

# cnHeat™ Radio Frequency Predictions for Fixed Wireless

## QUICK LOOK:

cnHeat is built upon Cambium Networks' expertise in fixed wireless Radio Frequency (RF) planning, propagation and modeling as seen in LINKPlanner and integrated with GIS data down to one-meter precision. cnHeat generates highly accurate RF predictions and derivative services that precisely represent the reality of the RF world. 3, 5, 28, and 60 GHz are supported.

cnHeat features four capabilities:

**Locate, Identify and Optimize and LiDAR**



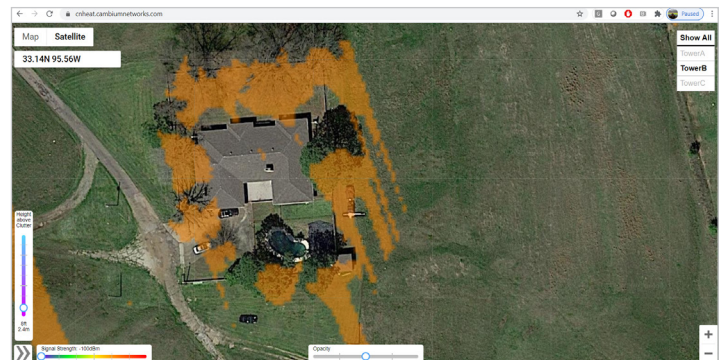
## Key Highlights

### Locate

- Best-in-class RF Prediction Software: Provides a 3D view with resolution down to one meter covering site radius of eight miles.
- 3 GHz nLOS / NLOS propagation model: Accurate predictions of coverage behind trees and buildings for all your 3 GHz access points.
- Ease of Use: Customer service representatives can find the best place to install on any property (latitude, longitude and height) in seconds.
- Operational Savings: Improve successful install times and avoid failed installs.

### Identify

- Find New Customers: Find the building locations and addresses that have coverage per desired installation height and RSSI requirements.



### Optimize

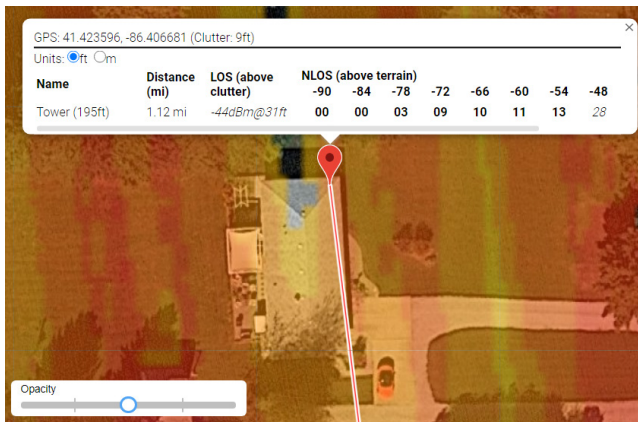
- Find Optimal Greenfield Site Locations: Determine the optimal locations to cover the most subscribers.

### LiDAR

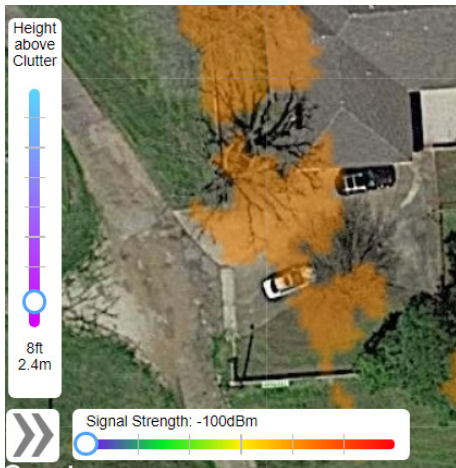
- Obtain high resolution DTM (Digital Terrain Model) and DSM (Digital Surface Model) from high resolution LiDAR.
- This DTM and DSM allows for cnWave planning using the ANP (Advanced Network Planning) tool.

# cnHeat™ Radio Frequency Predictions

## Key Features



Location bubble shares latitude and longitude, clutter height, distance from towers, coverage heights for LOS and NLOS.



Height and Signal Strength sliders allow dynamic control of coverage for heat map.

### Locate your subscribers with high-resolution heat maps

Uses one-meter or better, resolution GIS data.

One meter prediction display resolution.

Installation height provided to optimize SM placement.

Installation height dynamically configurable.

Coverage RSSI dynamically configurable.

Coverage display shows either RSSI or height.

Trillions of RF prediction calculations at the user's fingertips.

Select location on map with cursor and bubble appears:

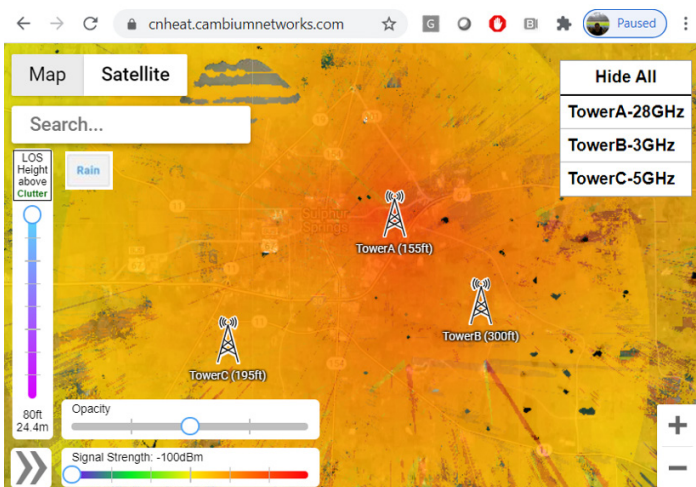
- Latitude and Longitude.
- Distance from AP sites.
- Height required for LOS to each AP site.
- Height of clutter (e.g. building height or tree height).
- Coverage heights required for LOS and various RSSI levels in 3 GHz NLOS.

Travel to location instantly via address, latitude and longitude, or common names.

Dynamically display rain or non-rain propagation for 28 and 60 GHz.

Dynamically display the four 60 GHz channels.

Quickly and accurately plan 60 GHz networks and DN placement.



28 GHz and 60 GHz support dynamic selection of rain propagation model

## cnHeat™ Radio Frequency Predictions



*Identify determines green circled home on the left has coverage for desired install height above roof and red circle home on the right does not. Location and addressing information is provided for the home on the left and all similar buildings.*

### Identify your subscribers with locations and addresses

User specifies the height of coverage above the roof or ground, and the minimum RSSI level.

Summary of total buildings covered is provided. Customer has ability to receive:

- Location (Latitude and Longitude) for each building provided (worldwide)
- Address for each building provided (United States)

Target end customers based on these locations and addresses provided to user. Or user can have locations provided at no charge to MarketBroadband.com, which will convert the locations to postal address data for a marketing campaign.

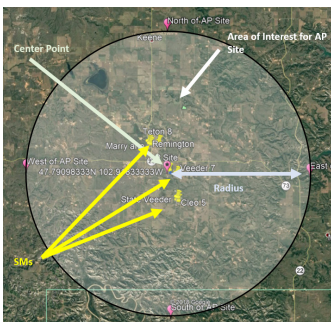
### Optimize your Greenfield site placement

Up to 32K subscriber locations.

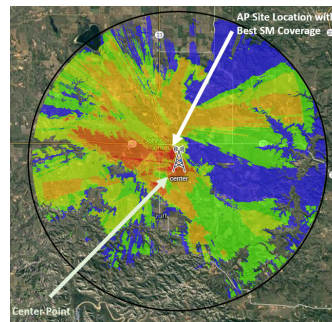
Center point for Greenfield site search and radius of search.

Two desired site heights.

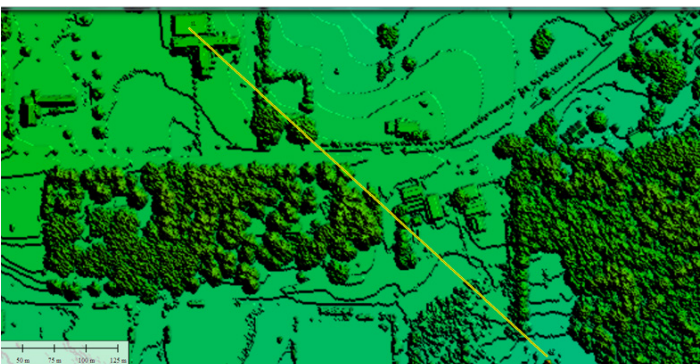
Receive heat map showing subscribers covered at every square meter.



*Subscriber locations, area of search, and site heights are input.*



*Heat map with one meter resolution output.*



### LiDAR for cnWave Planning

Specify your AOI (area of interest) up to one square mile of coverage.

High resolution LiDAR used to create high resolution DTM (Digital Terrain Model) and DSM (Digital Surface Model) for your AOI.

DTM and DSM used in ANP (Advanced Network Planning) tool to optimize coverage, cost, and throughput of cnWave network.

Cambium Networks (services@cambiumnetworks.com) or a Cambium Networks authorized distributor provides ANP planning.

## cnHeat™ Radio Frequency Predictions

### High-Resolution GIS

#### Driven by one-meter or better GIS resolution

Up to 32K subscriber locations.

Center point for Greenfield site search and radius of search.

Two desired site heights.

Receive heat map showing subscribers covered at every square meter.

### Powered by High-Performance Computing

Trillions of calculations are needed to handle a site's GIS data.

Trillions more calculations needed for 3D one-square-meter predictions covering eight-mile radius.

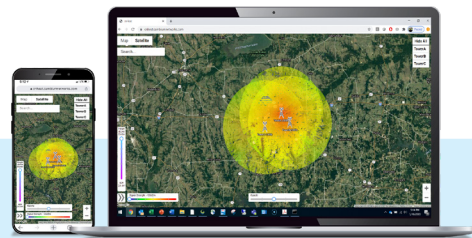
Calculations facilitating predictions available instantly via cnHeat's user interface.

### Best-in-Class Propagation Models

#### Propagation models reflect reality

Propagation model experience from leading RF equipment provider and cutting-edge RF propagation tools such as LINKPlanner.

3 GHz nLOS / NLOS developed to support the fixed point-to-multipoint experience.



### Try out a demo version of cnHeat

**cnHeat Demo Website:**  
[cnheat.cambiumnetworks.com](http://cnheat.cambiumnetworks.com)

**ACCOUNT NAME:** cnheat  
**PASSWORD:** demo

#### ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.