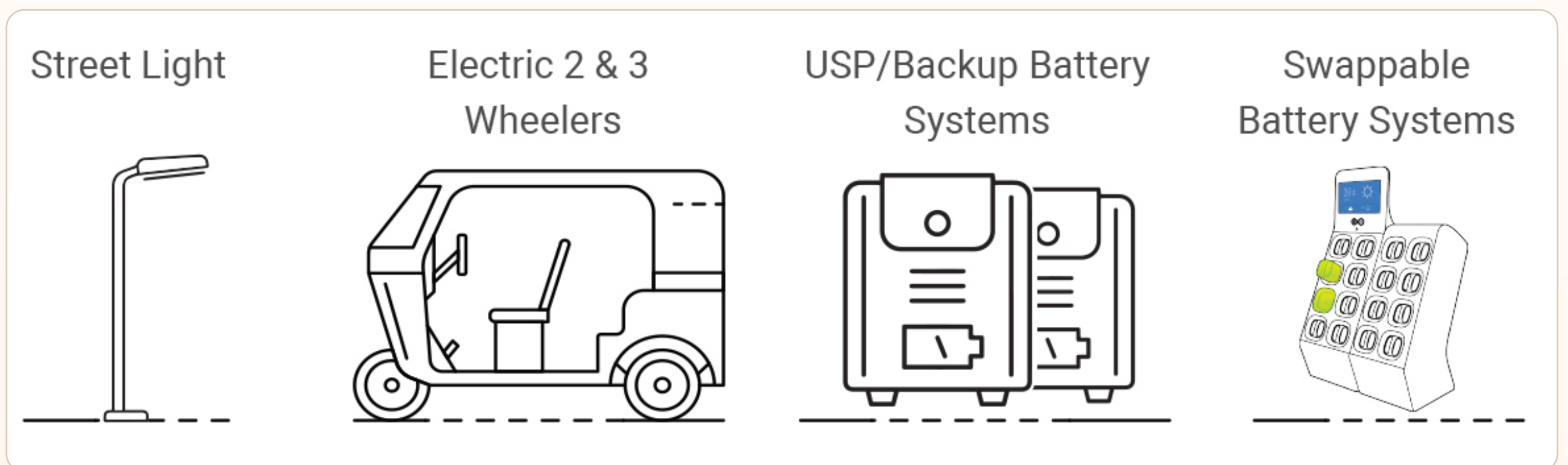
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Key Technical Specifications

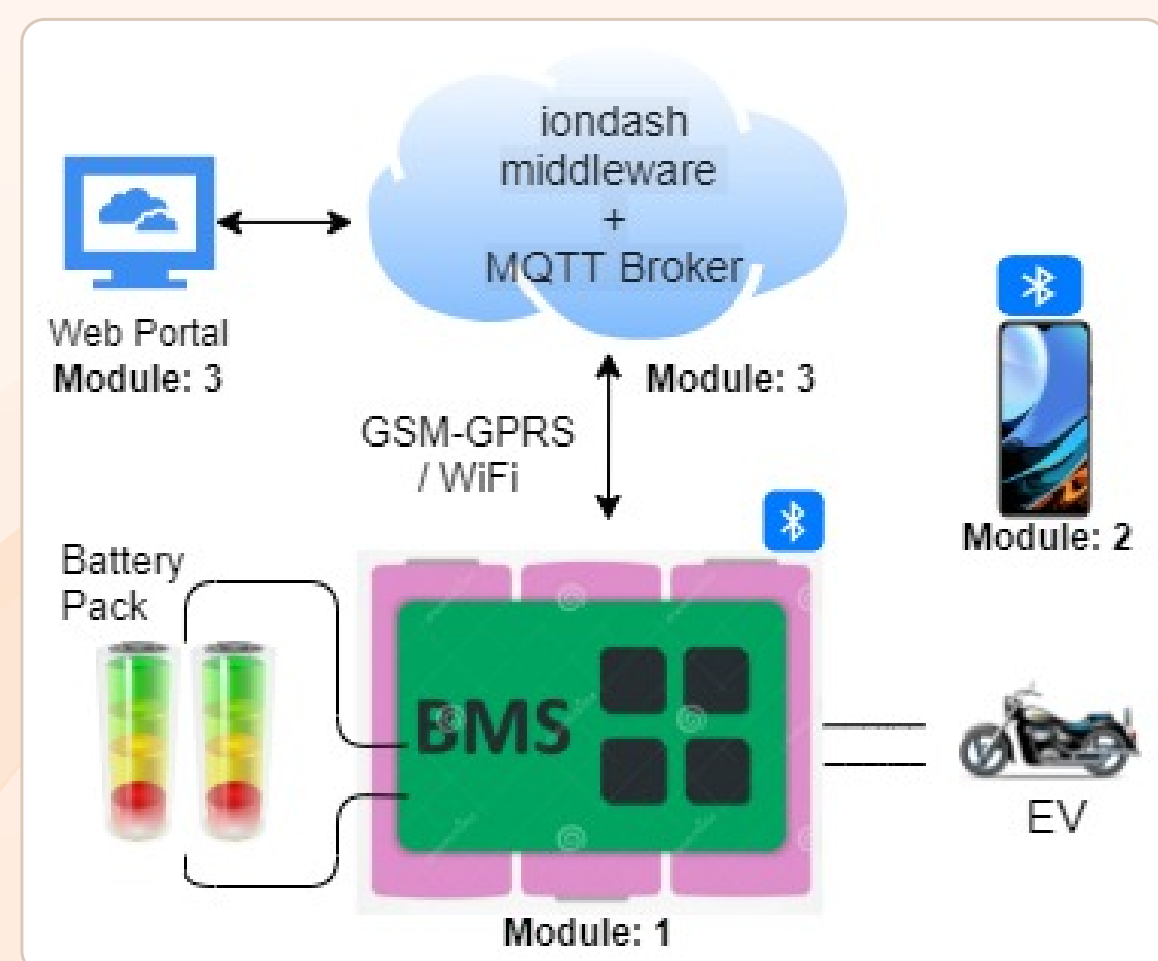| Parameters	Specifications
Cells to be monitored	8s - 16s
Operating temperature	-20 to 85°C (5 to 95% RH)
Supported Cell Chemistry	NMC/NCM, LFP
Cell voltage measurement range	Up to 5V
Cell Voltage measurement accuracy	± 10mV
Cell balancing topology	Dissipative (Passive)
Operating Voltage Range	19V to 70V
Temperature sensor	4 external NTC for battery pack and 2 on-board PCB sensors
Charging and discharge current	Continuous 40A
Peak discharge current (30 Sec)	~60A
Active consumption	~1.21 W (With Active 4G Module + BLE + Wi-Fi)
Idle Sleep Consumption	(~0.25 W) without ignition (~0.083 W) with ignition
Fully Discharge Sleep Consumption	~0.083 W (Both with/without Ignition type BMS)
Communication	Wireless	BLE 4.2	WiFi Non-Isolated CAN, GSM/GPRS interface
Digital I/O pins	2 Output Pin For FAN and Buzzer And ADC based 1 Input Pin for Smoke sensor
SOC, SOH calculation	Coulomb counting and OCV models
Safety Features	Over/Under cell voltage, Over/Under temperature in charge & discharge, Over current in charge and discharge, Pack Over/Under Voltage, MOSFET failure Notification
Dimensions (mm)	156x78x15 (L X W X H)

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Applications

- Mobile & Stationary Electrical Storage Equipment
- Electric & Hybrid Electric Vehicles
- Drones, Robots, Street Lighting
- Industrial & Home Storage
- Backup Battery Systems

Street Light

Electric 2 & 3 Wheelers

USP/Backup Battery Systems

Swappable Battery Systems

System Overview

Iondash Cloud BMS Analytics