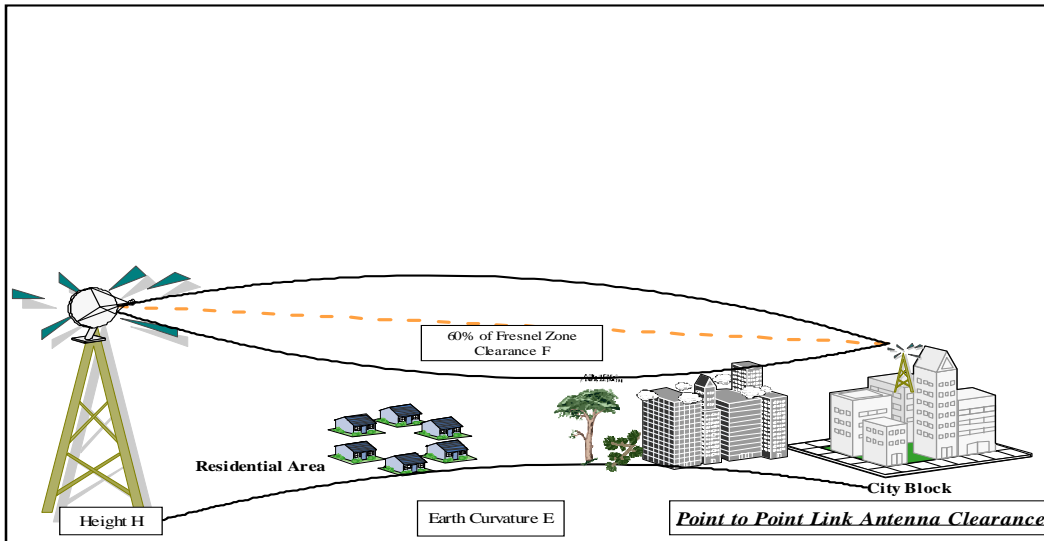




Antenna Heights Requirements www.WiFiGlobalDepot.com **Your Wireless Partner**



There are many factors that affect the availability to do a good wireless link: noise (due to other radios transmitting in area), weather interference (especially for equipment working over 6 GHz.), height of antennas, etc. We recommend to do a Site Survey before you decide the frequency and channels selected for your application.

The Antenna Height is related to the Clear of Radio Line of Sight requirement for most of the equipment in ISM Bands: 2.4 GHz to 5.8 GHz, there are 3 main issues:

1. Earth Curvature: The longer the distance, the higher the antenna has to be to clear this obstacle. This relation is not proportional, please see chart.
2. Fresnel Zone: This is an electromagnetically field generated by light or radio signals, and any solid object can diffract, reflect or modified the path of this signals. Sixty (60%) percent of this Fresnel Zone field must be clear to be able to have proper communication. This height has to be added to Earth Curvature obstruction.
3. Objects Obstruction: Any trees, buildings, etc. in the Signal Path also reflect or diffract the signal, so their height should be added to the Earth curvature and Fresnel Zone clearance requirements.

Add those values to find appropriate Antenna Height.

Link Distance (Miles)	F= Fresnel Zone (2.4 GHz – 60%)	E=Earth Curvature	H=Total Antenna Height Add any Obstruction O
1	10	3	13
3	23	4	27
5	30	5	35
8	40	8	48
10	44	13	57
15	55	28	83
20	65	50	115
25	72	78	150

Make sure you are above the minimum requirements before testing the link, this does not imply the link could or not work for lower or higher heights as many other facts could affect the signal.