

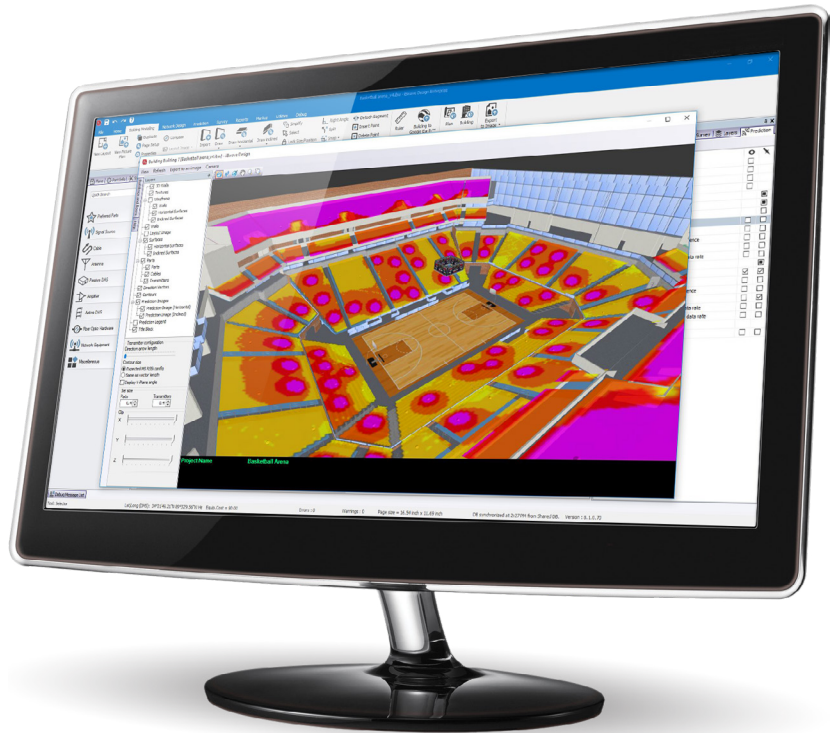


iBwave

Private Networks (Wi-Fi)

THE MOST RELIABLE WAY TO DESIGN Wi-Fi NETWORKS YOU CAN DEPEND ON

With cloud-connectivity, seamless integration with **iBwave Wi-Fi® Mobile**, active and passive surveys, advanced 3D modeling, smart antenna contouring, a full database of all network parts and powerful prediction capabilities for coverage, throughput and capacity, **iBwave Private Networks (Wi-Fi)** is the most productive and collaborative way to plan, design and deliver high-performance Wi-Fi networks.



KEY BENEFITS



Accelerate
productivity



Collaborate more
easily via the cloud



Design detailed
networks in advanced
3D with prediction



Increase design
quality with powerful
prediction & capacity
planning



Quickly generate key
project reports



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Private Networks (Wi-Fi)

Accelerate productivity

iBwave Private Networks (Wi-Fi) eliminates many of the design process inefficiencies that exist today so you can recognize revenues sooner, grow your project pipeline faster and your customer saves time and money.

➤ Simplify Wi-Fi Design with our 'Basic' and 'Advanced' Modes.

The 'Basic' mode offers the most common features for designing Wi-Fi networks, so you can work faster and simpler. You still have the option to switch between the modes and choose the one that suits you the best.

➤ Active Surveys with an integrated server.

Assess a network's performance without using iPerf or another third-party tool. Simply launch the 'Active Survey' server from your desktop and then survey with either the mobile app or PC version.

➤ A Complete Bill of Materials.

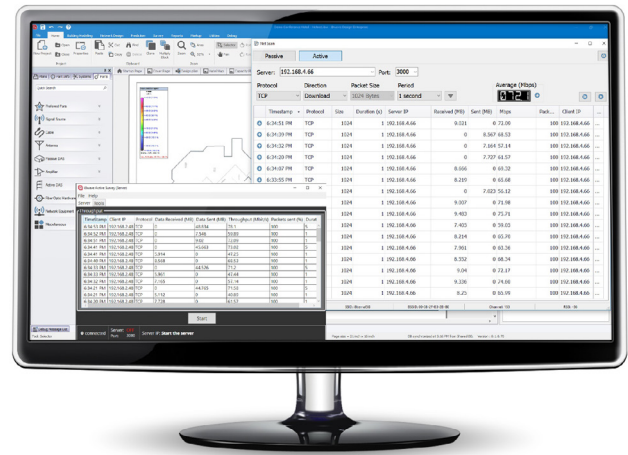
With the ability to design your entire network with APs, cabling and network equipment, you can quickly generate an accurate Bill of Materials for your customer.

➤ Auto-AP Placement and Auto-Channel Assignment.

Use the optional AP placement in either the mobile app or PC version to quickly start your Wi-Fi network design. Freely move, delete or add APs around the floor plan to get the design just right. Quickly assign each AP in your design to a channel with the auto-channel assignment functionality - then update channels if/where needed.

➤ Smart Antenna Contouring.

View live signal strength predictions as you design so you do not have to run full prediction results multiple times.



➤ Automatic Cable Routing Alignment.

Model cable trays and risers in iBwave Wi-Fi Mobile or iBwave Private Networks (Wi-Fi) and then save hours of time with the automatic cable alignment functionality that automatically snaps them into place.

➤ Cloud-connectivity to easily share files.

Easily share files with your team and with your customers by using the free 10GB of storage in the iBwave cloud to save and access files from anywhere, anytime.

➤ Multi-adapter Passive Survey.

Use of several Wi-Fi adapters to collect survey data. Each of them can be configured to scan a certain band, specific channels or groups of channels. Decrease time to collect data when tasks are distributed among the adapters.



Collaborate more easily via the cloud

iBwave Private Networks (Wi-Fi) provides you with a cloud-connected solution that makes it easy for teams and customers to share files and work together.

➤ Cloud connectivity.

Save your projects to the cloud so you and your team can access your projects from anywhere, anytime.

➤ Seamless connectivity with iBwave Wi-Fi® Mobile.

Work on your designs from either your tablet or PC knowing your files will always be accessible from both.

➤ Share projects with your customers with iBwave Viewer.

Send your design to your customers for review via a secure link so they can open it up in iBwave Viewer and provide you with feedback.



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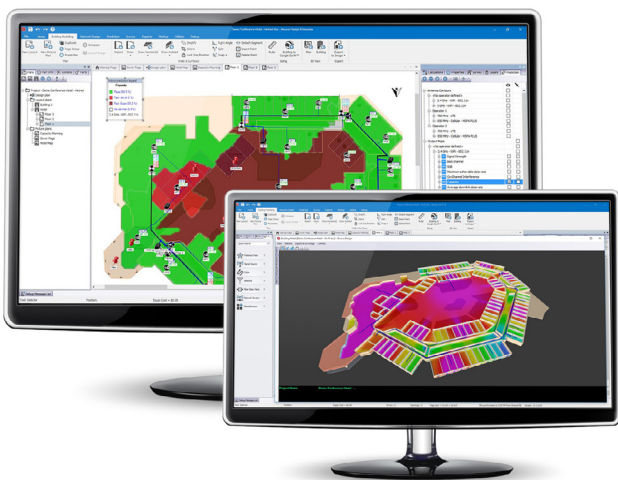
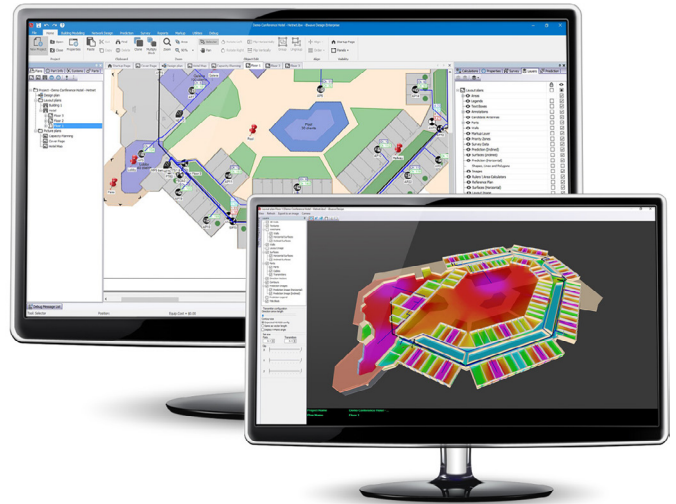
Design detailed networks in advanced 3D with prediction

With the ability to model your venues in 3D and a large database of all Wi-Fi network components, you can impress your customer with a 3D visual of what the network will look like in their venue, and how well it will perform.

- **Components Database of accurately modeled vendor network components.** Drop accurately-modeled access points and network equipment (cable trays, risers, antennas, cables, routers, controllers, switches, miscellaneous). Call us to add parts as you need them or add them yourself.
- **Advanced 3D Modeling.** Import floor plans in AutoCAD, PDF or any image file to model your buildings in a CAD-powered modeling engine. Automatically draw walls, floors, horizontal and inclined surfaces, as well as curved walls for stadiums and diagonal drawing for square sections at an angle. Assign materials from an extensive database of materials - or by adding your own material. View the model in the 3D viewer and watch it come to life.

You can also accelerate building modeling by utilizing our Stencil Library, a repository of user-defined templates and stencils for frequently used 3D objects, materials, markups, and images.

- **View prediction and design details in 3D.** View prediction and the placement of your components from floor-to-floor throughout the venue. See how they connect and show your customer exactly what the network will look like once it is implemented.
- **Adjust 3D view layers.** In the 3D modeler, you can adjust all planes of your design (x,y,z) to view your building as a whole or floor by floor. You can also adjust visible layers to choose what you are looking at: cabling, APs, network equipment, prediction. Zoom in, walk through and pan your design and export an image to include in reports or send to your customer.



Increase design quality with powerful prediction & capacity planning

With the iBwave Private Networks advanced propagation and capacity analysis engine you drastically reduce the risk of network re-design costs post-installation by accurately simulating the performance of your network before it's deployed.

- **Calibrate Prediction Results with Survey Measurements.** Calibrate prediction with your survey measurements to increase the accuracy of the network's predicted performance. Calibrate all coefficients or just material coefficients, and then save the model to apply to similar environments in future projects.
- **Smart Antenna Contouring.** View live prediction of an access point's signal strength live on the screen while you are doing the design.
- **Fast Ray Tracing Prediction Engine.** Run fast ray tracing prediction to assess how your network and assigned materials will perform once installed. Consider walls, horizontal surfaces and inclined surfaces - either imported and modeled in 3D or drawn manually with built-in modeling tools.
- **VLPE Prediction Engine.** Save the time you usually spend on modeling venues by using our patented propagation engine to use density zones instead of walls to capture and model the environment characteristics of a venue. Run this prediction both in the mobile app or PC version.
- **Capacity Analysis Engine.** Simulate the traffic usage on your network with the most advanced capacity analysis tool on the market. Define capacity by technology, users, applications and capacity hotspot zones.
- **Output Maps.** Assess a network's coverage performance with the RSSI, CCI, Best AP, Best Channel, Overlap Zone and Maximum achievable data rate maps. Then assess the network's capacity performance with the Capacity and Average downlink data rate maps to show the user's network experience.



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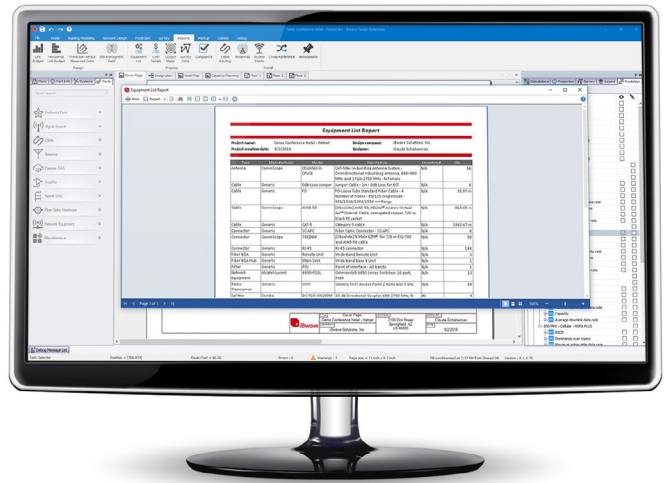
Private Networks (Wi-Fi)

Quickly generate key project reports

Quickly generate key project reports to distribute to your internal and external stakeholders.

- › Equipment List & Cost Details
- › Access Points, Cable Routing & Cross-reference
- › Annotations, Survey Data, Output Maps & Prediction vs. Measured Data, Throughput
- › Electromagnetic Field (EMF)
- › Compliance

iBwave Viewer. This free software lets your customers open design files (read-only), view the design and prediction in 3D and run their own project reports anytime they want.



FEATURE SET

iBwave Private Networks (Wi-Fi) software features

Wireless Technologies

- › Wi-Fi (802.11 a/b/g/n/ac/ax)
- › Free Active survey server
- › Simultaneous Active and Passive walk test
- › Supports multi-adapter Passive survey

Network Design

- › Design Plan for indoor Wi-Fi system design (building and/or floors)
- › Centralized database with vendor-modeled network parts: APs, cables, switches, routers, controllers, racks, cabinets and more
- › Smart Antenna Contouring for live signal strength predictions during AP placement
- › Cable tray modeling
- › Cable routing
- › Advanced 3D prediction visualizations
- › Multi-Radio AP support
- › Network validation and error checking
- › Zigbee support
- › Mist integration
- › Advanced and Basic Design Modes

Automation

- › Automatic Inclined Surfaces
- › Automatic access point placement
- › Automatic channel assignment
- › Automatic Design Plan organizer
- › Automatic cable length measurements

Building Modeling

- › Create multiple buildings and multi-layered floor plans
- › Use Stencils for frequently used objects and surfaces
- › Surface modeling with the ability to stop walls at an incline
- › Import floor plans and walls from .dwg, .dxf, .jpeg, .bmp, .tiff, .gif or .pdf files
- › Draw walls and surfaces (including diagonally and inclined), assign materials or create your own.
- › Curved wall design for stadiums
- › Advanced 3D Viewer to display buildings and floors
- › Show building location in Google Maps or Bing Maps
- › Export building to Google Earth

Propagation

- › Simultaneous multi-band / technology propagation and capacity 3D prediction analysis
- › Variable Path Loss Exponent, COST 231 Multi-Wall or Fast Ray Tracing propagation models
- › Probe to display multi-system prediction results
- › Compliance results and report based on user defined criteria
- › Prediction model and material calibration from survey data

Output Maps

- › Signal strength (RSSI), Maximum Achievable Data Rate (MADR) and Signal to Noise Ratio

(SNR)

- › Best AP and Best Channel
- › Co-Channel Interference (CCI), AP count and Overlap zone
- › Capacity and Average Downlink Data Rate

Project Documentation

- › Use drawing tools to add lines, shapes, text and images
- › Create picture plans and photo mock-ups
- › Create annotations (text, audio, picture, video)
- › Create project revisions
- › Protect project file with password
- › Export project to .dxf format and all annotations to zip file
- › Print project documentation

Reports

- › Annotations, Output maps, RF Survey reports
- › Equipment list and Cost Details report
- › Access Points, Cable Routing and Cross-Reference reports
- › Prediction vs. Measured report
- › Compliance Report
- › Free report viewer for project stakeholders

Tools

- › Net scan
- › Frequency calculator
- › Power converter
- › Intermodulation calculator

