



Power Innovations
INTERNATIONAL, INC.

Case Study 1800

Sea Launch Satellite Deployment Receives Perfect Power Quality with Power Innovations' Q-LS™ UPQ™ Systems.

The Customer

Sea Launch Company, LLC, is an international partnership of American, Russian, Ukrainian and Norwegian businesses that provides a reliable, cost effective, heavy lift launch service for commercial customers. Building on proven performance and flight-tested hardware, Sea Launch offers superior value, high performance and fully integrated launch services. The Sea Launch equatorial launch site provides the most direct route to geostationary orbit, offering maximum lift capacity for increased payload mass or extended spacecraft life.

Sea Launch receives customer satellites at Home Port in Long Beach, Calif. Following completion of fueling and encapsulation in the state-of-the-art Payload Processing Facility, the payload unit is transferred to the Assembly and Command Ship for integration with the launch vehicle. The horizontally integrated rocket is then transferred to the Launch Platform, where it is stored in an environmentally controlled hangar during transit to the launch site at the Equator.

The Challenge

Due to the diversity of international satellite equipment, conversion capabilities must be incorporated into launch and test facilities. Launch sites also require the means to provide high quality power regardless of the input source. Failures can cost millions of dollars in equipment malfunctions, time lost, and the necessity for redeployment.

The Solution

Power Innovations UPQ™ (Q-LS™ Series) technology, with its five stages of conversion and isolation, was customized to meet special satellite pre-launch and post-launch requirements, including converting international power standards while removing distortions and fluctuations. Additional independent outputs were also added to the customized Sea Launch solution to address and isolate multiple internal circuit distortions.

Advantages of the Q-LS Series

The Q-LS Series is highly efficient, and provides battery and system monitoring and management, as well as easy maintenance and service of critical electronic equipment. Q-LS systems adapt to multiple electrical standards for international compatibility in global applications and eliminate the need for independent input step-down or step-up isolation transformers.

High Efficiencies

The high efficiencies of the Q-LS Series provide less heat dissipation, less noise, and longer backup times.

Sea Launch

INDUSTRY SERVED

Communications

CHALLENGE

Launch sites require the means to provide high quality power regardless of the input source.

SOLUTION

The Q-LS™ Series technology was customized to meet special satellite pre-launch and post-launch requirements.

ADVANTAGES

- High Efficiencies
- Battery Management
- Ease of Maintenance & Service
- Advanced Management & Control

Battery Management

One of the weakest points and biggest expenses of traditional UPS systems is batteries. UPQ technology focuses on controlled charging and load exercising of batteries to avoid battery deterioration and sulfation. UPQ DC conversion processes prioritize battery management. UPQ battery management technology extends battery life and performance up to two to three times that of traditional UPS technologies.

- With controlled charging, batteries do not boil and dehydrate. Most UPS charging systems over charge and destroy batteries. UPQ charging technology manages charging cycles and does not allow over charging.
- With load exercising, batteries are continually cycled, alleviating cell sulfation and deterioration.

Batteries, which are used only for supplementing power in a power loss or extremely out of range power situation, can also be locally or remotely monitored and managed.

Ease of Maintenance and Service

Power Innovations UPQ systems provide advanced features that make them easier to maintain and service:

- Self-diagnosing systems incorporate LEDs that clearly indicate when and where a problem exists.
- Fully modular systems have plug-and-play components that can be easily replaced if necessary.
- Modular “hot-swappable” battery packs make battery replacement easy and convenient.
- Systems require less time to repair when service is necessary – typically less than 30 minutes “mean time to repair” (MTTR).

Advanced Management and Control

Whether the IT manager is next to the system or halfway around the world, UPQ systems can be controlled from any point to any point. Flexible interfaces include: IP, RS232, contact closures, and the Honeywell Holijeron controller. Simple Network Management Protocol (SNMP) enables Internet access to real-time power status and history reports. IT personnel have the flexibility to monitor and control power from within the network operations center, from a remote location via an Internet connection or direct dial up, and from handheld devices such as PDAs and cell phones.

Power Innovations

Launched in 1997, Power Innovations has pioneered a revolutionary set of solutions to generate, store, and manage AC power. Power Innovations’ mission is to provide and manage continuous high-quality power in conjunction with, or even independent of, utility services worldwide. Power Innovations is helping forward-thinking companies accomplish this goal through a new class of technology called Uninterruptible Power Quality™ (UPQ™).

Today, Power Innovations’ UPQ systems, coupled with its UPQnet-agent II™ IP management tools, assist organizations of every size in addressing the key issues surrounding power management.

Power Innovations’ long term strategy includes fully integrated power management and control, storage, and generation for total power independence. Power Innovations’ line of power management products is currently being marketed. The company is involved in the development of a spectrum of solutions for power storage. Currently Power Innovations offers a variety of alternative generation options. In the near future, Power Innovations plans to introduce the PowerWell™, a revolutionary solution to provide green renewable energy generation for homes and business, with or without grid interaction.

Powering Life

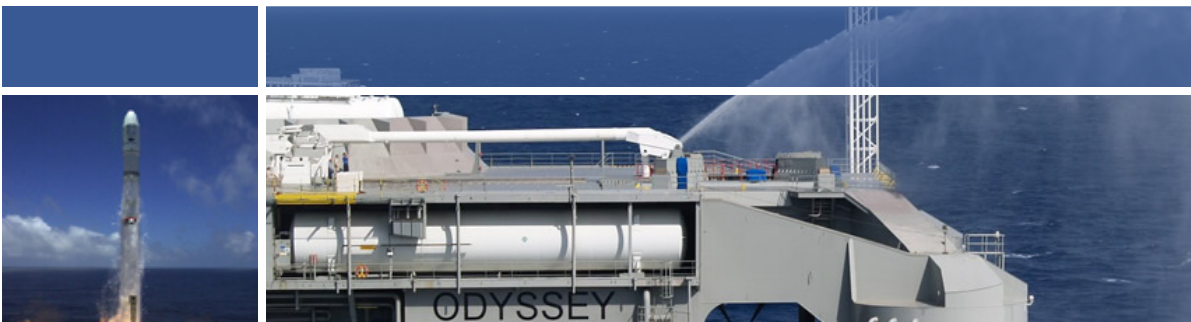
Powering Miracles
Powering Peace of Mind
Powering Life’s Connections
Powering the Human Spirit
Powering Freedom
Powering Innovation



Contact Us:

Phone: 801.785.4123
Fax: 801.785.6999
333 South 520 West
Lindon, UT 84042

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