



## *SureReach 2000 Application: "Switchable" Power for Fiber-to-the-Premise*

Service providers are building **Fiber-to-the-Premises (FTTP)** networks, offering "triple play" video, data and voice services to residential subscribers, including primary line phone service. Recent FCC rulings mandate eight-hour emergency back-up for critical outside plant telecom "assets". *SureReach* offers a simple and reliable way to power **Optical Network Terminals (ONTs)** on fiber optic networks without using expensive batteries or requiring complex maintenance. It provides reliable "life-saver" primary line service using a combination of **Network Line Power (NLP)** and local power derived from commercial AC power.

### **The Challenge: Powering FTTP**

Replacing copper with fiber comes with a challenge: fiber cannot carry power. Power must be locally supplied using AC/DC power supplies. Some form of battery back up is needed to maintain primary line phone service over power failures. One choice is to use an Uninterrupted Power Supply (UPS). However, UPS units are expensive, use lead-acid batteries that require special handling and disposal, need periodic proactive maintenance and are typically designed to last only 2 to 4 hours. Phone companies get a flood of dispatch requests to replace dead batteries during emergencies, just when resources are most stretched. NLP solutions use the existing copper telephone line network to carry DC power to the home from reliable, well maintained central office locations. This NLP network is independent of the commercial power network. By normally running off the local commercial AC the ONT, or other units do not use central office power, except in the case of an emergency. If local power fails, *SureReach* will switch over seamlessly to the standby NLP and signal the ONT. The ONT can then create alarms or go into emergency power mode.

### **The Solution: SureReach 2000 Switchable**



*SureReach* is a small, out-door unit that can be mounted next to the ONT on the side of a building. It has two power sources. It either takes customer supplied power as the default, or if customer supplied power is

interrupted, it automatically switches to power supplied from the central office. *SureReach* converts +/- 190 VDC from the central office over the copper telephone network to 12VDC. With *SureReach* there is no need to rely on homeowner proactive maintenance, local AC power alone or indoor or outdoor batteries at the home to provide reliable primary line service to the customer.

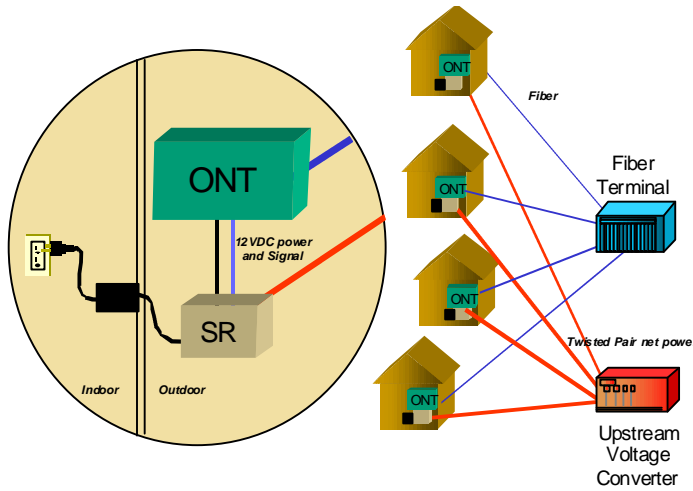
### **Customer Benefits**

- **No loss of service during power outage**
- **No homeowner maintenance**
- **No hazardous battery disposal/replacement**

### **Phone Company Benefits**

- **No battery stocking and recycling**
- **Fewer truck rolls in emergency situations**
- **Only uses telco power in emergencies**
- **No customer training**
- **ONT signals local outage**
- **Lower five-year costs**

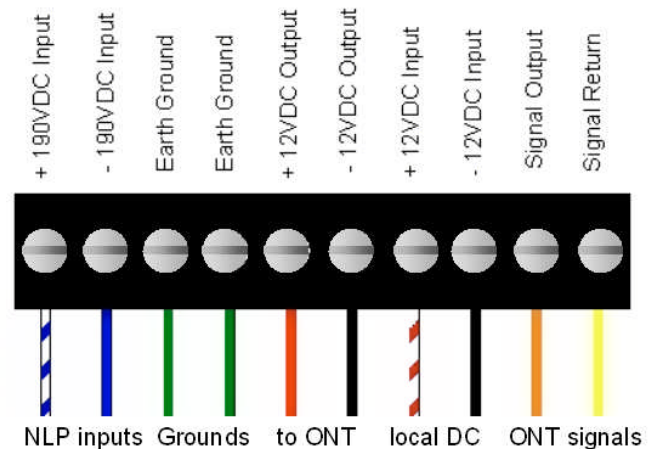
## How it Works - Supporting FTTP Networks with Network Line Power



*SureReach* residential power converters support FTTP by providing reliable power to various types of network termination devices. Central office DC power is derived from AC utility power, using AC to 48 VDC converters and rectifiers, and parallel lines of lead acid batteries backed by a generator. These batteries are well maintained, operate under ideal conditions and provide reliable and economical power from a central location. One or more copper twisted pairs connect the central office NLP shelf to *SureReach* nodes mounted in residential locations. In FTTP networks fiber optic cable is also “home run” to ONT mounted next to *SureReach* on the outside of the home. To power the ONT the *SureReach* field node converts high voltage network line power from the “upstream” central office shelf to 12 VDC, and supplies it to the ONT device. This eliminates the

need for residential or neighborhood batteries and UPSs of any kind, either indoors and maintained by the homeowner, or outdoors on the side of a building or in a pole-mounted and metered neighborhood battery box maintained by the service provider. Inside the home an AC/DC converter “brick” provides 13.8 VDC derived from local AC commercial power to the outdoor *SureReach*. The ONT is connected to the *SureReach* by two lines: a 12VDC power line and a “signal” line which indicates from which power source the *SureReach* is running. Under normal conditions *SureReach* runs off the local power provided by the AC/DC converter, but if that source fails it automatically and seamlessly switches over the standby NLP power source. The ONT can detect this signal change and inform the central office. Customer care processes can then be initiated, including notifying the customer.

SureReach SR2-12190S is just one model of a line of outdoor hardened power supplies tailored for use in homes, buildings, apartments, outdoor spaces, cell sites, telephone poles and cabinets. For more information, go to [www.generonix.com](http://www.generonix.com).



### For More Information

[www.generonix.com](http://www.generonix.com) or 1-866-464-4693

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