



DAS

WINNCOM HAS SOLUTIONS FOR DISTRIBUTED ANTENNA SYSTEMS



SOLUTIONS FOR (DAS) DISTRIBUTED ANTENNA SYSTEMS Enhancing Your In-Building RF Coverage Distribution

A wide range of obstacles stand between you and your goal of enhancing the cellular & data coverage within the confines of your establishment. Aspects such as wall thickness & density, available cable run space, broadband coverage concentration. Providing coverage to underground areas, staircases, remote parking lots and parking garages is also something to factor in when designing your DAS System.

Multi-story buildings present different challenges than single level structures to include whether or not to chose COAX cable instead of fiber and how and where to divi out the remote units to optimize your investment all while staying compliant to all of your local building codes.

Engineering services are typically utilized to help map out the indoor space in question to determine what equipment will be needed and to design the schematic of the cable runs and the location of splitters, Access Points and other key equipment.



WINNCOM'S DAS DESIGN LEVELS

Level	Accuracy	Information Requirements	Cost
Level 1	Low	Low	Free
Level 2	Moderate	Medium	\$250
Level 3	High	Detailed	\$450-\$1200



Winncom's Level 3 iBWave Certified Engineers are capable of designing DAS & Wi-Fi projects of any complexity

DESIGN LEVEL 1

INFORMATION REQUIRED

- Required carriers
- Building address (optional)
- Building blueprints (optional)
- Total square footage and percentage of areas types in the building (open area/cubical/small offices/small rooms)
- RSRP/RSSI readings at potential donor antenna location (optional)
- Signal source type (Small cell/Donor antenna installed outside/Donor antenna installed inside)

OUTCOMES

- General idea on possible equipment layout (optional)
- Rough order of magnitude BOM containing:
 - Nextivity parts
 - Major passives

ACCURACY: LOW

Estimate is based on required coverage area, type of environment

TOOLS USED

- Internal ROM tool
- Power Point

FREE

DESIGN LEVEL 3

INFORMATION REQUIRED

- Required carriers
- Building address
- Building blueprint with:
 - Scale
 - Indication of required coverage areas
 - Potential donor antenna/small cell location
 - Potential Network Unit installation location/s
- RSRP/RSSI readings at donor antenna location
- Preferred paths of cable runs for coax (donor antenna-to-NU), and CAT-5 (NU to CUs)
- Floor height
- Walls materials and thickness
- Signal source type (Small cell/Donor antenna installed outside /Donor antenna installed inside)
- RF and CAT5/6 cable requirements (Plenum, fire retardant or regular)

OUTCOMES

- Heatmaps
- Cable routing report
- System design
- Preliminary bill of materials with all major components needed

ACCURACY: HIGH

Estimate is based on full iBwave system design with propagation studies

TOOLS USED

- iBwave Design (building design/system design/signal propagation /cable routing)
- PowerPoint

\$450.00 - \$1,200.00

half the cost is credited back in equipment quote

DESIGN LEVEL 2

INFORMATION REQUIRED

- Required carriers
- Building address
- Building blueprint with:
 - Scale
 - Indication of required coverage areas
 - Potential donor antenna/small cell location
 - Potential Network Units installation location/s
 - RSRP/RSSI readings at potential donor antenna location (optional)
- Signal source type (Small cell/Donor antenna installed outside/Donor antenna installed inside)
- RF and CAT5/6 cable requirements (Plenum, fire retardant or regular)

OUTCOMES

- General idea on possible equipment layout w antenna contours
- Rough order of magnitude BOM containing:
 - Nextivity parts
 - Major passives

ACCURACY: MODERATE

Estimate is based on scaled building blueprint, type of environment, antenna contours, proposed components layout is taken into consideration for passives estimation

TOOLS USED

- iBwave Design (quick estimation, no heatmaps)
- PowerPoint

\$250.00

SITE SURVEYS

INFORMATION REQUIRED

- Required Carriers
- Address of the location
- Building blueprint with:
 - Scale
 - Indication of required coverage areas
- Contact person who will assist during site walk
- Scheduled date/time for the site walk

OUTCOMES

Site survey report with detailed building information, signal measurements, current coverage heatmaps and installation considerations

TOOLS USED

- iBwave Mobile & iBwave Enterprise
- Seehawk Engage
- PCTel IBFlex
- Smartphones & Tablets
- Spectrum Analyzers

\$1,200.00

per day + travel expenses



**Call 888.WINNCOM
or visit www.winncom.com**