



# Digital Electricity™ Remote Power Delivery System

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**BELDEN**

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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





# Potential Applications



Distributed Antenna Systems (DAS)



Passive Optical Networks (PON)



Security (Cameras)



Wireless Access Points (WAPs)



# Target Verticals



**Hospitality**



**Higher Education**



**Enterprise**



**Government**

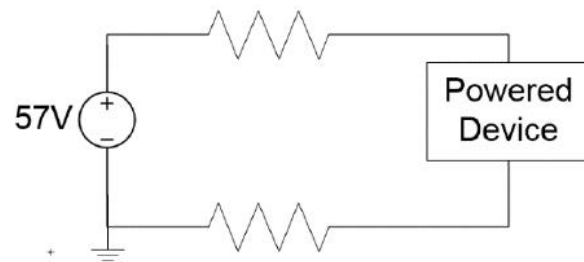


**Stadium & Venues**



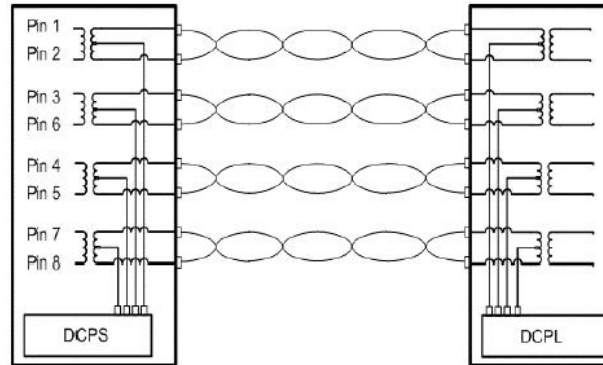
# Remote Power Delivery Systems

## DC Systems



Moderate Distance (100's meters)  
Low Power (10's of Watts)

## PoE



Short Distance (100 meters)  
Low Power (10's of Watts)  
Transmits Data

## Digital Electricity™



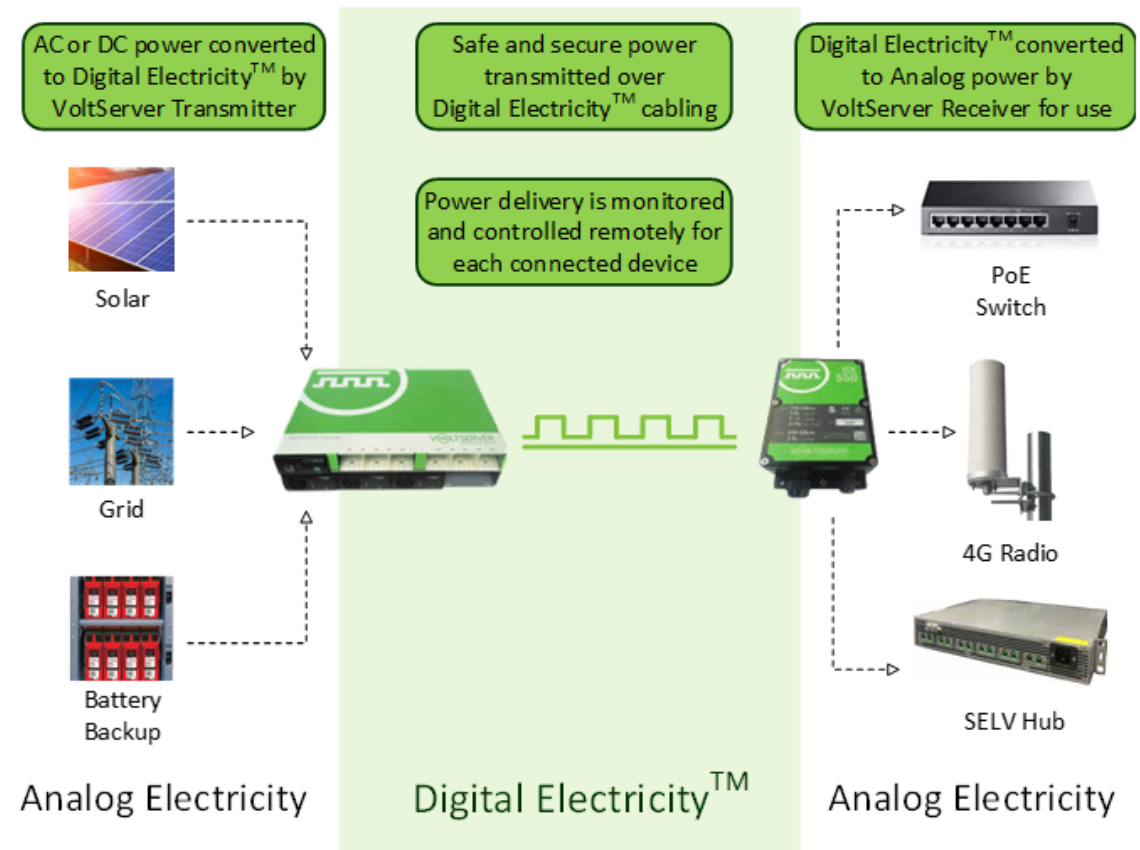
Long Distance (1000's meters)  
High Power (1000's of Watts)



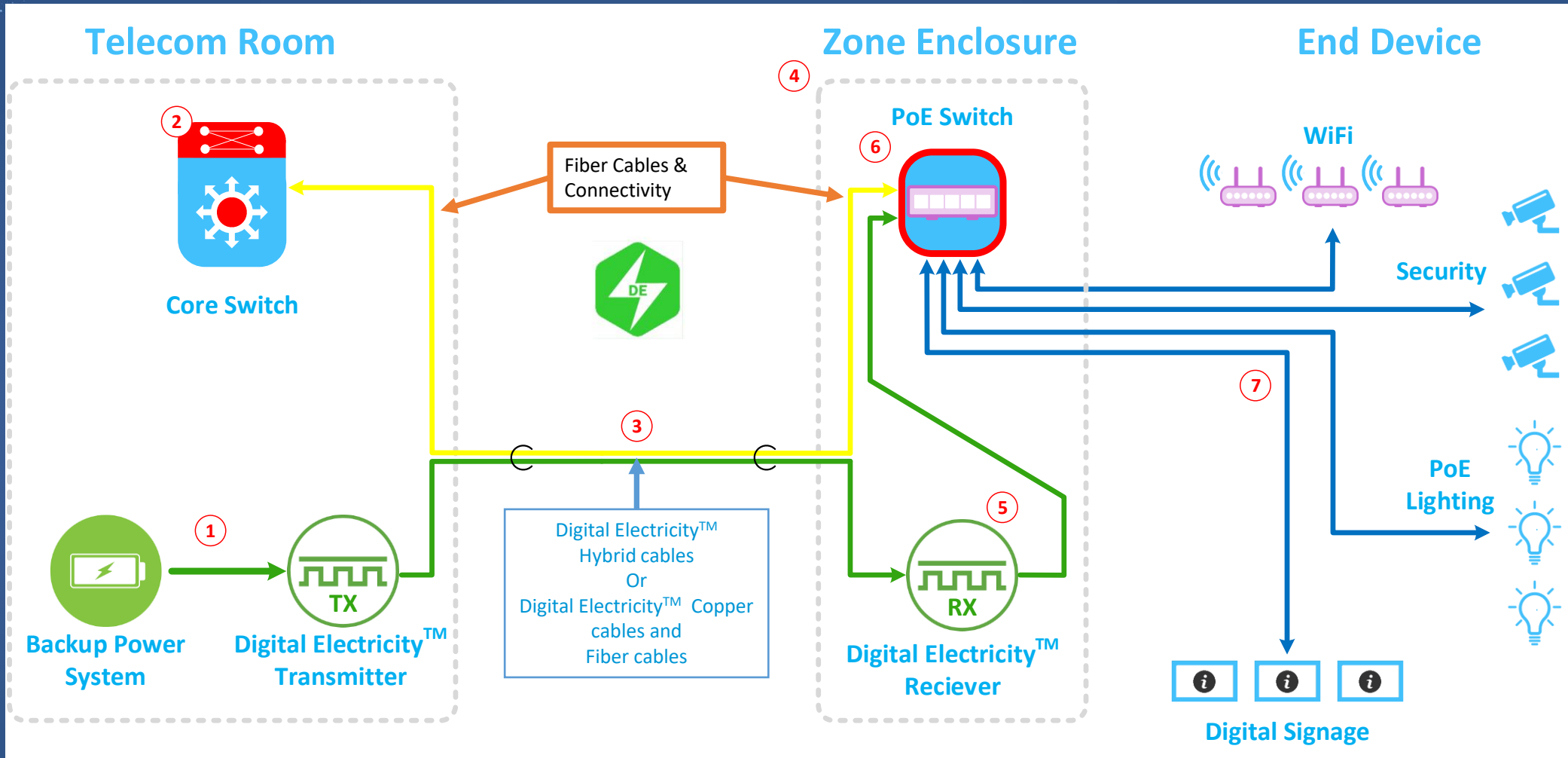
# What is Digital Electricity™?

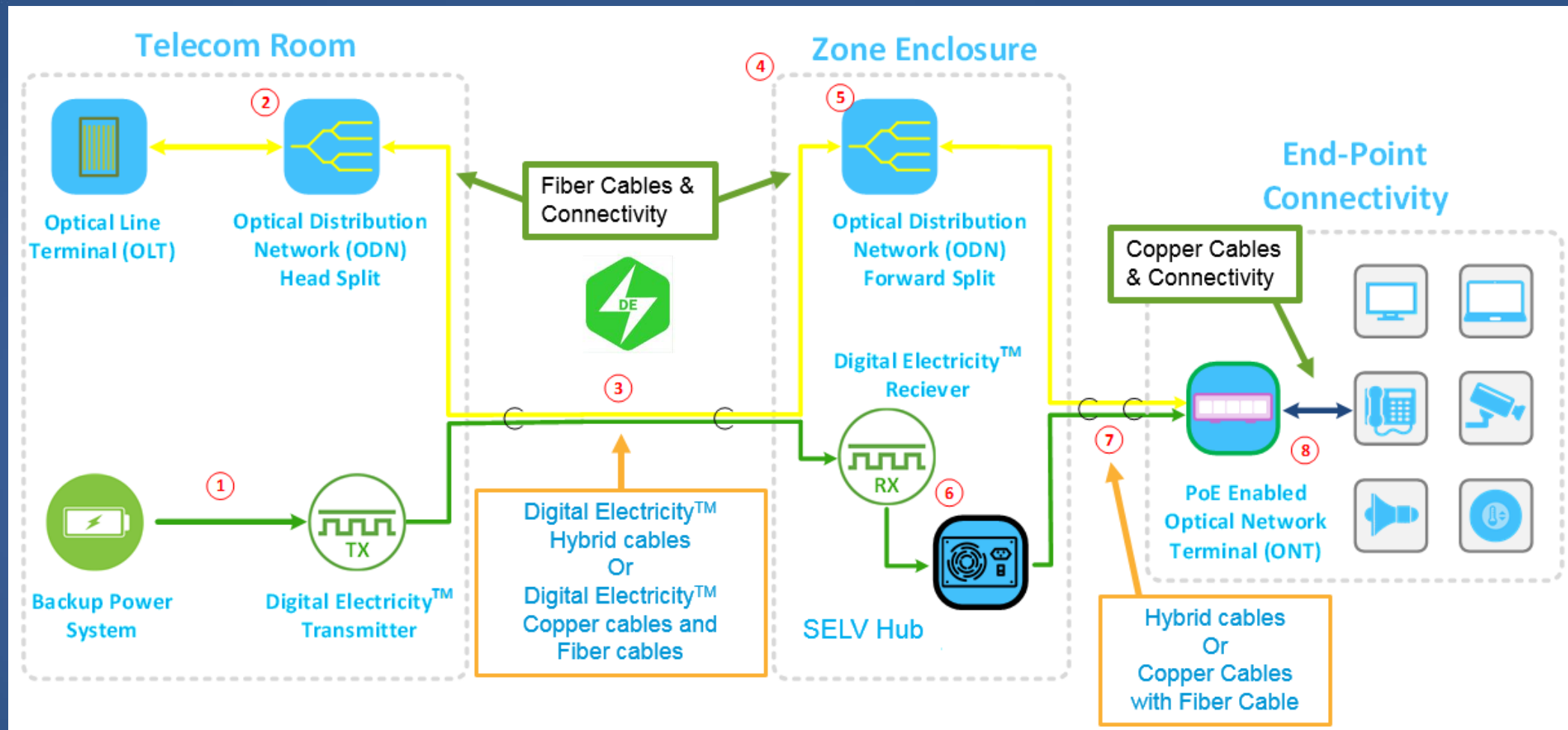
## The 5 S's

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

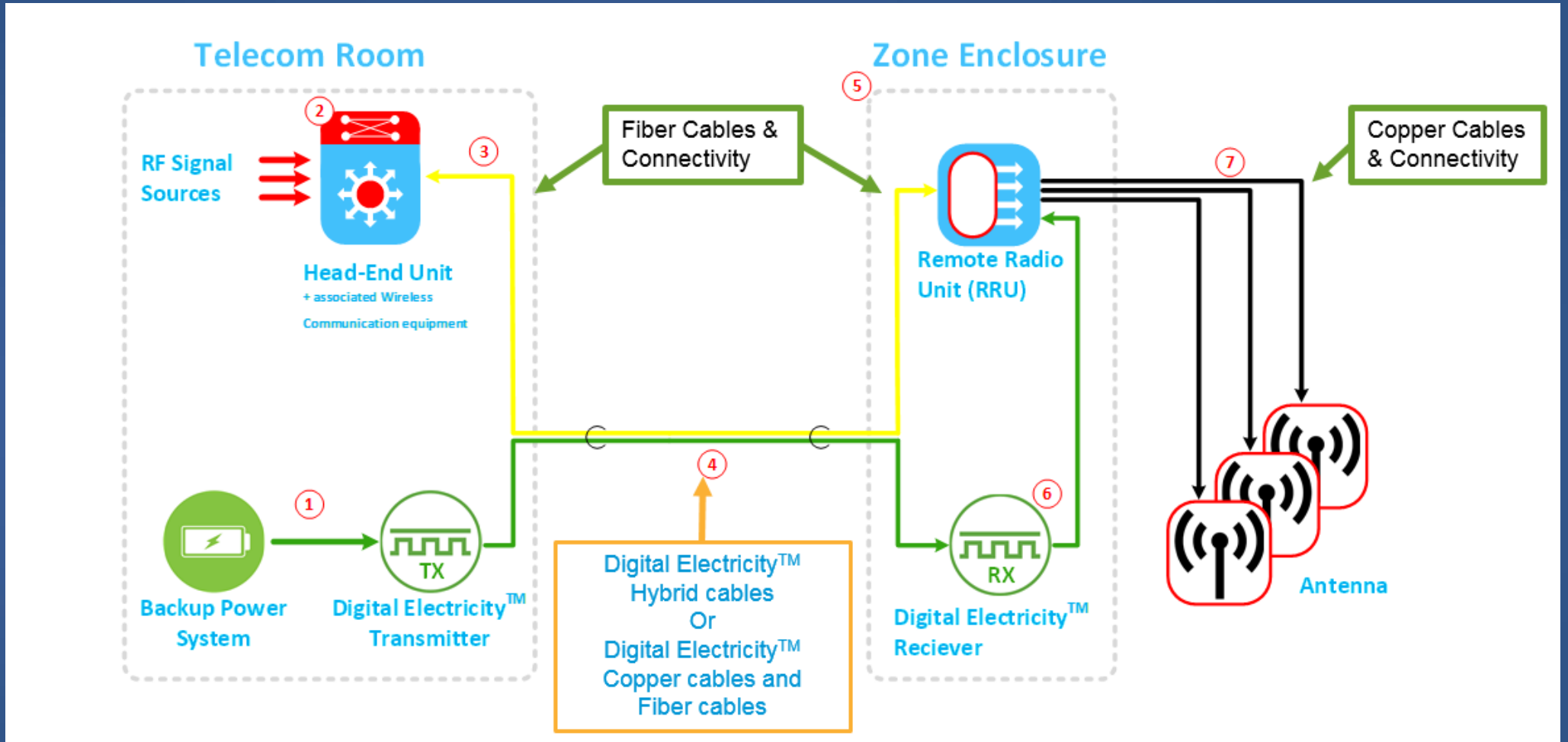

















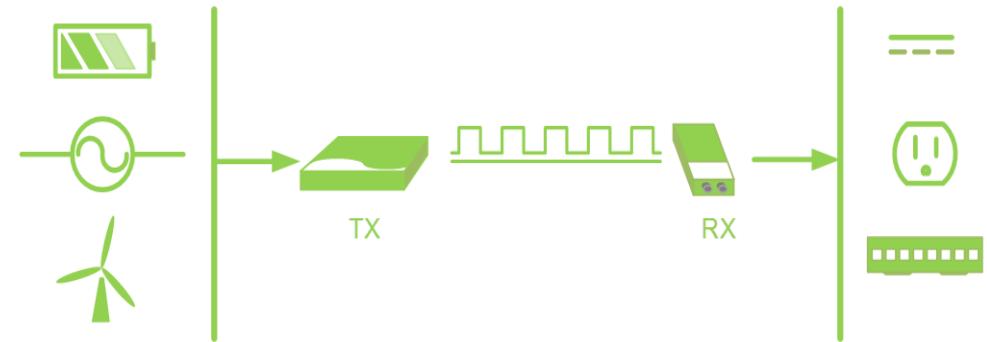
## Line Power






	Two Pair Analysis	Max Reach (Feet)		
		14AWG	18AWG	20AWG
14 AWG 	100	821	325	204
18 AWG 	250	328	130	82
20 AWG 	500	164	65	41

Higher Power and longer reach requires larger diameter wire

## Digital Electricity™



	Two Pair Analysis	Max Reach (Feet)		
		14AWG	18AWG	20AWG
14 AWG 	100	~ 6000	~ 6000	~ 4500
18 AWG 	1000	~ 1675	~ 675	~ 650
20 AWG 	2000	~ 750	~ 300	~ 180

Higher Power and longer reach requires larger diameter wire



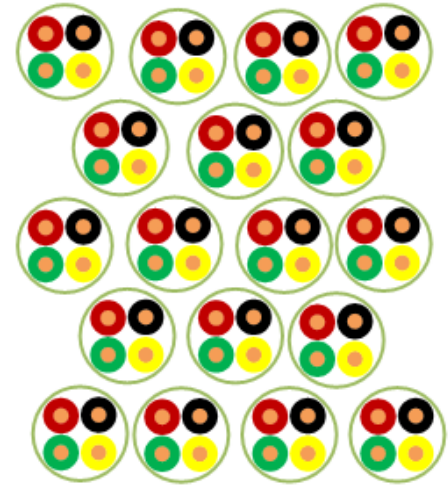
# Comparison Digital Electricity™ vs. Line Power



Digital Electricity™

**Number of 18 AWG Conductors Needed**

- 100W to ~6000ft
- Or
- 2000W to ~300ft



Line Power



## Getting to Know Digital Electricity™ Cables

## 3 Important Characteristics of DE™ Cable: Safely Carrying Digital Electricity™

- *National Electrical Code (NEC) Code-Making Panel 3 has proposed New Article 726, Class 4 (CL4) Power Systems, in the 2023 edition of the standard, which has an expected publication date of October 2022.*
- *To support NEC New Article 726, UL recently published UL 1400-2*
- *IEC 62368 Limited Power Source*
- *NRTL Listed*
- *Worldwide approvals (UL, CE, RoHS and NEC)*
  
- *Digital Electricity™ Designs are supported by Voltserver.*
  - *Belden industry's first UL-certified Class 4 cabling*

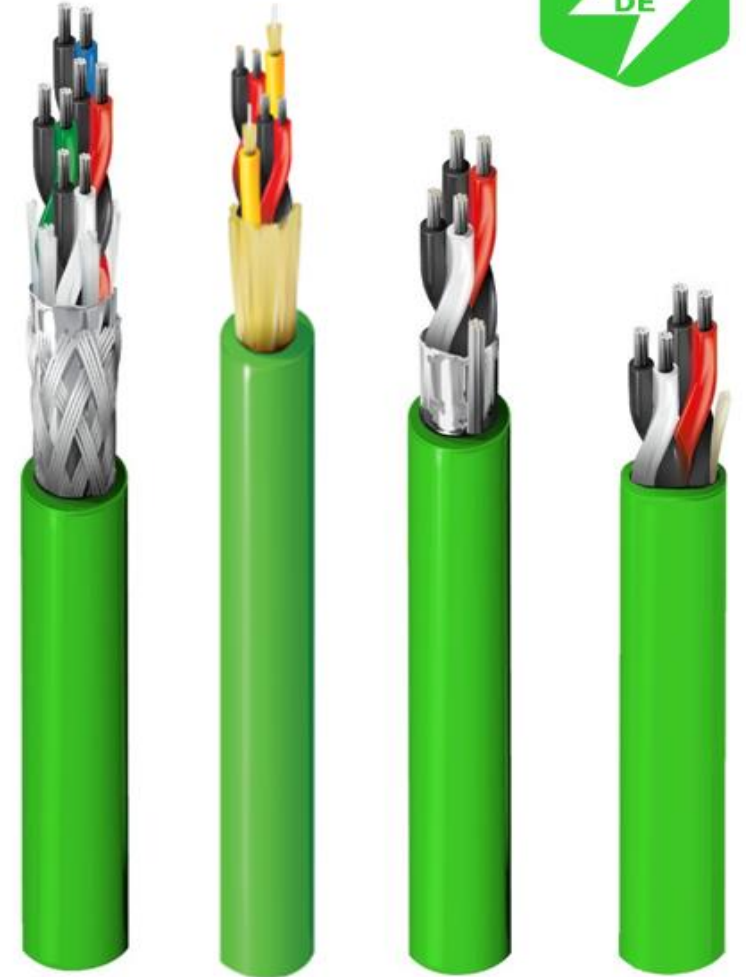


## Digital Electricity Cable Offering



### Versatile Solution

- Copper only or Copper/Fiber Hybrid
- Indoor and Indoor/Outdoor Variants
  - Plenum, Riser & LSZH Ratings
- Copper options
  - 12 – 20 AWG
  - 2 – 8 or more Pairs
  - Foil Shielding Optional
- Hybrid Fiber-Copper Options
  - Distribution or Breakout type
  - 2 – 12 Fibers
  - OM3, OM4, or OS2



Cable Compliance:  
Will 'Good  
Enough' Work  
When it  
Comes to Margin  
over Standard?

# Thanks

Digital Electricity™ The Way to Power the Future



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