

Power Supplies used for Voice Services on FTTP Loops



1. Introduction.

This document provides information regarding certain backup power options that may be used to power Verizon's optical network terminals ("ONTs") to avoid disruption of voice/POTs services ("Voice Services") on fiber-to-the-premises ("FTTP") loops in the event of a commercial power outage. For end users who wish to have backup power, Verizon's wholesale customers may use this information to identify which backup power option is available for particular types of ONTs and associated power supply units. Wholesale customers or their end users, of course, may wish to obtain backup power via methods not described in this document (such as an uninterruptible power supply (UPS) or on-site generator) or they may wish to forego backup power altogether.

As described further below, most ONTs are powered via either of two methods: (i) a 110v AC power supply unit that also accepts a single 12-volt lead acid battery for backup power ("BBU"), or (ii) a power adaptor that can interconnect with a separate piece of equipment that uses 12 common D-cell flashlight batteries ("PowerReserve") for backup power. In certain situations involving multiple lines, as described further below, Verizon uses large-capacity ONTs for which Verizon (as of the date of publication of this document) will continue to provide backup power.

This document is informational only, and is not intended to limit Verizon's ability to install particular ONTs or power supply units as it determines necessary for particular services or locations, or to modify its practices to reflect changes in the availability of equipment or other circumstances. This document is not intended to alter any rights or obligations set forth in applicable contracts or tariffs, which shall govern and prevail over any conflicting information set forth in this document.

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2. Power Adaptors that are compatible with a PowerReserve.

For service requests for one or two voice lines requiring installation of a new ONT, Verizon will typically power the ONT using one of the 110v AC Power Adaptors shown below. Also, when Verizon performs maintenance on existing Voice Services, Verizon may need to perform an upgrade such that an existing power supply that works with a 12-volt lead acid battery backup unit (“BBU”) is replaced with this type of Power Adaptor. These Power Adaptors are compatible with a PowerReserve (shown under Section 3 of this document) that uses 12 common D-cell flashlight batteries for backup power. In cases where this type of Power Adaptor is installed, Verizon will not provide the PowerReserve. Battery backup power, if desired -- whether via a PowerReserve or by other means -- must be provided by the wholesale customer or the end user.



CyberPower



Delta

Figure 1: PA (Power Adapter) Top View

3. PowerReserves.

For end users who wish to have backup power for the above Power Adaptors, the PowerReserve available for purchase is the same as, or similar to, those shown below (depending on the manufacturer). These PowerReserves use 12 common D-cell flashlight batteries for backup power.

Verizon has put in place arrangements with equipment vendors, so that wholesale providers may purchase the PowerReserve directly from them. Verizon has provided further information regarding these arrangements in a notice to customers, and the information can also be obtained through Verizon’s wholesale account managers.

Wholesale providers or their end users also have the option to purchase individual PowerReserve devices online from Verizon at retail prices and have the unit direct-mailed to the wholesale provider or end user. This option can be found on the Verizon website under Accessories at: <https://www.verizon.com/home/accessories/networking-wifi/>. Please note Verizon does not support bulk purchases or bulk mailing, and purchasers using this method are limited to one device per order. PowerReserve devices sold by Verizon are offered strictly as

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customer-owned accessories, are not maintained by Verizon as network equipment, and subject to Verizon's return policies which may be found on the website above.

For certain pre-installed ONTs that serve one or two voice lines, the ONT may be powered by a Power Adapter that is already connected to a PowerReserve. In such cases, Verizon will not provide replacement D-cell batteries for the PowerReserve. Replacement D-cell batteries may be purchased separately through common retail channels such as grocery, hardware, and convenience stores.



Alcatel/Nokia Brand PowerReserve



Delta PowerReserve

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4. Battery Backup Units that use a 12 volt lead acid battery.

For certain pre-installed ONTs that serve a single voice line or up to four voice lines, a power supply unit and battery backup unit (“BBU”) that use a single 12-volt lead acid battery may already exist. Replacing the 12-volt lead acid battery is the responsibility of your company or end user. Such batteries may be purchased separately from Verizon or other retail channels such as home improvement stores.

A picture of the typical 12 volt lead acid battery is shown below, followed by pictures of power supply units that contain this type of battery, and an ONT type for which the power supply and battery are all contained within the ONT unit itself.

Typical 12 volt lead acid battery:



Power Supply Units containing 12-volt lead acid battery:

CyberPower v4*



Delta BBU*



***The above power supply units are separate from the ONTs that they power. These power supply units contain a 12 volt lead acid battery inside a removable cover.**

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Motorola JI type ONT – 12 volt lead acid battery *contained within* the ONT unit:



5. Multi-Tenant or Large Capacity ONTs Using BBUs.

For certain situations where a large capacity ONT unit (typically located in a basement or a telco closet) supports service to many end user customers or living units), Verizon will provide battery backup units and batteries, as required, for such ONTs (such ONTs are sometimes referred to as “SOHO ONTs”). Examples of such ONTs and BBUs are shown below:

Emerson BBU for use with SOHO ONTs



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Arris (Motorola) 1500 SOHO

Nokia (ALU) 821 SOHO

