# **LINK**Planner
## Easy and Accurate Link Planning Tool

### QUICK LOOK:

- **Engineer a highly reliable wireless link even in challenging environments**

- **Plan an entire project including Point-to-Point (PTP) and Point-to-Multipoint (PMP) products**

- **Perform calculations for both licensed and unlicensed products**

- **Automatically load path terrain profiles and environmental factors, such as rain fade**



## PREDICTABLE PERFORMANCE. SHORTER INSTALLATION TIME.

Wireless network operators are constantly looking at how to reduce the total cost of ownership of the network in order to increase their return on investment. Keeping costs down starts with selecting the right equipment with the correct configuration for the desired performance and reliability. Cambium Networks has developed the **LINK**Planner tool to simplify the design of these networks whether they are PTP or PMP. By designing the network with predictable performance up-front the cost of procurement, installation, configuration and ongoing support can be minimized.

## OPTIMIZE YOUR NEEDS

Designed for use with our PTP and PMP solutions, **LINK**Planner allows you to easily and quickly design networks for optimal deployment and cost effectiveness. With versions for Microsoft® Windows® and Intel®-based Mac® systems, **LINK**Planner is a free, easy-to-use link design tool that can be downloaded from the Cambium Networks website.

## LINKPLANNER FEATURES

- Plan and optimize a single link or multiple links simultaneously

- Display a comprehensive overview of your entire wireless network via Google Earth™ mapping service

- Conduct "what if" scenarios based on geography, distance, antenna height and transmit power and instantly see the effects on performance

- Generate reports that validate projected performance and serve as time-saving deployment guidelines

- Create a bill of materials for PMP and PTP networks, including accessories

- Plan multi-sector towers and multi-tower networks assigning SMs (subscriber modules) to the best access point (AP)

- Export list of SMs and associated modulation modes to the Cambium Capacity Planning tool

## SUPPORTED PRODUCTS

| Point-to-Point (PTP) | Point-to-Multipoint (PMP) |
|---|---|
| 60 GHz cnWave | 60 GHz cnWave *(coming soon)* |
| ePMP family | ePMP family |
| PTP 450 family | PMP 450 family |
| PTP 550/550E | PTP 670/700 HCMP |
| PTP 670/700 | cnRanger |
| PTP 820/850 | cnReach |
| cnReach | |

# **LINK**Planner

**LINKPlanner** performance reports give confidence that your chosen system will meet your needs and provide installers with configuration guidelines that enable them to quickly deploy the network. Thousands of our customers have obtained accurate link performance projections using the LINKPlanner tool.

## LINKPLANNER IN ACTION

The first step in link design is to enter information about the sites you want to connect. The recommended method to insert sites into a project is to import the latitude and longitude information from sources such as Google Earth™ mapping service.

LINKPlanner then automatically imports a path profile to which you can add additional obstructions to accurately model the environment.

By modifying system characteristics, such as antenna type and height, you can obtain the optimal configuration to achieve the performance you need to meet your throughput and availability requirements. In addition to throughput and availability, you will also see projected system gain margin and path loss for the link.
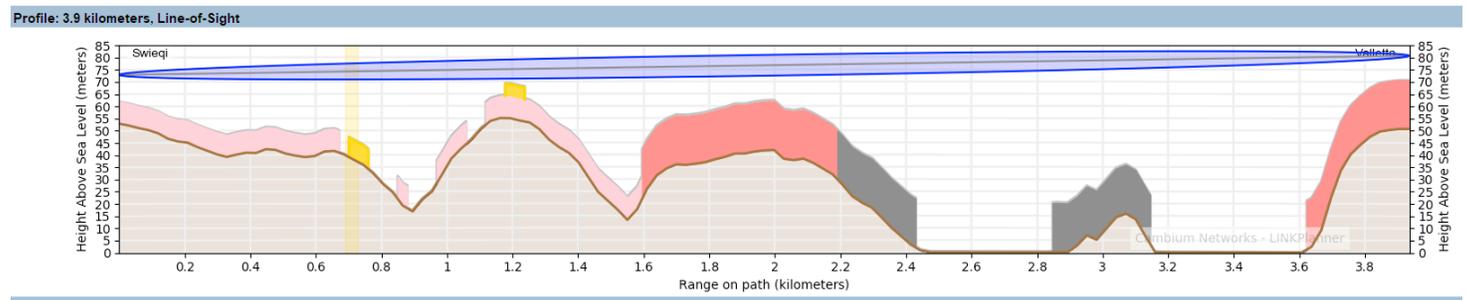


*Path profile with clutter and obstructions.*

## Link Summary

| | |
|---|---|
| **Aggregate IP Throughput** | **413.12 Mbps** |
| **Lowest Mode Availability** | **100.0000%** |
| **System Gain Margin** | 30.03 dB |
| **Free Space Path Loss** | 119.62 dB |
| **Gaseous Absorbtion Loss** | 0.04 dB |
| **Excess Path Loss** | 0.00 dB |
| **Total Path Loss** | 119.65 dB |

## Performance Summary

**Performance to AP-Airport**

| | |
|---|---|
| **Predicted Receive Power** | -75 dBm ± 7 dB |
| **Maximum Usable Mode** | MCS-11 (16 QAM 0.5) |

## Performance Summary (ITU-R P.530-17)

**Performance to Swieqi**

| | |
|---|---|
| **Predicted Receive Power** | -47 dBm ± 5 dB |
| **Mean IP Predicted** | 188.84 Mbps |
| **Mean IP Required** | 150.0 Mbps |
| **% of Required IP** | 126% |
| **Minimum IP Required** | 100 Mbps |
| **Min. IP Availability Required** | 99.9900% |
| **Min. IP Availability Predicted** | 99.9990% |
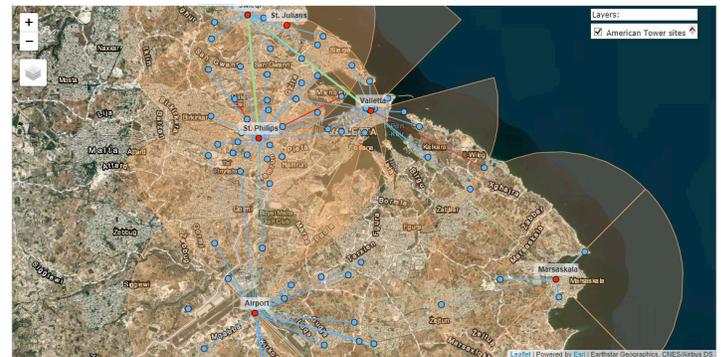


*Online network view.*

While **LINK**Planner projections have proven to be extraordinarily accurate, such precision depends on obtaining accurate and complete path data. Based on the path data provided, **LINK**Planner reports can predict after-deployment performance and provide your installers with the information they need to successfully install the links in your network.

## **LINK**Planner
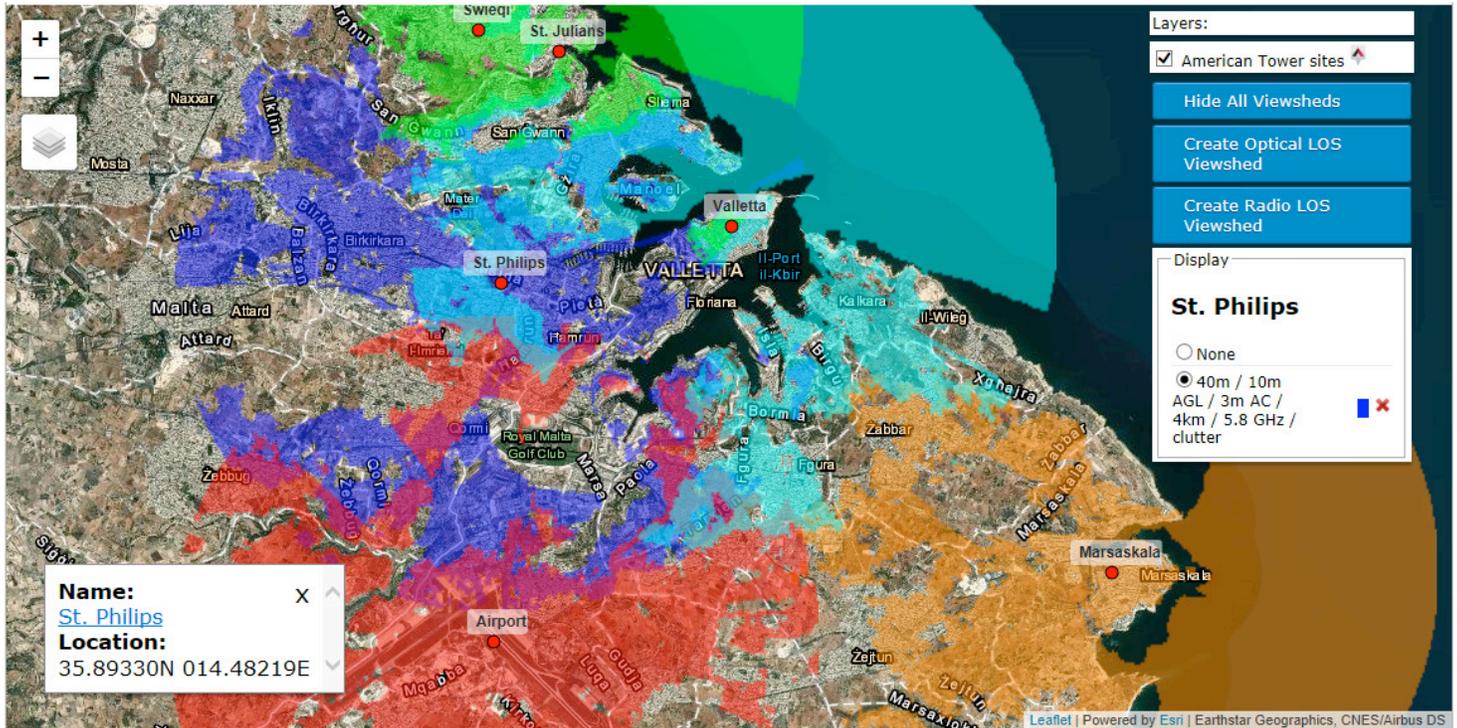


*Viewsheds allow the user to quickly see all the locations in the area surrounding a chosen site that are considered to be line-of-sight for a given tower and subscriber height.*

## Download LINKPlanner here:

**cambiumnetworks.com/products/software-tools/linkplanner/**

### 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.

**cambiumnetworks.com**

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