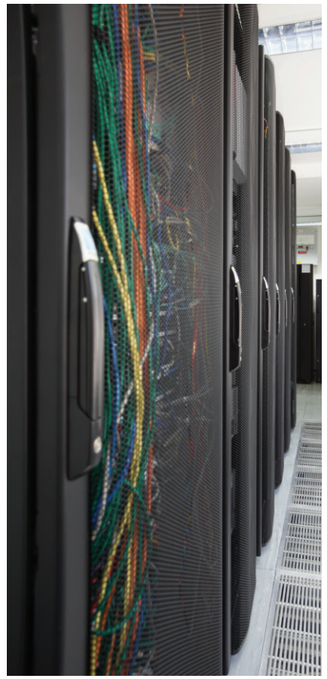
Build Cost-efficient and Energy-saving Communications Infrastructure with ADRF and VoltServer

ADRF

VOLTSERVER
DIGITAL ELECTRICITY™



Innovation in Power Distribution Helps Enterprises Meet Wireless Needs

As we continue to become an increasingly connected society, cellular coverage in facilities has transitioned from “nice-to-have” to joining the ranks of electric, gas, and water as the fourth utility. Building managers aren’t just investing in wireless networks to provide good cellular service to staff and guests, but to enable digital experiences. 5G is poised to bring innovation to supply chains through massive IoT capabilities, enable advanced artificial intelligence applications as well as augmented and virtual reality experiences at scale to improve operational efficiencies and reinvent workflows.

However, there are significant implementation challenges when bringing wireless indoors. Building materials can impede radio frequency (RF) signals, which often requires investment in distributed antenna systems (DAS), repeaters, or small cells for adequate wireless coverage. This is true today with 4G/LTE systems, but even more challenging with mmWave spectrum that will offer the high speeds and low-latency connectivity associated with 5G but will travel much shorter distances. While smaller facilities require small-scale solutions, such as a bi-drectional amplifier (BDA) or a small cell, most medium-to-large facilities, such as warehouses or commercial offices, require an active DAS to bring coverage indoors.

As this market for wireless continues to grow even more with the emergence of 5G for the enterprise, building owners must become savvy in reducing costs of installation and long-term OPEX of these in-building wireless deployments. One solution to achieving this is through Digital Electricity™.

To understand DE for in-building wireless system deployments, owners must know what typically goes into a DAS deployment. There are two types of DAS, a passive DAS that does not require fiber and an active DAS that does require fiber. A passive DAS can cover a small venue and consists of a repeater that is connected to a network of antennas. An active DAS can cover medium to large venues and consists of a repeater that connects to a fiber Headend (HE) which then feeds remote units (RU) throughout the structure using fiber. The HE and RUs are often placed in telecom closets or other hidden locations in a building. The RUs can transmit RF signals to antennas provisioned throughout the location to maximize propagation. In an active DAS, each remote unit requires a power source, which calls for additional hardware and installation costs beyond the antenna network, and that’s where Digital Electricity™ can bring immense cost savings.

How Does Digital Electricity™ (DE) Affect an In-Building Wireless Network?

DE enables venue owners to overcome power and network resilience challenges. DE technology works like packet transmission across enterprise networks, but instead of carrying information, it transmits high levels of power across cost-effective copper cable along the same fiber pathway as the DAS remote nodes. DE allows system integrators to easily provide power to every remote location without the use of traditional thick copper cables and conduits, or having to source local power which is time intensive and costly. Additionally, DE offers control from a centralized source for monitoring and power control.

DE isn’t necessary for every deployment but is ideal for facilities where there is no power source at remote locations, and therefore requires long distance power runs as well as for deployments where resilient centralized backup power is required or desired. Additionally, DE is classified as a power limited source allowing for the system integrators tasked with deploying DAS in the first place can complete the installation with technician labor which dramatically saves costs in technical labor and streamlines project completion.

In the long-term, safety is also an important benefit of DE. Through a protocol called Packet Energy Transfer, packets of energy are transmitted over the DE copper conductors and delivery of the energy is validated between the HE and remote units ensuring there are no fault conditions present ensuring the safe delivery of power. The DE circuit will not transmit power until the fault condition is removed or resolved. Not only does this prevent potential workplace dangers, it also removes the need for an electrician to come in and fix the issue over time.

In-building wireless deployments are becoming a necessity but can balloon expenses unless facility owners invest in the right technologies to reduce implementation and hardware costs. Digital electricity is a valuable way to provide facilities the connectivity they need to power new digital solutions for 5G or LTE, while minimizing costs and safety concerns. Not all network architectures can strategically place remote units next to native power sources, and this allows even the trickiest buildings to receive the needed connectivity in a timely manner.

ADRF and VoltServer Solution Overview

ADRF In-Building Wireless Solutions

ADRF offers the most comprehensive portfolio of 4G LTE, 5G NR, and Public Safety in-building wireless products including:

- Distributed Antenna Systems (DAS)
- Indoor Commercial Repeaters
- Outdoor Commercial Repeaters
- Public Safety Repeaters (aka ERCES)
- Antennas
- Passive Components

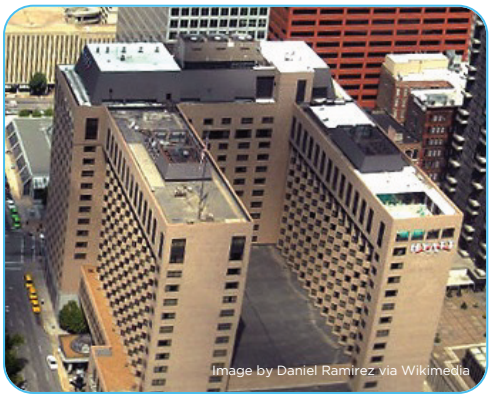
VoltServer Digital Electricity™ (DE) Solutions

VoltServer's solutions delivers cost effective, highly reliable power when installing ADRF's DAS and Repeaters.

- Power delivery up to 2km
- Reduced overall capital investment
- No conduit
- Lower install cost
- Faster deployment with flexibility to change
- Multi-device, multi-service, multi-vendor
- Centralized, policy-controlled back-up
- Highly efficient power delivery

Select ADRF & VoltServer Deployments

CENTRAL PARK OF LISLE
LISLE, IL



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