

Powering Satellite and Wireless Communications

Downtime is costly. No one knows this better than Globecom Systems Inc., a leading full service designer and integrator of satellite ground segment systems and networks, and wireless terrestrial networks. These systems support a wide range of communications applications. For the user, leasing a small amount of transponder space (enough communications capacity for 10 voice and 2 data channels) on a satellite can cost approximately \$1,000 per day. A video channel can cost \$5,000 per day. Downtime is unacceptable because an organization using the satellite pays even if their ground segment system is inoperable.

“Early on, while working with an Uninterruptible Power System that did not incorporate on-line technology, we sustained significant damage to some very expensive equipment because of a power surge. It was then that we decided to move to the Powerware systems,” said Capwell. “We’ve been very pleased with the results.”

Globecom Systems’ customers include prime communications infrastructure contractors, government-owned postal, telephone and telegraph providers, other telecommunications carriers, producers and distributors of news and entertainment content and other corporations. The company designs, assembles and installs ground segment systems typically consisting of an earth station, which is an integrated system designed to transmit and receive signals to and from satellites, together with ancillary equipment. Ground segment networks are generally comprised of two or more ground segment systems communicating with a satellite and interconnected with a terrestrial network. In the five-year period following the summer of 1994, Globecom Systems has installed approximately 80 ground segment systems and networks in 31 countries.

Globecom Systems knows it must deliver systems that provide ultra-high availability and reliability while still being cost effective. At the top of the list of causes of potential downtime are unreliable power sources. With so many of the installations being in remote areas that have frequent power fluctuations and outages, Globecom knew it had to design systems that would operate no matter what problems were experienced with normal electrical power source.

“We needed to protect our equipment from power anomalies such as spikes and sags, and we needed sufficient back-up power in the event of a complete blackout condition,” said Glenn Capwell, Senior Systems Engineer with Globecom Systems, “so we decided to integrate an Uninterruptible Power System (UPS) into our designs.”

POWERWARE®
POWERING THE WORLD

After working with another type of Uninterruptible Power System, Capwell and his team settled on the Powerware® Plus 18kVA and 36kVA UPS as well as, the Powerware 9315 from Powerware Corporation (formerly Exide Electronics). "Early on, while working with an Uninterruptible Power System that did not incorporate on-line technology, we sustained significant damage to some very expensive equipment because of a power surge. It was then that we decided to move to the Powerware systems," said Capwell. "We've been very pleased with the results."

The Powerware UPS systems feature sophisticated on-line technology and are designed and built for mission-critical applications. The on-line technology completely isolates the load from spikes, surges and sags in the incoming power. These UPS systems are available with an LCD display that supports multiple languages and are available in models that accept various input voltages, making them suitable for applications worldwide.

In the Powerware 9315 models with nominal ratings of 50kVA and above, the high availability and serviceability of the system is the result of Powerware Hot Sync®, a parallel module architecture that enables each UPS module to synchronize and support the load independent of the other. Also contributing to the industry-leading reliability is a design with a low component count and only four printed circuit boards (PCBs). By using software instead of hardware for much of the functionality, and other innovative techniques, Powerware's engineering team easily surpassed other typical Uninterruptible Power Systems that can have 17 or more PCBs. With each additional PCB the chance of a failure increases. The Powerware 9315 also has redundant fans and control power supplies, further enhancing reliability.

The 50kVA and higher models also have a rich set of features for management, monitoring and control. Battery management is easy, with DC Expert providing battery time indication and automatic battery tests. Also, through Remote Notify, key personnel can be alerted to over 100 alarm conditions. This rapid warning provides critical time to take necessary action.

In addition to its system integration business, Globecom Systems' subsidiary, NetSat Express, brings the power of the Internet to places where terrestrial communications infrastructure has not yet been developed, or is unable to support Internet communication at an adequate data rate. The company incorporates high-speed satellite Internet connections into customized Direct Access solutions for ISPs, businesses and organizations. Again, the ground based equipment and supporting infrastructure is protected by a Powerware 9315 UPS.

With Globecom Systems' emphasis on quality and availability, and a keen understanding of the cost of downtime, it is no wonder that more and more organizations worldwide are turning to Globecom Systems for custom designed satellite and wireless terrestrial networks to support voice, data and Internet applications.

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The Powerware Plus 18



The Powerware 9315