

# Case Study

## Falcon Electric Solves UPS/Generator Compatibility Problems in Belize

Belize, formerly known as British Honduras, is a small nation on the eastern coast of Central America. The only English-speaking country in Central America, Belize was a British colony for more than a century and became an independent nation in 1981.

Serving the radio and wireless network communications needs of the country since 1988 is Belize Communication & Security (BCSL). As the oldest existing Land-Mobile Radio Service Center in Belize, BCSL is an Authorized Motorola Service Center. BCSL offers and services alternative energy products, such as Falcon Electric's Uninterruptible Power Supplies (UPS), weather stations, and security vision equipment. Additionally, as a U.S. Government Contractor for Central and parts of South America, BCSL installs and services 300 Mbps high speed wireless connectivity equipment.

Back in the late 80's, communication services were only available in the urban areas of Belize. People living in remote areas were not served and did not have any way of communicating with the rest of the world. To solve this problem in these rural areas, systems were established and have contributed to the continued economic development of rural Belize.

"Because of the small population in Belize, revenue from our local customers was not enough to support the financial needs of the company," says Rick Simpson, president of BCSL. "We had to go outside the borders of the country to market our services in order to afford to support the level of service needed in Belize." Simpson continues, "We found that the talents of those in our organization were formidable not only in Belize but worldwide."

BCSL's communication services do not stop at just radio and telephone. Their staff provides local and regional "dispatch" and

"repeater" service, e-mail services to those living in remote areas, network services for large multi-national organizations and substantial computer list servers for international companies.

"Money is not the only gratification in our jobs," says Dave Cryer who wears one of the typical multi-responsibility hats at BCSL. Dave serves as webmaster, network manager and computer technician at BCSL.

"We handle about one and half emergencies per week in-country. There is no greater sense of accomplishment than when you have contributed to helping people and sometimes even saving someone's life with our communications capabilities."


BCSL's remote location is both a blessing and an obstacle when it comes to building reliable computer and communication networks in Belize. "As one would expect, the power from the local utility company is sometimes unstable. During a typical week, we have to transfer to our on-site generator at least once," explained Cryer. "This used to cause problems to the UPSs that protect our computers, Internet working gear and other sensitive electronics."

The UPSs that BCSL used were a popular brand with an on-line topology, meaning that the UPS would change the incoming main's AC (alternating current from the utility line) to DC (direct current to charge internal batteries), then regenerate a new AC power source by inverting the DC back to AC. In spite of this mode of power conversion, the UPS itself was not rugged enough to operate from the generator. "When we went to generator power, the UPS would detect an emergency condition and stay on its internal batteries. After a short period of time, the UPS would shut down and we would lose power," reflected Cryer.

“ We knew we had to find a UPS that was not only on-line but robust enough to accept the unstable power from the generator and convert that power into a clean, regulated sine wave without utilizing its internal batteries.”

– Rick Simpson,  
President BCSL



 Falcon Electric, Inc.  
5116 Azusa Canyon Rd.  
Irwindale, CA 91706

 1-800-842-6940

 sales@falconups.com

 www.falconups.com



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## Precision Power Protection for Communications Applications

"We knew we had to find a UPS that was not only on-line, but robust enough to accept the unstable power from the generator and convert that power into a clean, regulated sinewave without utilizing its internal batteries. During my UPS research, I looked at several UPS companies and was pleased to find that Falcon Electric had a sales and engineering staff that could answer our questions accurately and quickly. In addition, I was impressed with the amount of detailed information on their web site and it became clear that the SG Series™ UPS Plus® rackmount line would solve our power regulation problem. The icing on the cake was the fact that the Falcon SG Series gave me the flexibility of communicating remotely via an SNMP/HTTP-based internal interface card option, which is a critical function since we have a lot of remote nodes that we need to stay in contact with on a continual basis.

I was pleased to finally find a UPS company that focused on rugged products. I knew that the professional-grade Falcon SG Series would cost more than the commercial-grade product we used. Fortunately, the 'real-world test' that our present UPS failed to pass gave us the cost-justification we needed to invest in a more robust solution. It turned out that the price was reasonable, so we ordered several units.

Installation was simple and after using Falcon's SG 3kVA UPS, model SG3KRM-1TU, with the internal SNMP/HTTP communications interface, we have solved our power problems. Today, the Falcon unit also provides another benefit that we didn't expect: the SG Series is so precise that it sends out an alarm when our power source changes from the utility line to our diesel generator. We use this information for our internal record keeping.

We will continue to order more of the Falcon SG Series products because these UPSs give us the peace of mind that is essential to BCSL and our growing customer base."

### Advanced Features:

- True Double Conversion On-Line, Sinewave Design
- Input Power Factor Correction
- Wide Input Voltage Window
- Precision Output Voltage Regulation
- Superior Brownout, Surge and Transient Protection
- Internal System Bypass
- Eliminates Generator Frequency & Voltage Drift
- Microprocessor Control & RS-232 Communications
- UPSilon® Monitoring & Shutdown Software
- Optional Frequency Conversion
- Optional Extended Battery Packs & Chargers
- Optional Internal SNMP/HTTP Interface Card
- Two-Year Warranty

