

5G Wireless Infrastructure Solutions



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Protecting
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Protect Your Technology Investment at the Mobile Edge

Fifth generation (5G) digital cellular networks have arrived. As carriers begin to deploy the first phases of 5G to provide enhanced download speeds and reduced latency, buildout is underway. However, 5G is not just a speed upgrade. It is a fundamental change in network architecture, a shift to more software-defined networking, and designed for fast downstream data and higher capacity upstream data.

Because it impacts physical networks, 5G means network densification of microcell sites (small cells) and upgrades to in-building distributed antenna systems (DAS). Likewise, building owners stand to benefit by providing mounting locations to deploy outdoor small cells, which can attach to the existing network and use the building's broadband connection for backhaul, while DAS utilizes a separate network overlay with independent backhaul connections.





Physical Network Changes That Support 5G

As a result of new technologies, 5G includes new approaches in the buildout of physical networks.



More Compute at Macrocell Sites

As more carriers add switching and compute to run 5G software at cell towers, there is increased need to protect this sensitive equipment in new, outdoor settings at the base of these towers.



More Microcell Antenna Sites

More microcell antenna sites in urban areas require smaller enclosures to provide power and network connections. Municipalities typically designate size, style and placement of antennas and enclosures, while right of way with line of site for wireless fronthaul is critical.



More Indoor Small Cell Locations

More small cells located indoors and out require connection to power and network, with thermal management consideration in some cases. Protect the small cells, power and network equipment in environmentally rated enclosures.



Adapting Enterprise-Owned Network

Private businesses may also upgrade or replace DAS or cellular wireless repeaters with newer digital radio systems to improve indoor 5G signals. This may include a coordinated upgrade to network switches, cabling and to higher-wattage Power over Ethernet (PoE).

Selecting the Right Outdoor Enclosure for 5G

Environmental Protection and Thermal Management

Industrial enclosures are sealed to protect equipment from particles and liquid penetration with certified ingress protection ratings and include multiple equipment mounting options to support 5G equipment in any location.

Be sure to consider solutions that:

- Are certified to meet NEMA Type requirements according to location and application, including NEMA Type 3R, 4 and 4X for outdoor applications. Any modification needs to maintain the enclosure's ratings.
- Easily integrate with cooling units and Filter Fans that also meet NEMA Type ratings.
- Use specialized seals for cable openings in order to maintain NEMA protection ratings.



RMR® Free-Standing Enclosures

This enclosure is ideal for outdoor use at the base of a cellular tower to house compute, switching and protects against dirt, rain, sleet, snow, splash and hose down with noncorrosive liquid.



RMR® Wall-Mount Enclosure

Protect small cell access points from different vendors with a powder-coated steel enclosure that includes a 1 inch diameter hole centered on the top that accepts customer antenna to match any radio network. Passive ventilation, wall mounting, pedestal mounting options are also available.



RMR® Bollards

Extend wireless coverage into any outdoor area with a tall, heavy-duty fiberglass bollard that is large and strong enough to conceal and protect most vendors' outdoor small cell equipment.

Selecting the Right Indoor Enclosure for 5G



Today's premise networks typically include PoE switches with higher speed device connections. These switches require a larger UPS or battery backup to provide longer runtimes.

For best results:

- Consider NEMA Type 1 and 2, both ideal for conditioned spaces, or NEMA Type 12, ideal in unconditioned spaces.
- Look for UL certified enclosures that have dual-swing capability to provide easy access.
- Utilize cable openings and removable panels that allow enclosures to be placed over existing wall-mounted equipment.
- Use wall-mount cabinets with knockouts that allow placement without replacing network connections in retrofit applications.
- Use a right-angle or ceiling enclosure mount for equipment that would benefit from wall or overhead placement.



CUBE-iT® Wall-Mount Cabinet

CUBE-iT® Wall-Mount Cabinet provides a secure, easy-to-install, swing-out storage solution for information and communications technology (ICT) equipment. Attractive design, security features and range of optional fan kits make it ideal for public areas or equipment rooms with limited floor space.



RMR® Wall-Mount Right Angle

Mount multiple small cell APs and antennas in the preferred horizontal orientation on the wall using a wall-mount right angle. Ideal for locations where the ceiling is too high or otherwise inaccessible.



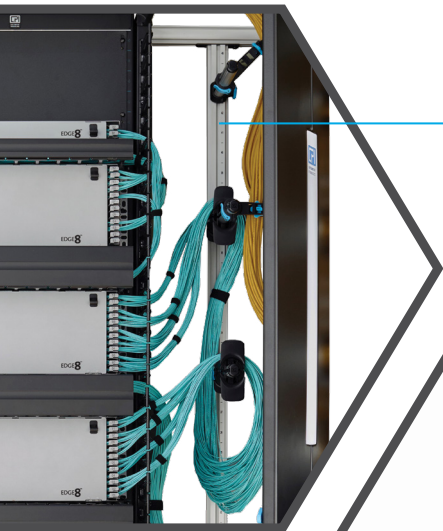
RMR® Ceiling Enclosure

Mount multiple small cell access points and antennas in low loss, durable ABS plastic, ventilated domes that protect and conceal small cell access points, while minimizing wireless signal loss. Also helps maximize wireless coverage in suspended ceiling spaces for hospitals and commercial spaces.

Selecting the Right Infrastructure Support Systems for 5G

Once you've made the proper enclosure selections, it is time to make plans to integrate the right support system to round out a total site solution for your 5G network application and integration.

- Align transitions between vertical cable managers alongside equipment racks and overhead cable trays.
- Use cable runway (ladder rack) with movable cross members to adjust the position of a cross member if it interferes with the cable transition between vertical managers and pathway.
- Place radius drops exactly where they need to be to path cable into the vertical manager.
- Use tool-less pathway dividers to maintain space between cable bundles within the pathway.



Cable Management

As new structured cabling installations for 5G support higher power Type 4 PoE applications, Motive® Cable Manager is ideal for supporting cabling in smaller bundles with more spacing to allow airflow around cables.



Power Distribution and Remote Monitoring

Enclosures that house compute, data storage or network equipment require multiple power connections for equipment. eConnect® Power Distribution Units (PDUs) are intelligent PDUs that allow customers to use remote monitoring to ensure availability, toggle power to outlets to reset equipment and integrate environmental monitoring to ensure proper conditions.

Selecting the Right Vendor

From expert staff and services to flexible, lean manufacturing processes and product availability, CPI's ability to deliver 5G infrastructure solutions quickly and reliably is built on proven key elements for delivering success, time after time.

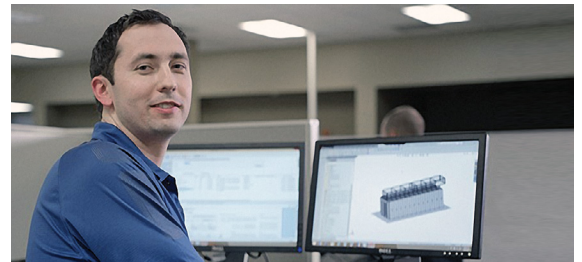
Consultation & Communication

CPI starts by understanding your goals and objectives, then devising a strategy to deliver the right solution considering all factors (physical, functional, geographical and economical). And thanks to open, constant communication throughout the process, you can rest assured that CPI will help you manage changes in project specifications and delivery schedules should they occur.



Rapid Engineering & Customization

Whether your project requires a unique design that you've developed or you'd prefer a CPI standard or customized offering, our expert engineering team excels at quickly aligning your needs with the appropriate solution, developing 3D models for review, providing rapid prototyping and executing any specific testing requirements.



Pre-integration & Value-Added Services

CPI offers the ability to pre-install power, cable management or other components to your specific work instructions. A single, configuration-specific part number is assigned for easy ordering and CPI also offers kitting, custom labeling, shock pallets or crates to make sure your product arrives as you need it, ready for the fastest possible installation.



Commitment to Quality & the Environment

CPI holds ISO 9001 Certificates at all of its employee-owned manufacturing facilities to ensure high quality and craftsmanship. Each facility has the flexibility and speed to implement corrective actions and part replacement to keep your critical project on track. Additionally, CPI is committed to minimizing our impact on the environment through our designs, manufacturing processes, RoHS compliance and energy efficient solutions.



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Manufacturing Capability and Global Availability

Headquartered in the United States, CPI operates from multiple sites worldwide, including offices in Mexico, Canada, China, the Middle East and the United Kingdom. CPI's manufacturing facilities are located in the United States, Asia and Europe.

Standard products are readily available through a global network of industry-leading distributors. With stock availability, and CPI's consistently short factory lead times, you can be assured that CPI solutions will be accessible to meet your project scheduling needs.

How to Buy

CPI sales are conducted in partnership with a network of electrical distributors that specialize in data communications and industrial sales representatives that specialize in control automation, electrification and instrumentation. Visit chatsworth.com/industrial to find quick links for your buying preference.

About CPI

CPI, a 100% employee-owned company, was founded in June 1991, when 90 workers joined together and purchased the Dracon Division of Harris Corporation using an Employee Stock Ownership Plan (ESOP). Employee ownership is central to the success of CPI. Employee owners are committed to a philosophy of quality through teamwork, caring and commitment, which are extended to customers through our solutions and services.



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