Major Telco Reduces Infrastructure for Optimization of Space and Operating Costs

A Vertiv Case Study



Background

An important telecommunications company in Argentina that offers connectivity and entertainment solutions to more than 28 million customers needed to deploy new telecommunications equipment while ensuring optimal use of its physical space. This new AC and DC power infrastructure would enable secure, flexible, and dynamic service to all devices at a lower operating cost, whether landline or high-speed mobile.

Challenge

Vertiv equipment for 9 kilowatts (kW) of power is normally four rack units (U) high, but the equipment requested by the customer had to be only 1U while maintaining the same width as a standard telecommunications rack. For this reason, a custom solution was needed, requiring a change to the mechanical design with redistribution of equipment components.

The product combined four models of a single rack unit in the following ways:

- Single-phase with battery and load breaker
- Single-phase with load breaker
- Three-phase with battery and load breaker
- Three-phase with load breaker

Additionally, a second version of 18 kW equipment that typically occupies 5U of space needed to be distributed in a 2U rack, which also called for customization.

While optimizing the IT space, this telco also needed to optimize operations which required network architecture considerations like reducing the distance between the energy storage equipment and consumers in order to reduce energy loss due to heat generation in the interconnection wires.

Challenge:

Develop a customized, AC and DC power solution to meet space restraints while reducing total infrastructure and optimizing operating costs.

Solution:

- Vertiv™ NetSure™ 732 LBR - Brazil
- Vertiv service support

Results:

- Less infrastructure due to customized solution
- Optimal use of rack and facility space
- High level of reliability for the short-term and long-term due to acceptance testing and training services
- Improved energy efficiency

Solution

At the Vertiv production plant in Brazil, the power equipment's mechanical design was modified to considerably reduce vertical dimensions, yet maintain the same width as a standard telecommunications rack.

Vertiv also created a back panel behind the rectifier modules to contain all the distribution and load breakers, as well as wire entry and exit terminal blocks — components that are usually located in the front of the rack above the rectifier modules. This creation took a couple of months once the exact design of the equipment was defined.

For installation in a standard telecommunications site, 42U racks are normally used. Therefore, using these new DC power systems with only 1U or 2U gave the customer more than 94% of the rack for equipment installation.

"In some cases, clients request minor customizations such as changing the capacity of a breaker or adding a temperature sensor, but in this case, it was necessary to create a completely new mechanical design, paying particular attention to the energy density in a very small space."

- David Wilson,
Global Offering Director, Vertiv

Results

With the Vertiv NetSure 732 LBR – Brazil DC power system, this telco realized high reliability, along with a number of other benefits.

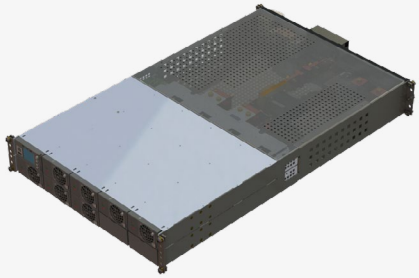
Customized solution for less infrastructure and space optimization: Because this company's equipment was designed specifically to be used in IT racks, it has less height, but greater depth than typical deployments for this type of application. In this way, the company can have all its racks with the same depth in the same room.

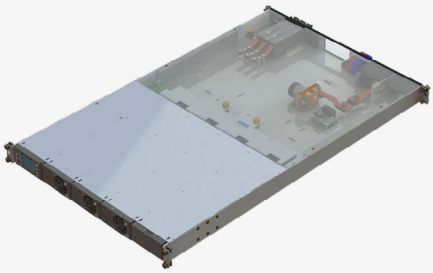
Improved energy efficiency for less costs: The Vertiv solution allowed the energy storage (DC) equipment to be installed in the same room, and in many cases, in the same rack as the telecommunications equipment. Therefore, wire length and heat loss were reduced, improving energy efficiency and reducing operational costs.

To date, Vertiv has received purchase orders for an additional 200 pieces of equipment in order to extend the original contract. This equipment is installed in a variety of stations distributed in Argentina and customization is available as needed to enhance future required solutions.

Main Features and Benefits:

- High efficiency and reliability
- Rectifiers with high power densities
- Optimization of space due to size
- Smart controllers, remote monitoring, battery monitoring, and various distribution modules





Enable efficient and reliable power in your data center and telecommunications facilities with scalable and flexible DC power system solutions

Vertiv.com | **Vertiv Headquarters,** 1050 Dearborn Drive, Columbus, OH, 43085, USA

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