

## Deliberant APC Propeller efficiency in a client device scenario



The Deliberant APC Propeller series of devices has a unique functionality that allows the user to change antenna characteristics by changing the physical orientation of the device at the time of installation.

When the Propeller is aligned vertically in AP mode, the azimuth beamwidth is 60 degrees and the elevation beamwidth is 15 degrees. When it is aligned horizontally in CPE mode, the antenna beamwidth angles are inverted, in that the azimuth beamwidth is 15 degrees and the elevation beamwidth is 60 degrees.

By utilizing a narrow azimuth beamwidth, this CPE mode orientation decreases the noise level on the client side and provides a positive impact on performance and stability of the link.

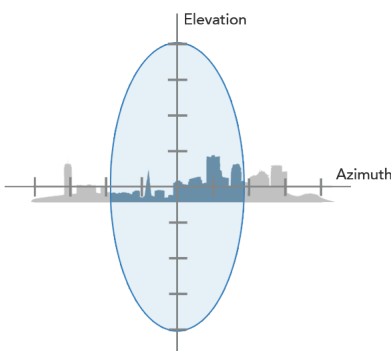
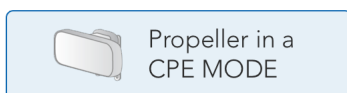
Frequency, GHz	Propeller in H position		Propeller in V position		Difference (V-H), dBm
	AP	Signal level, dBm	AP	Signal level, dBm	
4.95	SSID 1	-89	SSID 1	-79	10
5.14	SSID 2	-83	SSID 2	-77	6
5.18	SSID 3	-79	SSID 3	-67	12
5.18	SSID 4	-79	SSID 4	-65	14
5.28	SSID 5	-77	SSID 5	-66	11
5.34	SSID 6	-85	SSID 6	-75	10
5.5	BS*	-54	BS*	-58	-4
5.64	SSID 7	-87	SSID 7	-83	4

\*BS - Base Station

The table above shows a site survey scan done at the same location with different antenna orientations of an APC Propeller 5 device. Based on the results, the following conclusions can be drawn:

- Using the horizontal orientation decreases ambient interference from surrounding devices by 4-14 dBm
- Using the horizontal antenna orientation increases the signal from the Base Station by 4 dBm

### Easy antenna alignment



An additional benefit of using the CPE mode orientation is that it allows easy antenna alignment during installation. Using the wide antenna beamwidth on the elevation, the device does not need to be tilted upwards or downwards to find the best path to the base station and only alignment on the azimuth is necessary.

