

# eBoost™

Guaranteed Higher UPS Efficiency

## What is eBoost?

- > e = high efficiency (up to 99%) guaranteed
- > Boost = fast transfer to inverter < 2ms

*Energy consumption is a critical issue for IT organizations as their data center energy demands continue to grow. Their goal is to reduce cost and keep the datacenter running. IT organizations can reduce energy consumption and costs—without sacrificing reliability—with GE's **eBoost** technology.*

## Technology Breakthroughs

- > Up to 99% UPS efficiency
- > Compliant to ITI (CBEMA) curve during transient events
- > Up to 4.5 MVA UPS capacity using Redundant Parallel Architecture (RPA)
- > Magnetizing the output transformer ensures < 2ms transfer time to inverter
- > Static bypass inductor and output capacitor for filtering utility power
- > Battery trickle charge in **eBoost** operating mode



imagination at work

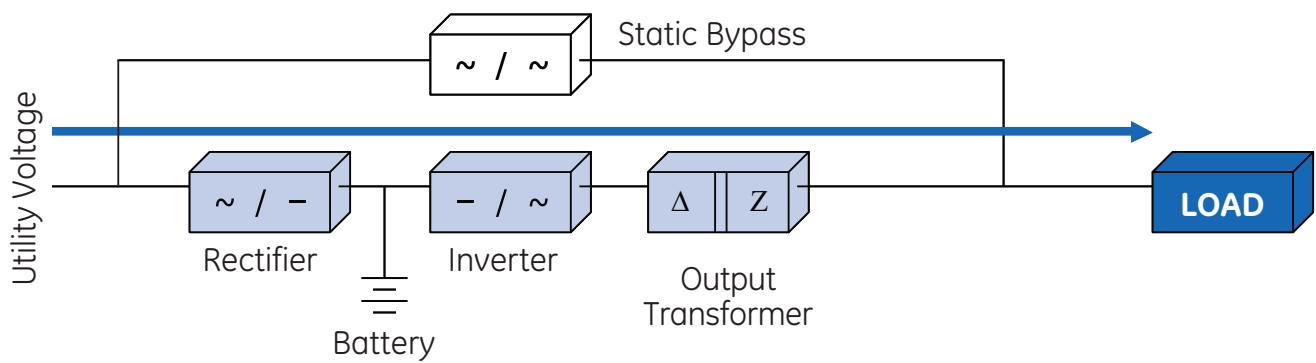


# eBoost

## Customer Benefits

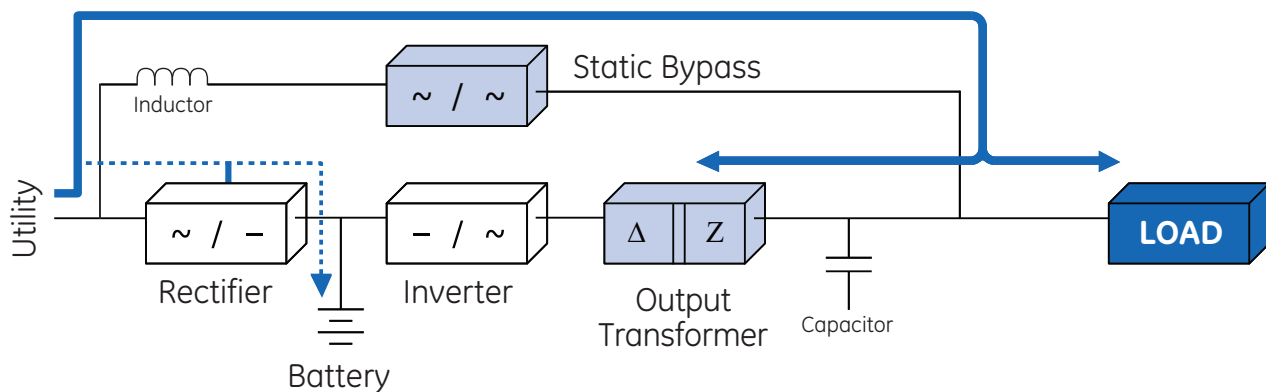
- > 80% reduction in UPS losses
- > System energy cost savings
- > Reduced heat (BTU) generation
- > Energy savings from reduced cooling
- > Extended UPS component life
- > User-programmable scheduling
- > Reduced acoustical noise

## Double Conversion



During traditional operation the UPS runs in double conversion mode. Both the rectifier and the inverter are continuously operating, resulting in an efficiency of 92-94%.

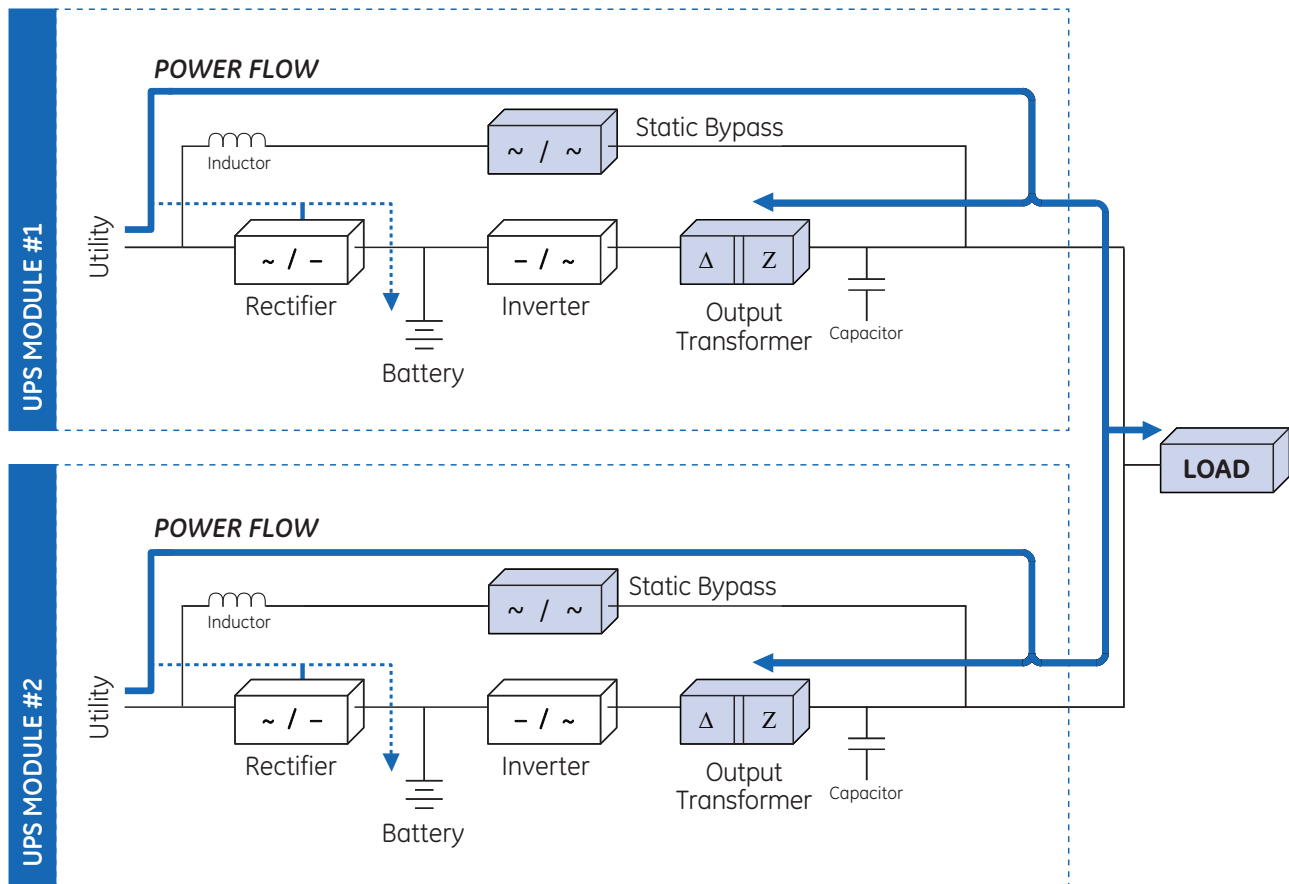
## eBoost Single Module



During **eBoost** operation the load is supplied directly by utility, via the static bypass circuit. This provides an efficiency up to 99%. In case the utility voltage is out of tolerance, the UPS will immediately transfer the load to the inverter in < 2ms. The < 2ms is achieved by our patented\* technology to magnetize the output transformer. The output transformer provides galvanic isolation between inverter and load. The static bypass inductor filters the input AC power during **eBoost** operational mode.

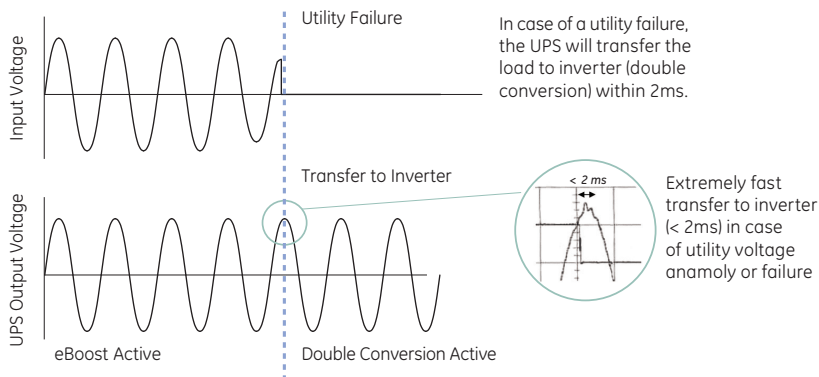
\* U.S. Patent No. 7,372,177

## eBoost in Redundant Parallel Architecture (RPA)



**eBoost** in RPA uses high speed communication and fast digital signal processors (DSP) to parallel up to 6 UPS modules. **eBoost** in RPA provides up to 4.5 MVA capacity and up to 99% efficiency while maintaining < 2ms transfer time to inverter, compliant to the ITI (CBEMA) curve.

### eBoost Performance



### Specifications

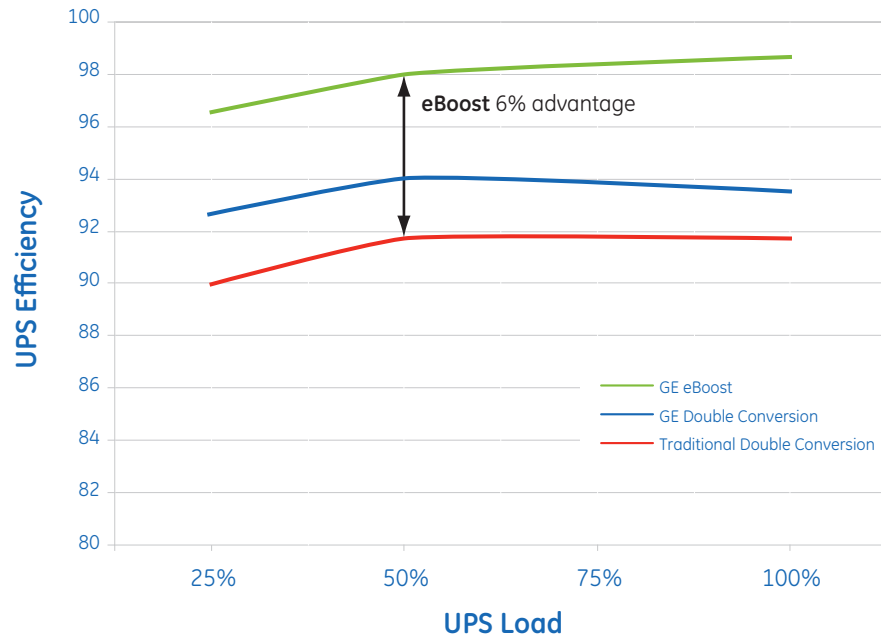
On SG Series UPS products, 225-750kVA, single module and Redundant Parallel Architecture (RPA) operation:

Transfer time	: < 2ms
Input voltage range	: +/- 10%
Input frequency range	: +/- 2%
Efficiency	: up to 99%

# GUARANTEED HIGHER UPS EFFICIENCY

## eBoost Efficiency

eBoost provides operating efficiencies up to 99% and is 6% more efficient, on average, across the load range than traditional double conversion UPS operating at less than 92%.



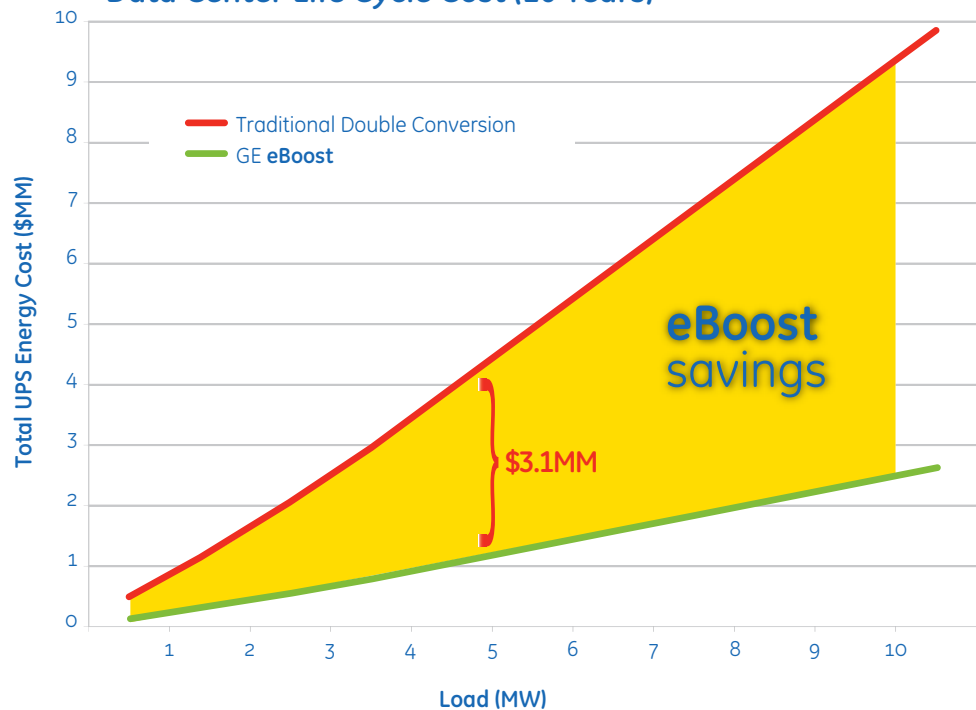
## eBoost Savings

eBoost operation provides considerable energy life cycle cost savings ranging from \$0.5MM to \$7MM.\*\* Savings are dependent upon load, power costs and life cycle duration (years).

\*\* Assumptions:

- Power Cost = \$0.10/kw-hr
- Operating Hrs/Year = 8,760
- Configuration = S+S operating at 50% of capacity

### Data Center Life Cycle Cost (10 Years)



© 2010 General Electric Company. All rights reserved.

The contents of this document are the property of General Electric Company. No part of this work may be reproduced or transmitted in any form or by any means, except as permitted in written license agreement with General Electric Company. General Electric Company has made every reasonable attempt to ensure the completeness and accuracy of this document. However, the information contained in this document is subject to change without notice, and does not represent a commitment on the part of General Electric Company.

eBoost is a trademark of General Electric Company

Represented by:

**Critical Power Systems**  
Power Quality Specialists

3010 Business Park Dr., STE D  
Norcross, GA 30071  
Ph: 770-956-0091  
[www.criticalpowersys.com](http://www.criticalpowersys.com)



U.S.-Based Customer Service

GE Energy - Digital Energy  
830 W 40th Street  
Chicago, IL 60609 USA  
800 637 1738  
[www.gepowerquality.com](http://www.gepowerquality.com)

DEA-501 (12/10)

