BOCANT

TECHNICAL SPECIFICATION PORTFOLIO

48V 50Ah HIGH-CAPACITY E-BIKE LITHIUM BATTERY

Premium heavy-duty energy solution engineered with genuine Samsung 21700 50G cells, an integrated JBD Smart Bluetooth BMS, and a rugged steel-plated structural enclosure.

1. PRODUCT OVERVIEW & SYSTEM ARCHITECTURE

The BOOANT 48V 50Ah Metal Enclosure Series represents the pinnacle of high-capacity, heavy-duty e-mobility energy storage. Designed specifically for high-power demands, custom cargo fleets, long-range commuters, and electric conversion setups, this battery delivers a staggering 2400Wh of raw energy density.

FIGURE 2.1: BOOANT 48V 50AH HEAVY-DUTY BATTERY MODULE WITH 10AWG DISCHARGING WIRES

PREMIUM GRADE-A CELL CORE

At the heart of the system are 130 authentic, Grade-A Samsung INR21700-50G high-capacity lithium-ion cells configured in a robust 13S10P matrix. Unlike standard commercial cells that degrade rapidly under continuous high loads, these premium cells maintain high voltage stability and exceptional chemical resilience.

CELL & CORE PACK CONFIGURATIONS	
Cell Model / Brand	Samsung INR21700-50G (Genuine, Grade-A)
Configuration Matrix	13 Series, 10 Parallel (13S10P)

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2. COMPREHENSIVE TECHNICAL SPECIFICATIONS

The technical characteristics of the system are designed to meet rigorous international power and safety criteria. Review the detailed telemetry, electrical thresholds, and dimensional values below.

ELECTRICAL PARAMETERS	
Nominal Voltage	48V
Rated Capacity	50 Ah
Charging Voltage	54.6V
Cut-off Voltage	39.0V
Standard Charge	10.0A Fast Charge
Continuous Discharge	50A Max
Peak Discharge Current	120A (<1 Sec)
Motor Compatibility	250W to 2400W Motors

MECHANICAL & LIFECYCLE	
Enclosure Material	Cold Rolled Steel (1.2mm)
Surface Coating	Anti-corrosion Powder Coat
Ingress Protection	IP65 Waterproof Rating
Cycle Life Metric	≥500 Cycles (to 80% DoD)
Discharge Connectors	High-Current XT90 / XT60
Discharge Cable Gauge	Heavy-duty 10AWG Wires
Charging Ports	3-Pin Aviation / XLR Port
Thermal Safety Range	-20°C to 65°C Operating

ADVANCED STRUCTURAL PROTECTION

1.2mm Cold-Rolled Steel Shell

The battery core is fully enclosed in a rigid steel housing designed to absorb direct mechanical trauma and dissipate impacts. Reinforced edge geometry ensures that cell alignment remains precise and uncompromised under continuous operational shock and vibration.

IP65 Ingress Isolation & Weather Proofing

Featuring specialized internal welded seams combined with a full-perimeter compression gasket, the enclosure completely blocks pressurized water jets, road moisture, and harmful dust ingress, preserving

3. SMART JBD BLUETOOTH BMS & APP ECOSYSTEM

Equipped with an authentic JBD Smart Management System, this pack continuously monitors cell performance via a high-fidelity Bluetooth connection. Real-time telemetry prevents cellular degradation and allows user control over functional battery limits.

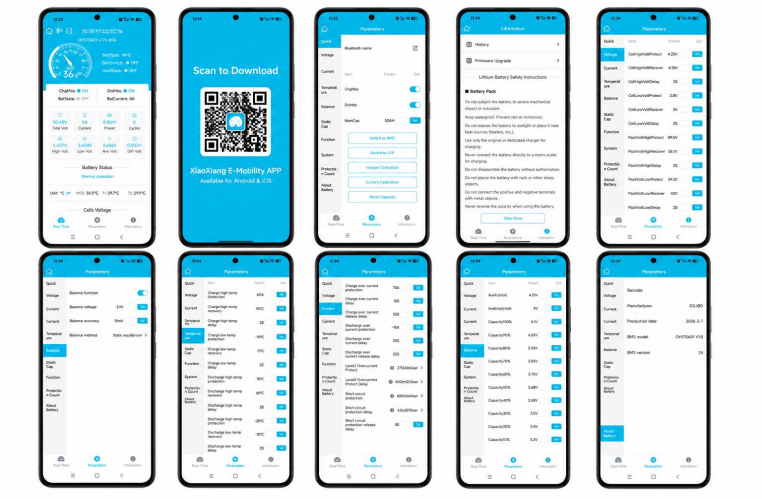
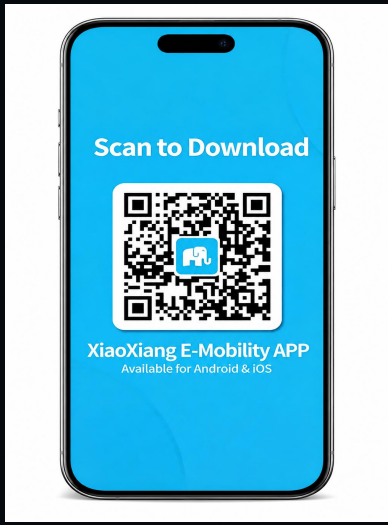


FIGURE 4.1: XIAOXIANG E-MOBILITY PARAMETER CONFIGURATIONS & REAL-TIME STATE-OF-CHARGE (SOC) TELEMETRY DASHBOARD



SCAN TO DOWNLOAD

Compatible with Android & iOS

COMPREHENSIVE TELEMETRY CONTROL & ACTIVE BALANCING

The XiaoXiang E-Mobility Application gives users access to real-time parameters, including structural cell voltages, overall battery cycle indices, individual MOS temperature probes, and comprehensive overcurrent protection logs. An integrated active hardware balancing matrix constantly manages cell drifts, ensuring optimal lifetime health.

4. WATE 54.6V 10A SMART FAST CHARGER

To match the substantial capacity of the 50Ah cellular matrix, each module is coupled with an advanced WATE industrial-grade 10A fast smart charger. Operating on a multi-stage CC/CV charging loop, it safely repowers the 2400Wh pack in a fraction of standard charging times.

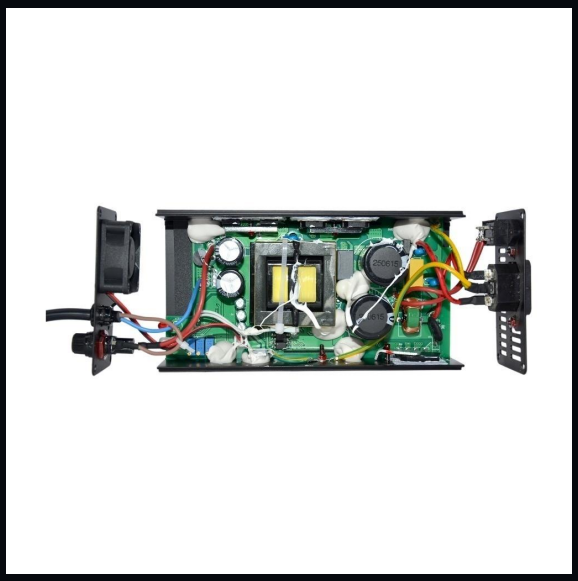


FIGURE 5.1: SOLID CAPACITOR & POWER INDUCTOR ARCHITECTURE

FIGURE 5.2: ANODIZED ALUMINUM THERMAL CHASSIS

HIGH-PERFORMANCE THERMAL AND ELECTRICAL ENGINEERING

CHARGER OPERATIONAL DATA PROFILES			
AC Input Voltage	100-240VAC 50/60Hz	**DC Output Current**	10.0 Amperes Continuous
Output Voltage	54.6V Max DC	**Cooling System**	Active Dual-Bearing Fan Forced
Chassis Housing	Extruded Heavy Aluminum	**Certification Profile**	CE, RoHS, FCC, GS Standard

5. HARDWARE SAFETY MATRICES & INTEGRATION PROTOCOLS

The BOOANT Flagship system integrates deep safety measures to manage overcurrent, voltage abnormalities, and thermal spikes. Proper installation protocols are critical to maintaining performance stability.

AUTOMATIC FAILURE PREVENTION MATRIX

PROTECTION FUNCTION	BMS TRIGGER LIMIT	ACTION PROFILE	RECOVERY STATE
Over-Charge Cutoff	4.2V ± 0.025V / Cell	Instant Charge Interruption	Automatic drop to 4.15V
Over-Discharge Cutoff	2.50V ± 0.05V / Cell	Instant Circuit Isolation	Disconnect Load / Apply Charge
Over-Current Safety	70A Continuous for >10s	Current Discharge Suspension	Auto-reset after 30 Seconds
Thermal Overheat Limit	65°C ± 2°C Threshold	Full System Power Cutoff	Cooling below 55°C state

BROAD COMPATIBILITY & FLEET DEPLOYMENT GUIDANCE

Universal Motor and Controller Interfacing

Engineered to seamlessly mesh with multi-brand 48V controllers, mid-drive units, and high-torque hub motors. Features robust compatibility with standard Bafang BBSHD/BB02 setups, Voilamart high-wattage hubs, and custom industrial delivery conversion powerframes.

STANDARD OPERATIONAL COMPLIANCE CHECKLISTS

- **Connection Sequence:** Always ensure the main discharge keys are toggled off before coupling high-current XT90/XT60 connection leads.
- **Environmental Regulations:** Keep the modular core clear of prolonged direct flame proximity or submersion beyond standard IP65 ratings.
- **First-Use Cycle Profile:** Execute a full 100% smart charge cycle before initial high-torque road deployments.

BOOANT TECHNOLOGY CO., LTD.

PROFESSIONAL LITHIUM BATTERY MANUFACTURING ELITE

For custom corporate configuration requests, enterprise fleet contract inquiries, bulk distributor discounts, or technical support queries, contact our global service centers below.

Official Portal: www.booant.com

Sales Email: support@booant.com