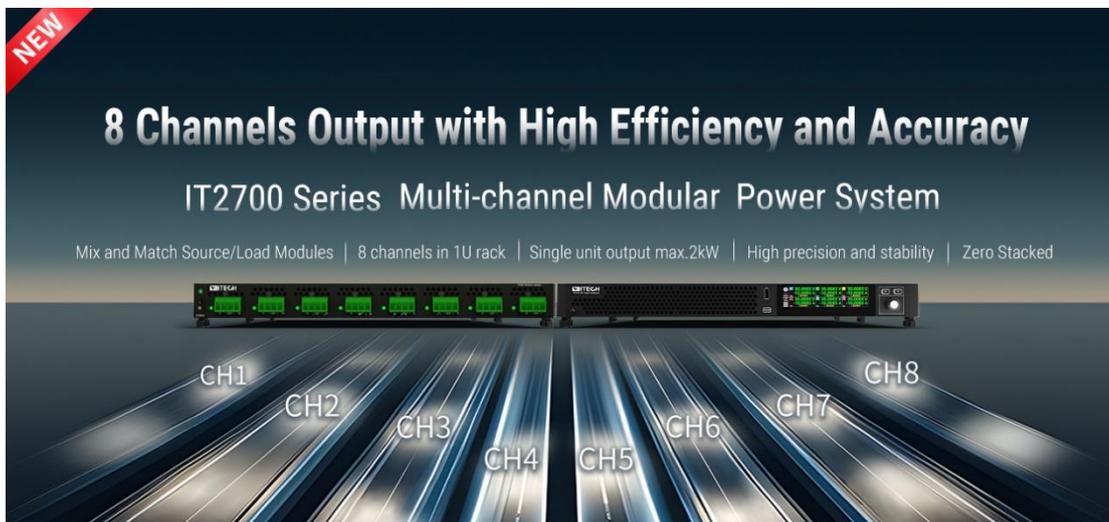




In energy storage systems, the testing and validation of the battery management system (BMS) is a crucial part. To ensure that the BMS can accurately collect voltage and current information and respond correctly under various complex battery states, it becomes especially important to simulate the behavior of the cells and packs. The IT2700 Multi-Channel Source-Load Module System, with its powerful multi-channel serial and parallel capabilities, provides an ideal solution for energy storage BMS testing.

IT2700 Multi-channel Modular Power System

The IT2700 Multi-channel Modular Power System can accommodate up to 8 channels in a 1U frame, which can simulate battery cells and connect multiple channels in series and parallel to form a complex battery pack structure. The 1U main frame can accommodate up to 8 200W modules or 4 500W modules, which can be bi-directional DC power sources, uni-directional DC power sources, or feedback DC electronic loads, and support mixing and matching and synchronization among the modules. This flexibility allows users to freely configure the modules according to their specific testing needs to meet a variety of complex testing scenarios.



Rich communication interfaces and host computer software support

The IT2700 system is equipped with LAN, USB, CAN communication interfaces and digital I/O interfaces as standard, which is convenient for integration with various test equipment and systems. The free host computer software

supports the import of core models, including detailed information on the corresponding voltage and internal resistance of SOC. Users can synchronously control dozens of channels through the software to realize complex battery test scenarios, thus providing comprehensive testing and verification of the BMS.



Simulate cells and battery packs with multi-channel series and parallel connections

The IT2700 Multi-channel Modular Power System can simulate cells and performing multi-channel physical series and parallel connections to form complex battery pack structures. This allows users to accurately reproduce the behavior and characteristics of actual battery packs in a laboratory environment, allowing for comprehensive testing and validation of the BMS.

Scenario Simulation: Equalization Overvoltage and Equalization Overcurrent

During the test, the IT2700 system can simulate various abnormal states of battery cells, such as equalization overvoltage and equalization overcurrent. By setting the voltage abnormality of a certain cell, the BMS needs to be able to recognize and stop the charging operation. Similarly, if there is an imbalance between the two currents in the battery pack, the BMS should be able to detect and respond to the fault condition in time. The IT2700 system's precise control capability ensures that these test scenarios are realistically reproduced, helping engineers to effectively validate the performance and reliability of the BMS.

The IT2700 system is not only applicable to the testing of energy storage BMS, but also widely used in the ATE system integration in the R&D, design validation and manufacturing process of DC-DC modules, power devices, communication power modules, simulation and testing of 3C products (e.g., cell phones, PCBAs, batteries), optoelectronic chips and power management chips.

With its multi-channel serial and parallel connection capability, accurate abnormal state simulation, flexible module configuration, rich communication interfaces, and powerful host computer software support, IT2700 power system has become an excellent choice for energy storage BMS testing. Whether it is the balanced over-voltage and over-

current scenarios of electric cells or the overall performance test of battery packs, IT2700 can provide a comprehensive solution to help engineers ensure the efficient and safe operation of BMS.



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