



- CCSI indoor DAS Design & Optimization services include site evaluation, pre-design RF testing, detailed in-building design with RF propagation analysis, a complete Bill of Materials (BOM) and estimated labor cost.
- Prior to creating the design CCSI's technicians will conduct a site survey along with property management personnel to develop an approach for equipment locations that will meet all of the property owners requirements and all building codes.
- During the site survey we will conduct a detailed RF propagation study which will also measure current wireless coverage levels in the facility. The data from this survey will be used to create a custom design for the facility and provide benchmark data for optimization.
- Based on our analysis of site we will prepare a detailed in-building design. In addition to a complete BOM and labor cost estimate the design will detail projected RF coverage levels in the facility.
- CCSI can deliver a design to support a single wireless service provider or a neutral host design that will support multiple wireless service providers, based on the customers requirements.
- This service can be combined with our DAS deployment services to provide a complete end-to-end turnkey service.
- Once the equipment is installed and commissioned CCSI technicians will visit the site and conduct a detailed RF propagation study which will also measure current wireless coverage levels in the facility. This data will be compared against the data from the first walk to ensure that the system is meeting projected coverage levels.
- CCSI technicians will work with installation team to tune the system and optimize the performance.
- CCSI's skilled technicians are certified for all of the major manufacturers of fiber DAS equipment and with hundreds of site designs and installations already performed they have the experience necessary to design, install, commission and optimize the system efficiently and correctly.
- CCSI technical resources provide expertise throughout the project from RF engineering through installation, commissioning and optimization.
- Industry leading project management support provides reporting on key milestones and project completion.
- Ability to quickly deploy multiple crews of experienced DAS technicians and engineers provides quick ramp up on our customer's critical projects.
- Best in class closeout documentation includes all required test results and robust photo documentation of installed equipment as well data upload to the customers selected repository.
- At CCSI safety, quality and on-time delivery are our top priorities and all of our processes procedures are designed with these metrics in mind allowing us to deploy quickly, accurately and safely.
- With multiple locations throughout North America CCSI has the ability to support the wireless carrier in large national or regional roll outs.



## SPECIFICATIONS

### DAS & In Building Services

### DAS Design & Optimization

#### Overview

As more people rely on their mobile devices to manage their daily activities and to access their business critical services, the need for these devices to work everywhere has become paramount. CCI Services (CCSI) is a key partner with the wireless carriers who are investing in new capacity in densely populated areas. In addition, often the worst coverage for these devices can be in the very offices, factories and other facilities where people spend most of their work day. CCSI is helping the carriers to meet this coverage demand by designing, installing and optimizing Indoor Distributed Antenna Systems (IDAS).

CCI Services (CCSI) delivers complete DAS Design from design to commissioning to final test, including optional DAS installation services as required. Our team of highly trained technicians will bring their DAS expertise to your project delivering a highly reliable in-building system with our superior expertise.

CCSI is capable of providing DAS design services throughout North America. CCSI continues to provide both national and regional services supporting several of the major carriers for their DAS and cell site rollouts. We've become a trusted partner and CCSI can always be expected to deliver high quality services, safely and on time.

#### Deliverables

- Perform pre-installation site survey with property management personnel and collect benchmark RF data.
- Provide a detailed in-building design with projected coverage levels, complete BOM and labor cost estimates.
- Optionally perform DAS installations services.
- Perform post-installation RF study and work with installation team to optimize system to meet design criteria.
- Dedicated project and construction managers provide timely progress reporting and project tracking.
- Comprehensive closeout documentation includes all test results and complete photo documentation of installed equipment and includes digital upload services.
- As needed provide RF engineering and troubleshooting resources.