

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	✓			
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	✓			
MIMO 2X2, 3X3, 4X4	✓			
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		✓		
Field strength, Handoff, Service Count maps, Nature of the path		✓		
Wi-Fi Best AP, Best Channel, Overlap zone, AP Count		✓		
SNIR, Maximum Achievable Data Rate, Dominance over Macro Maps			✓	
CDMA and WCDMA Active ser			✓	
LTE RSRQ, LTE RSRP, LTE Best Server in R14, Overlapping Zones maps, LTE-A Max Achievable Data Rate			✓	
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	✓			