



# **dBm Planner<sup>®</sup> 4.0**

Software suite

360 Net Tools & Backhaul Planner modules

The highly competitive environment of the engineering services requires companies, operators and organizations to use efficient tools for accurately performing projects at lower cost. Developed by Arium Stream, dBm Planner® is an innovative software suite addressing the needs of the wireless industry for mobile backhaul network design, and the needs of any organization or company requiring technical data (i.e. clutter heights, terrain elevation, Fiber routes mapping etc.).

**Arium Stream products offering is a unique solution combining Microwave and Fiber Optic for Mobile Backhaul engineering. It includes the following:**

- dBm Planner® software suite
- Outside Fiber Optic footprints visualization
- GPS tracking for path surveys.

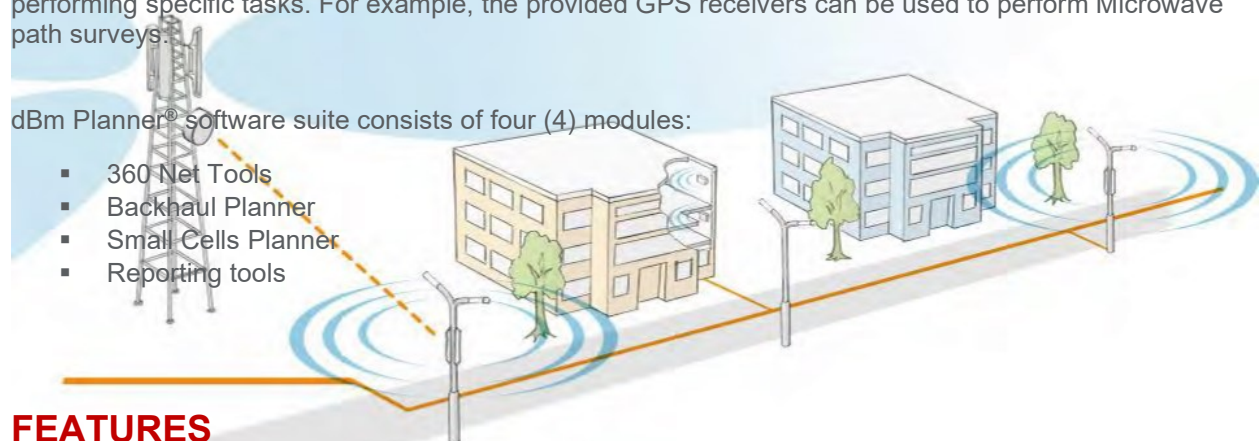
**dBm Planner®** is a software suite consisting of modules and functions for the design of high capacity backhauls, or cellular transport networks composed by Microwave links and Fiber optic Point of Presence.

**Fiber Optic footprints** are ESRI shapefile format or Google KML/KMZ files integrated in dBm Planner®. The fiber vector files are used to plan traffic aggregation sites toward Core infrastructures and/or Switching Centers through fiber Point of Presence.

**Accessories** are software and/or hardware complementary to dBm Planner® with the purpose of performing specific tasks. For example, the provided GPS receivers can be used to perform Microwave path surveys.

dBm Planner® software suite consists of four (4) modules:

- 360-Net Tools
- Backhaul Planner
- Small Cells Planner
- Reporting tools



## FEATURES

### ➤ Backhaul Planner

- User friendly Graphical Interface
- Microwave network & links engineering: LOS radios
  - Standalone User or Multi-User environment
  - Automatic network design based on equipment link distance matrix and different criteria (Topology, Fiber Optic proximity, Fiber POP candidates, Structure types, Number of antennas per site type, LOS, etc.)
  - Overlay of Fiber optic footprints for better traffic aggregation Hub sites search
  - Accurate Desktop LOS Analysis: Fresnel zone ellipses display on 3D (Google & Bing)
  - Overlay of FCC ASR towers, and MW registered links on a project during design for easing sites acquisition and RF/MW candidates search ring
  - Link budget & Performance calculation
  - System availability calculation
  - Automatic import of clutter data

- Interactive Path profiles
- Multiple Digital Elevation Models (DEM) dataset support: NED, SRTM, etc.
- Multiple Land cover data
- Space and Frequency diversity
- Antennas height automatic calculation
- Multipath outage models: ITU-R 530-6/7/8/10, ITU-R 338-5 & Vigants-Barnett, etc.
- Reflection & Diffraction analysis
- Rain attenuation models: Database, ITU-R & Crane
- Interference analysis
- Design audit & reporting

- Fiber Optic routes display
- Lit buildings display online Database
- Microwave links engineering: NLOS radios (future release)
- IP/VLANs design & overlay on Layer 1 network (future release)
- BOM & Visio builders (future release)

### ➤ 360 Net Tools

- User friendly Graphical Interface
- Centralized or Standalone Relational Database
- Bing Maps: Bird's eye, Satellite & Road views
- Google Maps: Satellite & Street views
- Fiber ESRI & Google KML/KMZ files overlay
- Minimum distance to fiber route
- Accurate Structure and clutter height assessment (Building, Tower, Trees, etc.)
- Integrated FCC MW links and tower registration Database
- Integrated Industry Canada MW links Database
- Industry Canada XML file generation for frequency license application
- FCSA MICS file generator
- Site and link data sources: Info vista TEMS LinkPlanner, TXT, CSV, Excel files and Pathloss 4.0
- Customization for data import from other sources
- Multiple Digital Elevation Models (DEM) dataset: NED, SRTM, etc.
- Interactive MW Links Path Profile
- Clutter Datasets import on Path Profiles
- Obstacle distance assessment
- Accurate Desktop LOS Analysis: Fresnel zone ellipses display on 3D maps (Google & Bing)
- Line-Of-Sight (LOS) Path survey: Driving & Walking directions
- GPS Integration for LOS Survey
- UTM, decimal and DMS coordinate formats support
- Site Grid clustering
- Distance metric support: Feet/Mile and Meter/Kilometer
- Links display per color (based on frequency band)
- License management