

WIRELESS TECHNOLOGIES		
Wi-Fi (802.11 a/b/g/n/ac/ax)	✓	
5G: NR (Sub-6GHz and mmWave)	✓ with Propagation and Optimization modules	
4G: LTE / LTE-A / LTE-LAA / CBRS / WiMAX (802.16) / WiBro	✓	✓ Public Safety bands only
3G: HSPA / HSPA+ / WCDMA / 1xEV-DO / TD-SCDMA	✓	
2G: GSM / CDMA / EDGE / GPRS / iDEN / TDMA / & more	✓	
Public Safety Broadband 4.9 GHz (802.11y)	✓	✓
Public Safety P25, Tetra	✓	✓
DVB-H / MediaFLO / RFID / ZigBee (802.15.4) / WMTS / LoRa / UWB / GPS	✓	
SYSTEM DESIGN		
Design Plan for indoor RF system design	✓	✓
Centralized database with over 29,000 components from over 300 vendors	✓	✓
Support base stations, off-air repeaters and small cells	✓	✓ R14 FirstNet
MIMO 2X2, 3X3, 4X4	✓	✓ no 3X3 MIMO
Coaxial, radiating and CAT5 cable signal distribution	✓	✓
Multi-strand fiber-optic cables and components support for fiber modeling	✓	✓
Support Wi-Fi access points including multi-radio APs (high density)	✓	
Antenna contours	✓	✓
Smart antenna contours considering building architecture and antenna pattern		✓
Network validation and error checking	✓	✓
AUTOMATION		
Automatic design plan organizer	✓	✓
Automatic access point placement		
Automatic channel assignment		
Power sharing automation for neutral host system designs	✓	
Cable route and automatic cable alignment	✓	✓
Automatic cable and splitter selection for passive DAS	✓	✓
Optimal antenna placement		
Reset part ID	✓	✓
CALCULATIONS		
Automatic cable length measurements	✓	✓
RF Downlink link budget calculations	✓	✓
RF Uplink link budget calculations	✓	✓
Fiber link budget	✓	✓
Passive Intermodulation (PIM) calculations and analysis based on component PIM ratings		✓
BUILDING MODELING		
Create multiple buildings	✓	✓
Multi-layered floor plans with layout plans, walls, system equipment, cables, and more	✓	✓
Import floor plans from .dwg, .dxf, .jpeg, .bmp, .tiff, .gif or .pdf files	✓	✓
Draw walls (linear and curved) and surfaces	✓	✓
Automatic drawing of inclined surfaces	✓	✓
Assign material from material database		✓
Import walls from raster CAD files, PDF or images		✓
3D Viewer to display buildings and floors	✓	✓
Zone layer per wireless service	✓	✓
Export building to Google Earth and building in Google Earth or Bing	✓	✓
PROPAGATION		
Body Loss Modeling		✓
LTE Handoff Matrix		
Simultaneous multi-band / technology propagation 3D prediction analysis		✓
Variable Path Loss Exponent propagation model using environment density zones		✓
COST 231 Multi Wall model (Direct Ray) propagation model		✓
Fast Ray Tracing propagation model		✓
Probe to display multi-system prediction results		✓
Compliance results based on user defined criteria		✓
Customizable output map legends		✓
Prediction model and material calibration from survey data		✓
Import outdoor propagation maps from leading outdoor planning tools		✓
Consider outdoor signal for interference and propagation maps		✓
2D and 3D antenna pattern support		✓
Multiple Compliance Zone definition		✓
Donor Antenna Isolation Validation		✓
OUTPUT MAPS		
5G NR SS-RSRP, SS-SINR, PDSCH-SINR, PDSCH-RP, SS-RSRQ, MADR, Best Server		
Signal strength, Best Server		✓
HSPA RSCP, LTE RSRP		✓ LTE-RSRP
Field strength, Handoff, Service Count maps, Nature of the path		
Wi-Fi Best AP, Best Channel, Overlap zone, AP Count		
SINR, Maximum Achievable Data Rate, Dominance over Macro Maps		✓ no MADR
CDMA and WCDMA Active ser		
LTE RSRQ, LTE RSRP, LTE Best Server in R14, Overlapping Zones maps, LTE-A Max Achievable Data Rate		✓ LTE-RSRQ
Wi-Fi CCI, SNR		
Uplink Mobile Power		✓
Indoor propagation map interpolated from:		✓
Outdoor planning tools		✓
Walk tests or empirical measurements		✓
Estimated surrounding signal strength		✓
Redundant DAS failure point propagation simulations		✓
Hetnet Capacity Analysis with hotspot zones		
Average Downlink Data Rate		
Optimal Antenna Placement map		
DATA COLLECTION		
Manually create trace routes and enter survey data on floor plans		✓
Import trace routes and survey measurements from 3rd party collection tools		✓
Export floor plans and transmitter information to 3rd party collection tools using the IBWC file format		✓
Wi-Fi active and passive survey		
PROJECT DOCUMENTATION		
Drawing tools for lines, shapes, text and images	✓	✓
Create picture plans and photo mock-ups	✓	✓
Create annotations (text, voice, picture, video)	✓	✓
Create project revisions	✓	✓
Project file password protection	✓	✓
Export project to .dxf format	✓	✓
REPORTING		
Annotations, Output maps, RF Survey reports	✓	✓
Equipment list report	✓	✓
Cost details report	✓	✓
Link budget report and Horizontal link budget reports	✓	✓
Antennas report	✓	✓
Access Points and Small Cells report	✓	✓
Cable routing and Cross-reference reports	✓	✓
Electromagnetic field (EMF) report	✓	✓
Prediction vs. Measured data report		✓
Compliance report		✓
Include PIM results in the Compliance Report		✓
Export reports in various format (.rpt, .pdf, .xls, .doc, .rtf, .xml)	✓	✓
Export project and floor plan in TAB file format	✓	✓
COMPONENT DATABASE		
Database editor to add, edit or delete components	✓	✓
Share component database between multiple users	✓	✓
Customized pricing and part numbers	✓	✓
Sub-component support	✓	✓
List of approved parts per customer	✓	✓
List of equivalent parts	✓	✓
Extensive library of materials (60+) including electrical and mechanical properties		✓
TOOLS		
Frequency calculator	✓	✓
Power converter	✓	✓
Intermodulation calculator	✓	✓
Wi-Fi Net scan	✓	
Mist integration	✓	