# Centralized Power Delivery Using Digital Electricity™

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There's talk of a new way to safely distribute power over long distances (and it's not Power over Ethernet, or PoE). It's called "Digital Electricity™" and it's having an impact on the way power is distributed across buildings, campuses and cities.

Digital Electricity™ can power systems like:

- ✓Media converters
- ✓Mobile radios (DAS/small cell/macro)
- ✓SELV Hubs
- ✓PoE switches
- ✓Smart displays and digital signage
- ✓Smart LEDs

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## Potential Applications

1. Distributed Antenna Systems (DAS)
2. Passive Optical Networks (PON)
3. Security (Cameras)
4. Wireless Access Points (WAPs)

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# Everyone Needs Power

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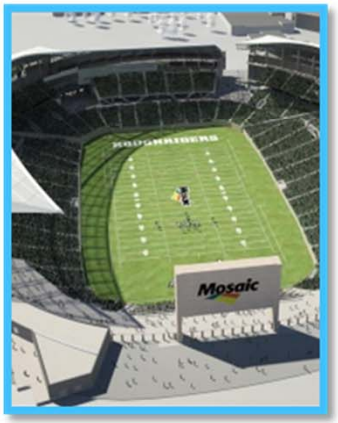
**Hospitality**

**Higher Education**

**Enterprise**

**Government**

**Stadiums & Venues**

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# Remote Power Delivery Systems

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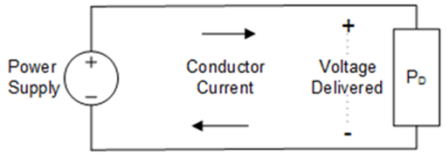
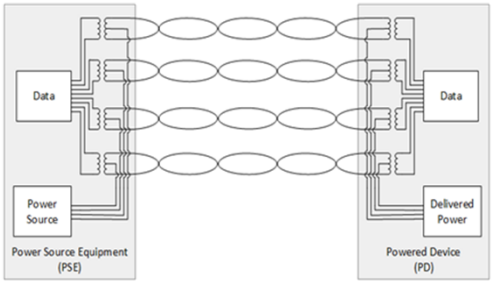
## Line Power (DC)




Moderate Distance (100+ meters)
Medium Power (up to 100 Watts)

## PoE




Short Distance (up to 100 meters)
Medium Power (up to 100 Watts)

## Digital Electricity™


Long Distance (1000+ meters) or
High Power (1000+ of Watts)

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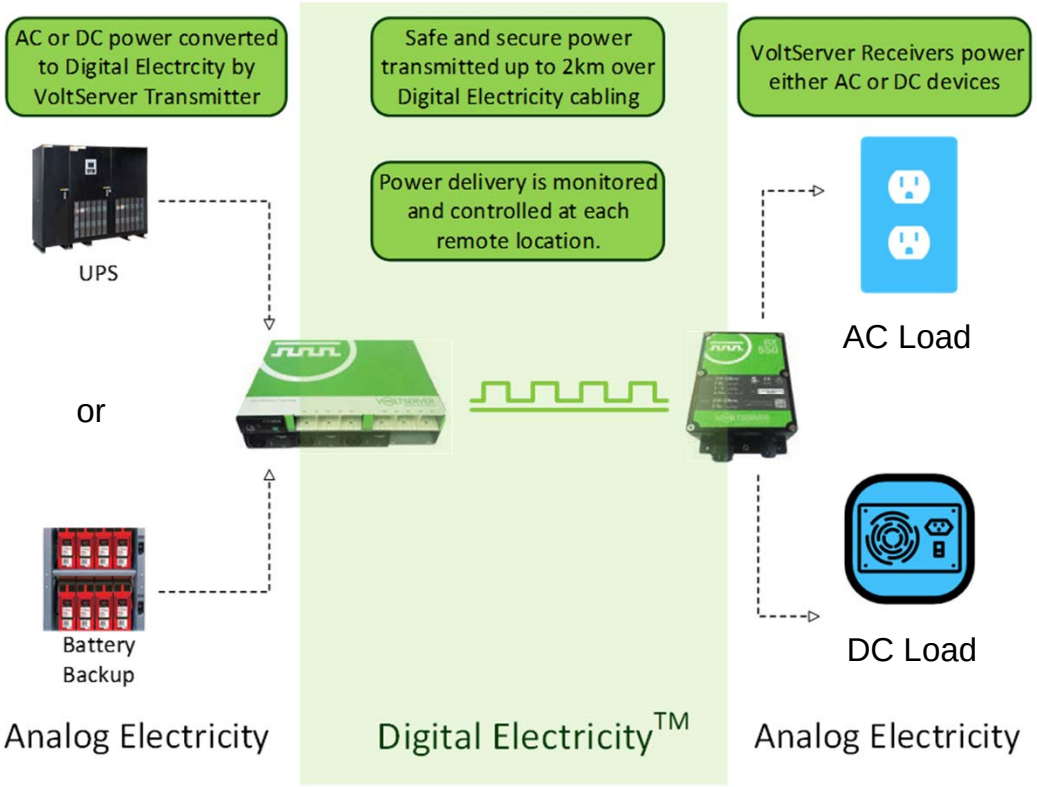
# What is Digital Electricity™?

The 5 S's

Safe delivery
of
Significant power
a
Significant distance
with
Small conductors
and
Speed to deployment

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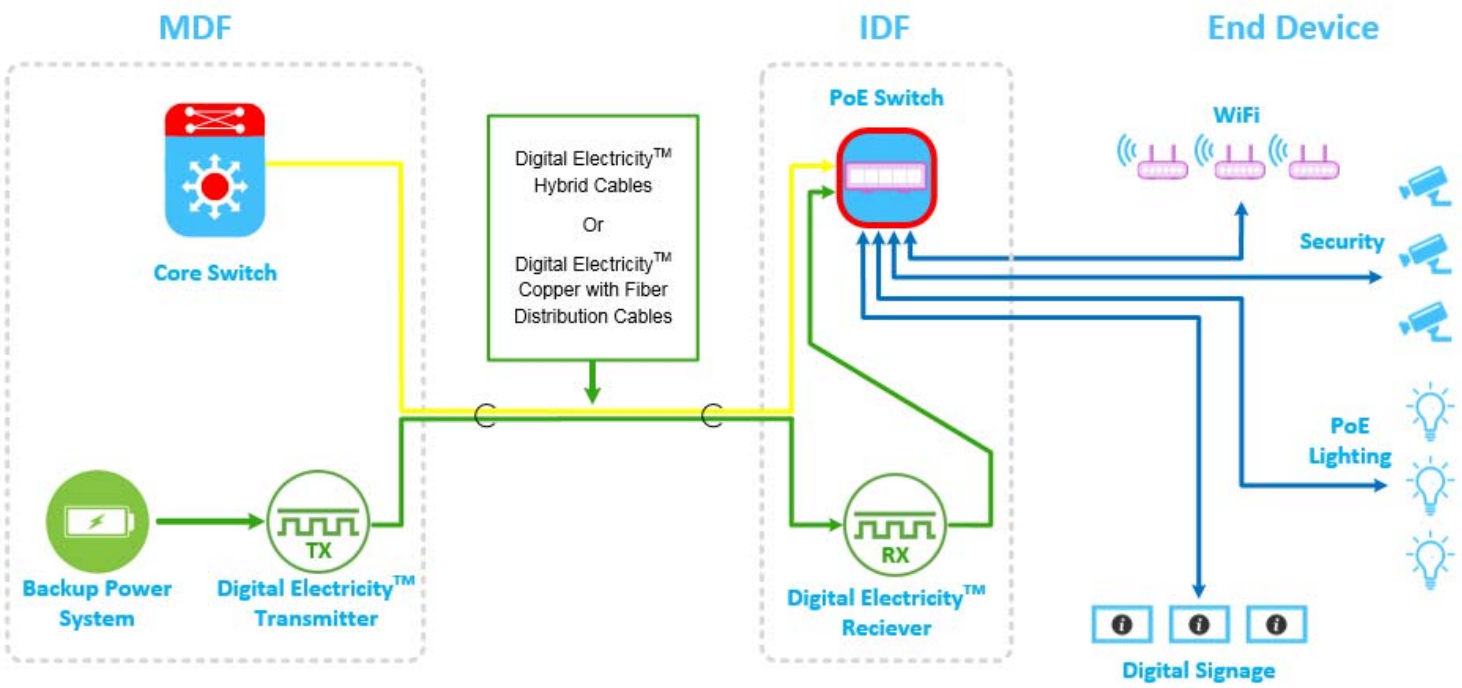
# Digital Electricity™ Example in Enterprise Network

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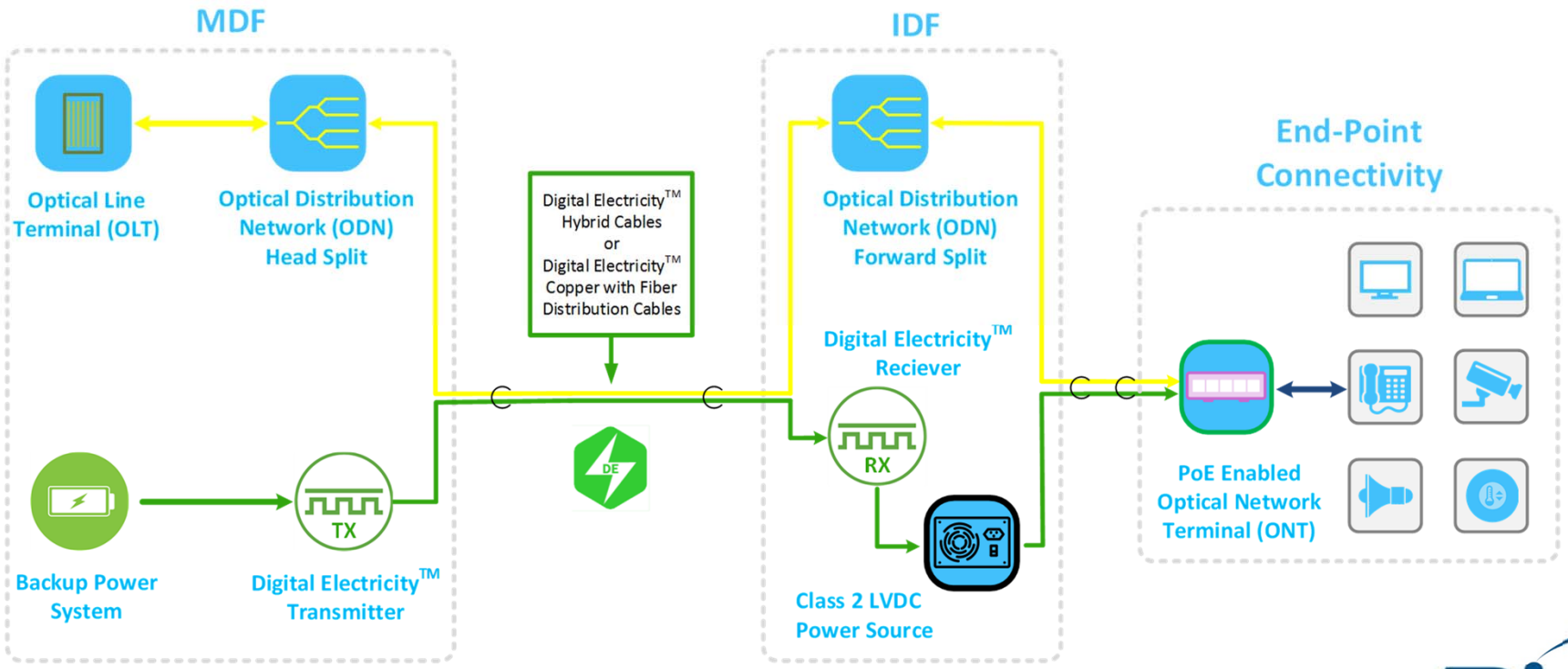
# Digital Electricity™ Example in PON

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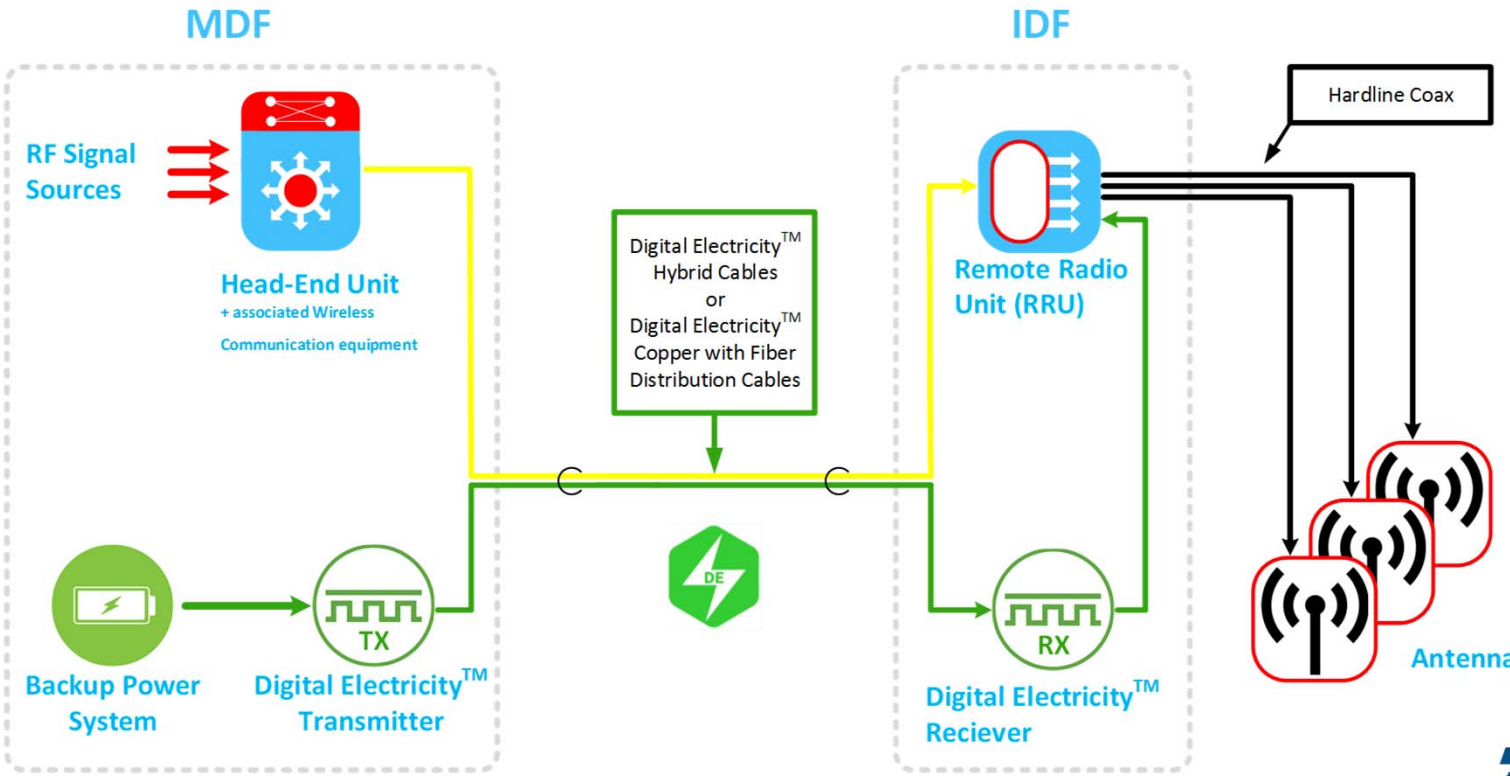
# Digital Electricity™ Example in DAS

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# Getting to Know Digital Electricity™ Cables

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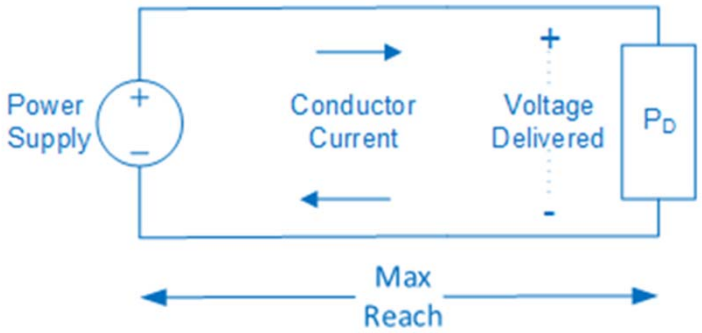
- *IEC 62368 Limited Power Source*
- *NRTL Listed*
- *World wide approvals (UL, CE, RoHS and NEC)*
- *Digital Electricity™ Opportunities and Designs are supported directly by Voltserver.*

# DC Line Power





| Two Pair Analysis | | Max Reach m (Feet) | | |
|---|---|---|---|---|
| | | 14AWG (2.08 mm²) | 18AWG (0.82 mm²) | 20AWG (0.52 mm²) |
| Power (watts) | 100 | 250 (821) | 99 (325) | 62 (204) |
| | 250 | 100 (328) | 39 (130) | 25 (82) |
| | 500 | 50 (164) | 20 (65) | 13 (41) |

Higher Power and longer reach requires larger diameter wire

# Digital Electricity™


14 AWG

18 AWG

20 AWG

| Two Pair Analysis | | Max Reach, m | | |
|---|---|---|---|---|
| | | 14AWG (2.08 mm²) | 18AWG (0.82 mm²) | 20AWG (0.52 mm²) |
| Power (watts) | 100 | ~ 2000 | ~ 2000 | ~ 1350 |
| | 1000 | ~ 500 | ~ 210 | ~ 200 |
| | 2000 | ~ 220 | ~ 90 | ~ 55 |

Higher Power and longer reach requires larger diameter wire

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# Comparison Digital Electricity™ vs. DC Line Power

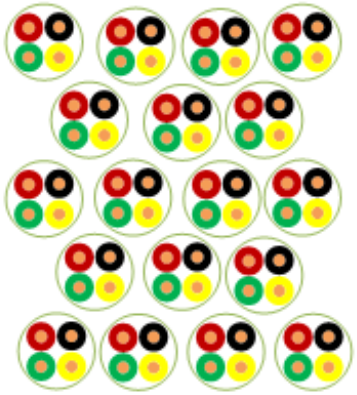
Digital Electricity™

Number of 18 AWG (CSA 0.82 $mm^2$) Conductors Needed

- 100W to ~2000m

Or

- 2000W to ~100m



Line Power

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## Digital Electricity™ Cable Offering

### Versatile Solution

- Copper only or Copper/Fiber Hybrid
- Indoor and Indoor/Outdoor Variants
  - Plenum & Riser Ratings

- Copper options
  - 12 – 18 AWG
  - 2 – 8 or more Pairs
  - Foil Shielding Optional

- Fiber Options
  - Distribution or Breakout type
  - 2 – 12 Fibers
  - OM3, OM4, or OS2


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# Hybrid Fiber-Copper Cables

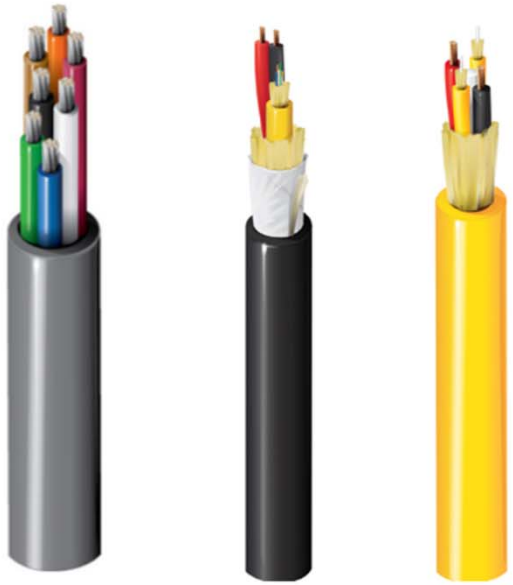
## Copper Cables

- 2-16 Stranded Conductors
- 12 to 20 AWG Copper

## Hybrid Copper Cables

1. Breakout Cables
   - 2, 900µm Fibers
   - 2 Stranded Conductors
     - *12 to 20 AWG Copper*

2. Distribution Cables
   - 2 to 6, 900µm Fibers
   - 2 Stranded Conductors
     - *12 to 20 AWG Copper*



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