

Battery and Cell Performance

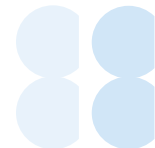
Our battery and cell performance testing capabilities focus on battery storage and charge and discharge control. Some of the conditions we can evaluate include elevated temperature, lowered temperature, extended storage time, temperature shock, and temperature cycling. The charge and discharge controls that can be evaluated include battery and cell capacity testing, cycle life testing, cell construction analysis, specialized charge regime testing, specialized discharge regime testing (GSM, CDMA, and TDMA), temperature cycling, safety testing, cell crush, puncture, and flame testing. This testing is conducted on battery packs and cells to verify that the performance criteria are met under various environmental conditions. The versatility of our test capabilities allows us to perform highly individualized and specialized testing.

Stereolithography Services

Stereolithography, also referred to as rapid prototyping, utilizes state-of-the-art technology to provide accurate and professionally refined prototype parts. These parts can be utilized for design verification or tooling aids, analyzed for form, fit and function, or exhibited for promotional purposes.

Research Services

Motorola Product Testing Services offers scientific expertise and capabilities for experimental evaluation or general consulting services. Our dedicated scientists have extensive experience in electrochemistry, thermal analysis and materials characterization. Testing Services provides thermal simulation services and complete problem-to-solution analyses that reduce product design and prototyping cycle time, while improving product reliability and lifespan. In addition, we have resources available to characterize the performance and safety of electrode materials, cell components, complete cells and battery packs.



Motorola Product Testing Services

Your Comprehensive Testing Resource



Protecting Your Information

Motorola Product Testing Services recognizes the importance of protecting every customer's business and intellectual property. A number of measures are taken to assure that lab areas are secured by regulated key card access that is limited to Testing Services personnel. Hard copy test data and reports are secured while soft copies are stored in restricted folders on a dedicated server. Upon request, files sent via e-mail can be encrypted with a separate access password. Protecting the customers' confidentiality is of primary importance to Motorola Product Testing Services.



Motorola Product Testing Services

For more information on our comprehensive product testing and technical services, visit www.motorola.com/testservices or call 770.338.3795.

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At Motorola Product Testing Services, we offer expert, third party, technical services in a timely and professional manner.

We specialize in providing product testing, including compliance, environmental stress and reliability, and performance testing. In addition, rapid prototyping, consulting and research services are available. Our product testing and diversified technical services are offered to manufacturers from a wide range of industries, including consumer electronics and information technology equipment.

Our mission is to provide comprehensive testing and technical services that exceed our customers' expectations. With years of testing experience, we have the flexibility to develop and perform custom test programs. Expert program management ensures that our customers' projects stay on track. Partnering with Motorola Product Testing Services allows the customer to focus on the critical aspects of their business while we confidentially develop and manage their testing program.

Product Safety Testing

Product safety testing and consulting services are provided by Motorola Product Testing Services. Pre-certification compliance verification testing as well as full agency certifications are available. We are staffed and equipped to perform evaluations and testing in accordance with various Canadian (CSA), European Norm (EN), International Electrotechnical Commission (IEC) and Underwriters Laboratories (UL) standards. Our facilities and procedures have been assessed to ISO 17025, which are the General Requirements for Competence of Testing and Calibration Laboratories.

Through our relationships with regulatory agencies, our customers can benefit from reduced cycle time for agency approvals. Should a product not initially receive agency approval, we will evaluate the product design and offer suggestions on what to consider changing before the next evaluation.

Electromagnetic Compatibility Testing (EMC)/ Electromagnetic Interference Testing (EMI)

Our EMC/EMI testing laboratories have an experienced staff that enable us to offer a broad range of compliance and testing services. Motorola Product Testing Services' include a 3-meter and 10-meter open area test site (OATS), a 3-meter, fully compliant, semi-anechoic chamber and full immunity test capabilities. Primary voltages range from 100 to 270 V with frequency control from 45 to 500 Hz. DC Voltages range from 0 to 100 V up to 300 A. This range provides the ability to handle unique equipment requirements. Motorola Product Testing Services can provide EMC/EMI testing for information technology equipment (ITE), power systems and chargers for most world markets.

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Environmental Stress and Reliability

Mechanical, electrical, and environmental stress testing services are available to assess component, product, and system level reliability. Our environmental stress and reliability testing team includes experts in reliability engineering who are qualified to provide consultation on test plan development and methodology. We work with our customers to ensure that their product design fulfills expectations for quality, performance, and reliability. Whether the project involves consumer electronics, mobile communications devices, electronic accessories, portable energy systems, computing equipment or a general electronic and mechanical component, our team will work one-to-one with customers to develop and manage their testing regime.

Lithium and Lithium-ion Transportation

Regulations affecting the worldwide bulk transportation of lithium and lithium-ion cells and battery packs went into effect as of January 1, 2003. Prior to this date, small lithium and lithium-ion cells and batteries were able to be transported in bulk as standard cargo. However, the new regulations require testing be performed on the lithium and lithium-ion batteries prior to bulk shipment. The International Air Transport Association (IATA) has adopted these regulations which affect all global air shipments of these products. Other regulatory agencies such as the US Department of Transportation (DOT) and the United Nations (UN) are evaluating these regulations.

Motorola Product Testing Services has extensive experience in UN/DOT lithium transportation testing and can provide verification of compliance for the following tests: altitude simulation, thermal cycling, vibration, shock, external short-circuit, impact, overcharge, and forced discharge.

