

VOLTSERVER

DIGITAL ELECTRICITY™



5G APPLICATION GUIDE

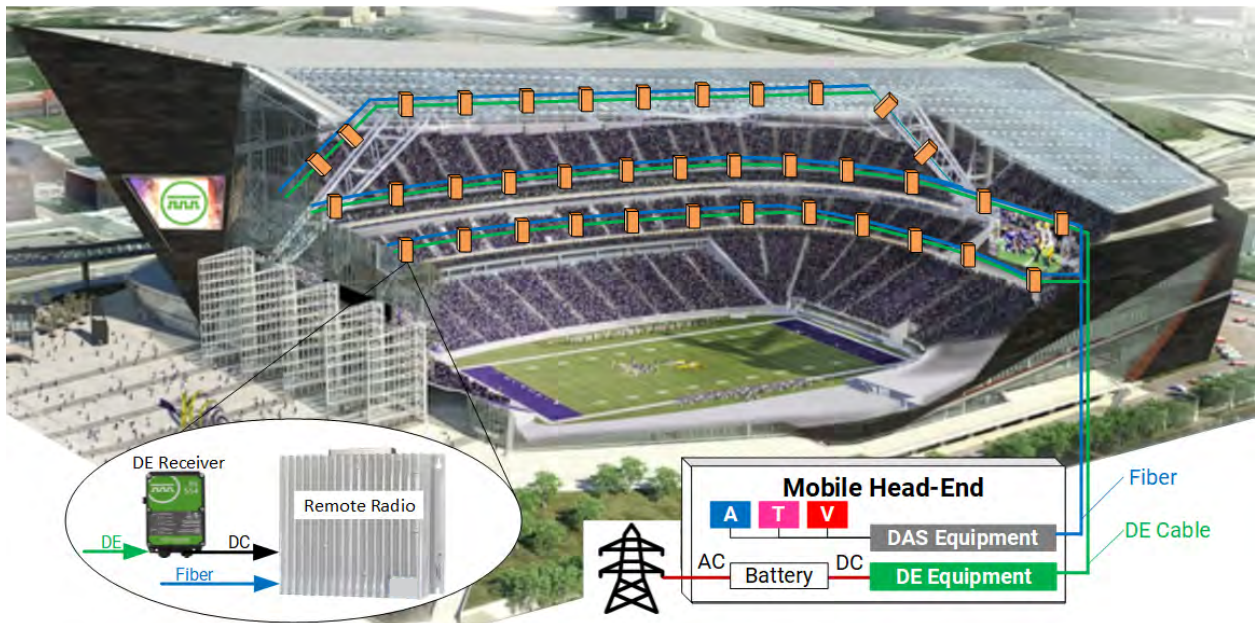
IN-BUILDING 4G AND 5G

THE SCENARIO

In-building 4G and 5G is a requirement to attracting and retaining tenants in commercial properties. Professional sports stadiums have seen exponential growth in data traffic during events, and WI-Fi cannot keep up. Millions of mobile customers passing through airports and other passenger terminals expect ubiquitous coverage and the capacity to meet their personal and professional needs. New private networks are adopting the same technology that was historically only used by mobile network operators, so building owners can offer unique new services to tenants.

THE CHALLENGE

A distributed antenna system (DAS) can address cellular coverage and capacity issues within buildings. In a DAS, remote radios are located throughout the venue to distribute the wireless signals. The challenge is to provide low-cost, resilient power to these remote radio locations. Mobile phones are not only relied on for entertainment, but they are critical for the public's safety to connect with emergency services. Using dedicated AC power involves multiple contractors and managing separate fiber and electrical infrastructures within the building.



WHY VOLTSERVER?

- **Simplicity and Speed of Deployment:** Venues can use the same pathways to deliver power and fiber connectivity to the remote radios.
- **Cost:** Class 2 circuits can be installed by low-voltage labor without expensive conduit.
- **Resilience:** A large battery plant or uninterruptible power supply (UPS) enables emergency fallback power for the remote radios.

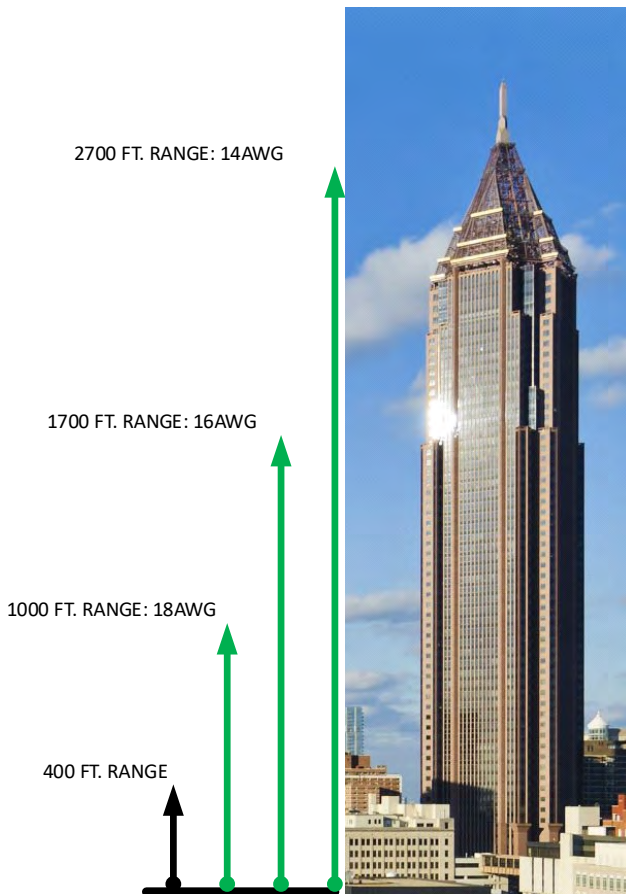
ROOFTOP MACRO SITES

THE SCENARIO

Planning new sites on rooftops can involve structural loading calculations and could restrict the availability of suitable locations. Upgrades of existing tower and rooftop sites by adding more and more equipment due to new operators or technology/frequency additions. Existing sites are the most suitable due to an existing backhaul connection.

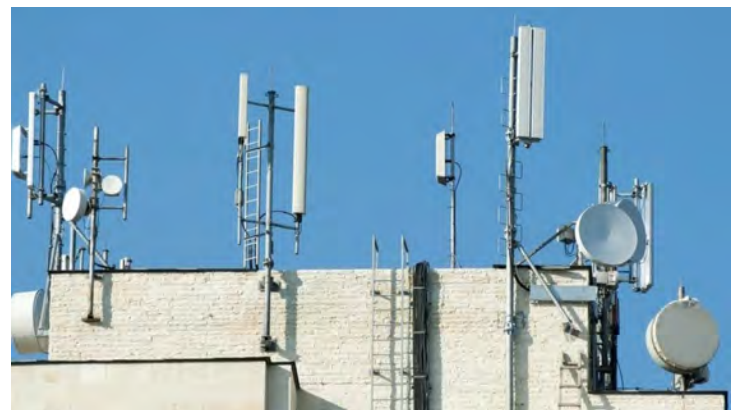
THE CHALLENGE

Structural loading calculations require specialist 3rd parties to produce the calculations and then require approval from the building owner that can delay the deployment. Additional power surveys will be required to meet the new site demand and negotiating with the existing supplier may also delay the deployment. There may not be sufficient capacity local to the equipment resulting in a new infrastructure being deployed.



WHY VOLTSERVER?

- **Cost:** Same pathways for fiber and power reduces the number of contractors involved.
- **Speed:** Power can be obtained from an existing source within the building and be routed up to the roof therefore negating the need for additional AC main supplies on the roof.
- **Scalability:** Digital Electricity can be provisioned for future upgrades with its modular platform.



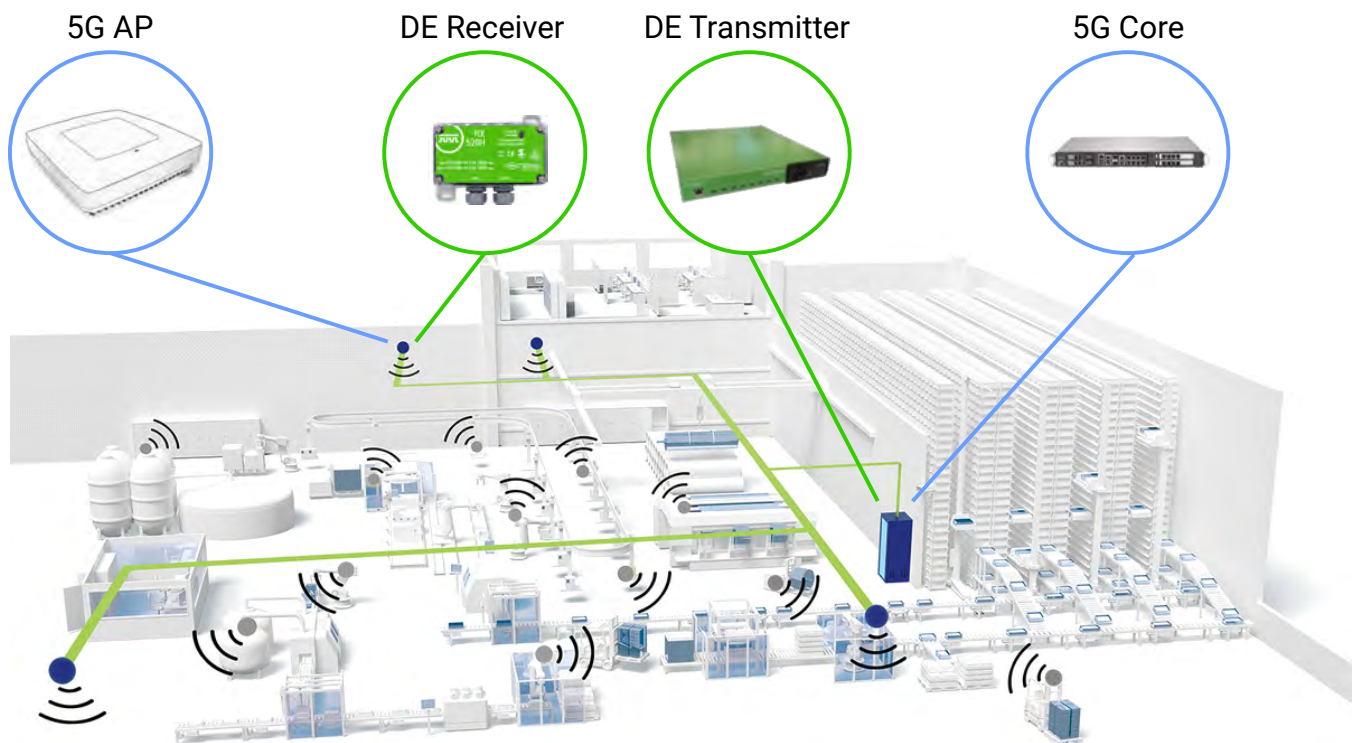
PRIVATE 4G & 5G

THE SCENARIO

In-building 4G and 5G is a requirement to attracting and retaining tenants in commercial properties. New private networks are adopting the same technology that was historically only used by mobile network operators, so building owners can offer unique new services to tenants. These new deployment models can be more affordable and provide unique new features.

THE CHALLENGE

An Enterprise Radio Access Network (E-RAN) can address cellular coverage and capacity issues within buildings at a much lower cost than DAS. The challenge is to provide low-cost, resilient power to these remote radio locations. Mobile phones are not only relied on for entertainment, but they are critical for the public's safety to connect with authorities in an emergency. Private networks can also be deployed for business critical functions. Using local AC power closets will not suffice.

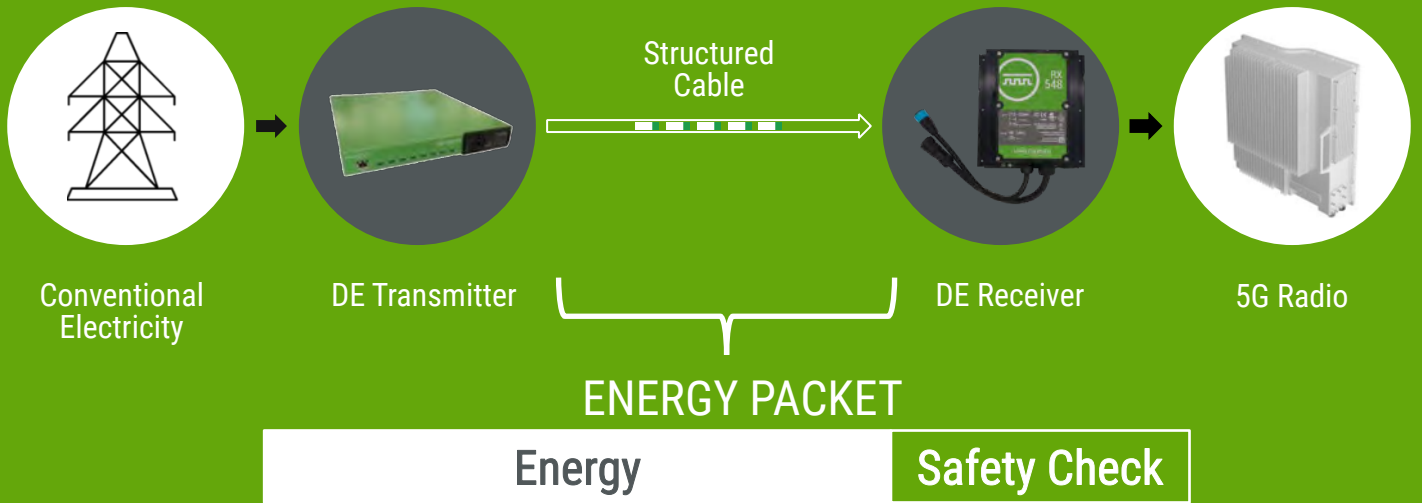


WHY VOLTSERVER?

- **Simplicity:** DE supports multiple services, devices, and vendors
- **Cost:** Can use same pathways as data cables.
- **Flexibility:** A modular design enables additional nodes to be added quickly and easily.

WHAT IS

DIGITAL ELECTRICITY™?



Discrete “packets” of electricity
Each checked for safe transfer from transmitter to receiver.
500 safety checks per second.

SOLUTION 5S's :

- Significant Power: 600W/pair
- Significant Distance: 2km
- Skinny Conductors: 18-16AWG
- Speed to Deploy
- Safely

DELIVERING POWER:

- Where it is needed
- In the format it is needed
- With lower cost & higher resiliency

VoltServer is the leading provider of intelligent, premise-based power distribution solutions leveraging Digital Electricity™ from centralized source to distributed endpoint loads to improve the customer's essential business applications.

Patented and proven **Digital Electricity™** solutions deliver cost-effective, high-reliability power where and when you need.

Digital Electricity™ is a trademark of VoltServer, Inc.

VOLTSERVER

DIGITAL ELECTRICITY™

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