

FFD Power Unveils Next-Gen EMS – Redefines BESS core with Real-Time Speed, All-Scenario Flex & Remote Intelligence

10µs PCS & meter communication, flexible all-scenario operation, seamless switching, remote troubleshooting, making BESS plug&play

DONGGUAN, GUANGDONG, CHINA,
December 27, 2025 /

EINPresswire.com/ -- [FFD Power](#), a leader in energy storage technology innovation, today launches its cutting-edge [Energy Management System \(EMS\)](#) tailored for Battery Energy Storage Systems ([BESS](#)). Designed to address the critical demands of modern energy grids—from ultra-fast grid services to cost-efficient asset operation—FFD Power’s EMS sets a new benchmark for reliability, flexibility, and operational efficiency, empowering utilities, industrial clients, and renewable energy developers to maximize BESS value.



“

As energy transition advances, BESS needs EMS with ultra-low latency, seamless integration, and robust remote troubleshooting. Ours boosts returns and cuts O&M costs globally.”

*[Antonello De Carli], [CEO] at
FFD Power Italy*

As the "command center" of BESS, an EMS is pivotal to coordinating energy flow, equipment synergy, and safety protocols. FFD Power’s solution stands out in a crowded market by integrating four game-changing capabilities, built on industrial-grade hardware and standardized communication protocols to deliver unmatched performance in real-world conditions.

Ultra-High Real-Time Speed: Powered by PROFINET for Grid-Critical Responsiveness

FFD Power’s EMS achieves sub-millisecond deterministic latency—critical for high-value grid services like Frequency Containment Reserve (FCR)—thanks

to its integration with PROFINET, the global standard for industrial Ethernet communication. Supporting two real-time modes (RT: 1–10 ms latency for general control; IRT: <1 ms for mission-critical tasks) and 1 Gbps bandwidth, PROFINET enables seamless, high-speed data exchange between the EMS, Power Conversion System (PCS), and electricity meters. This ensures instantaneous PCS charge/discharge adjustments for FCR and peak shaving (supplementing loads when grid import hits transformer capacity limits), eliminating delays that risk grid instability or revenue loss.

All-Scenario Flex: One EMS for Every BESS Application

Unlike rigid legacy systems, FFD Power's EMS is engineered to adapt to every BESS use case—without costly reconfiguration. Preloaded with core scenarios including FCR, peak shaving, energy arbitrage, microgrid operation, backup power, and demand side management (DSM), the system allows users to switch modes instantly via on-site HMI or remote mobile/web APP.

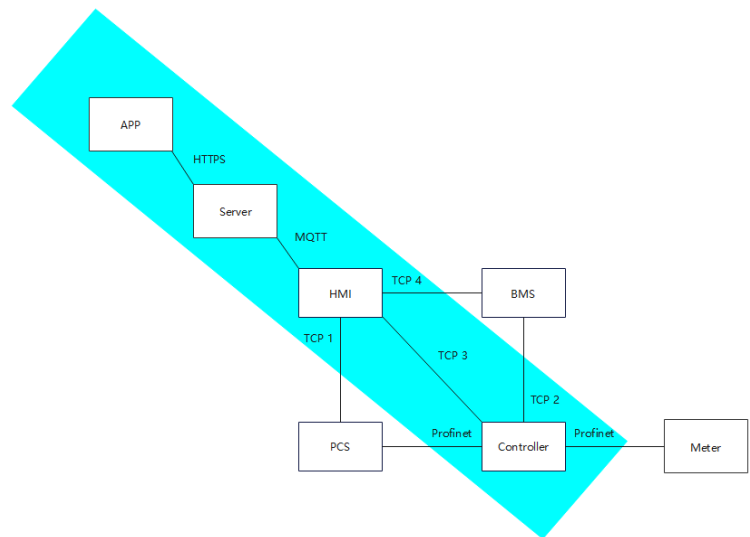
For dynamic markets, the EMS further optimizes revenue by communicating with grid operators to access time-specific service return rates, autonomously adjusting operation logic based on real-time signals. In regions with 15-minute dynamic electricity pricing, for example, users set charge/discharge thresholds via the APP, and the system automatically executes optimal schedules to maximize arbitrage gains—all without modifying the core architecture.

Industrial-Grade Stability: Built on Siemens PLCs for Harsh Environments

Reliability in extreme conditions is non-negotiable for outdoor BESS deployments, and FFD Power's EMS delivers with core control powered by Siemens S7-1500 series Programmable Logic Controllers (PLCs). These industrial-grade units operate seamlessly across -25°C to 60°C, 95% non-condensing humidity, and strong electromagnetic interference (EMI)—common in energy storage containers and industrial grids. With redundant power/communication ports, fault-



FFD POWER BESS



FFD POWER EMS TOPOLOGY

tolerant algorithms, and compliance with IEC 61131-3 and EN 61000 standards, the PLCs boast a Mean Time Between Failures (MTBF) exceeding 100,000 hours, ensuring uninterrupted operation even under grid fluctuations or harsh weather. Fully compatible with PROFINET, they enable stable synergy between BMS, PCS, and HMI, minimizing downtime and protecting revenue streams.

Full-Range Remote Capability: Eliminate On-Site Maintenance Headaches

FFD Power's EMS redefines maintenance efficiency with its multi-layer (cloud-server-HMI-controller) communication architecture, which embeds complete host computer programs for BMS and PCS. Unlike traditional BESS—where technicians must travel to site with dedicated computers to diagnose faults, incurring high costs and prolonged downtime—FFD's solution allows remote access to real-time parameters, fault codes, and diagnostic tools via mobile APP or secure cloud portal. Engineers can adjust parameters, clear fault codes, verify firmware, and run performance tests from anywhere, while layer-by-layer encrypted communication ensures data security. This capability cuts maintenance costs drastically, reduces downtime, and is a game-changer for distributed or remote BESS assets.

Beyond Core Functionality: A Holistic BESS Command Center

In addition to its four flagship capabilities, FFD Power's EMS integrates comprehensive safety and management features: emergency BMS failure backup (isolating batteries to prevent overcharge/thermal runaway), fire control system linkage, real-time environmental monitoring, and secure cloud data storage for compliance reporting and performance analysis. The intuitive HMI and remote visualization tools further empower operators to monitor and control assets without on-site presence.

About FFD POWER

FFD POWER has become a global leader in commercial and industrial (C&I) energy storage solutions. As a leading innovator in energy storage technology, the company specializes in high-performance EMS, BESS integration, and grid-friendly solutions, committed to driving the global energy transition. To date, FFD POWER has delivered more than 2,000 pre-integrated, plug-and-play BESS across over 30 countries—including Germany, Italy, France, Spain, Norway, the USA, Brazil, Israel and more—serving a wide range of applications such as energy arbitrage, frequency control (FCR), microgrids, AI-driven DC management (AIDC) and PV-BESS collocation. Combining industrial-grade hardware, standardized protocols, and user-centric design, FFD POWER delivers reliable, efficient, and future-proof energy storage systems that enhance reliability, optimize energy efficiency, and enable advanced grid interactions for industrial, commercial, and utility clients worldwide.

Ang li

FFD POWER

+86 133 7777 3990

ang@ffdtec.com

Visit us on social media:

[LinkedIn](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/878625647>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2025 Newsmatics Inc. All Right Reserved.