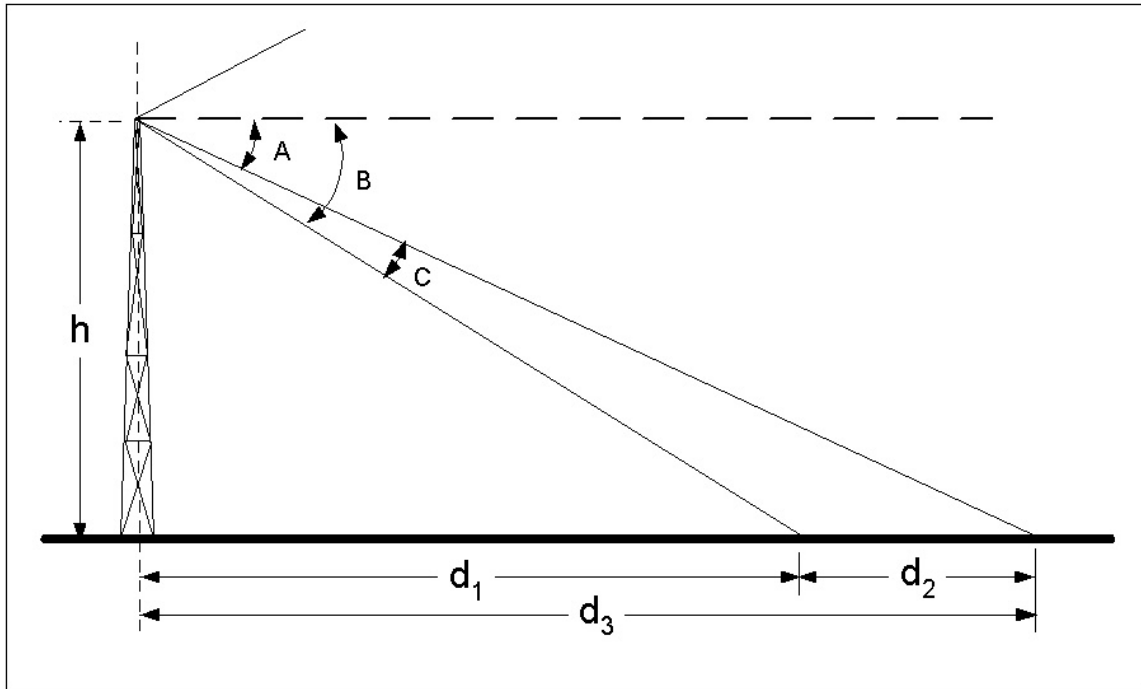


Down tilting



You can use this diagram in determining the distance the main antenna lobe will hit from the site or to determine the amount of tilt you need to cover a desired location.

$$d_3 = h / \tan A$$

$$B = \tan^{-1} (h / d_1)$$

$$d_2 = d_3 - d_1$$

$$C = B - A$$

where h is the height of the tower

d_1 is distance from the site to the intended coverage location

d_2 is distance from the down tilted main antenna lobe to where the original main antenna lobe will hit

d_3 is distance from the site to where the main antenna lobe will hit

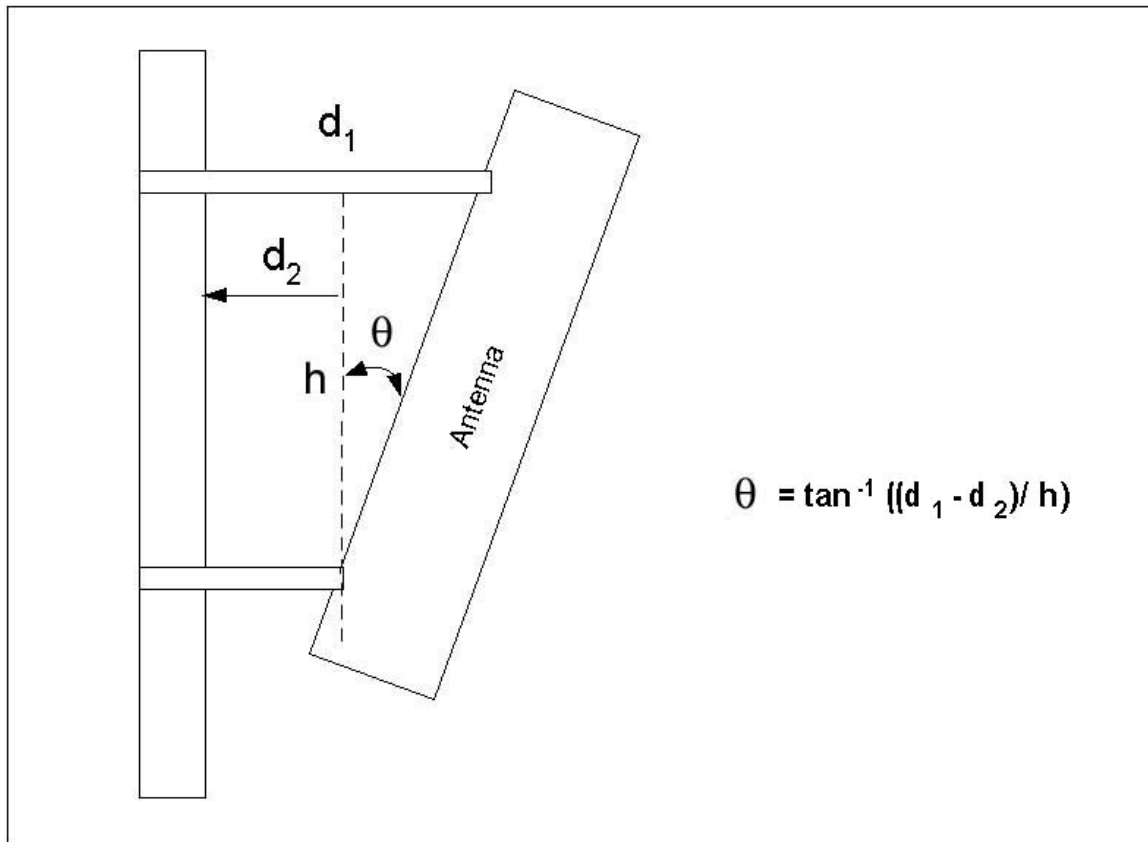
A is half the antenna's vertical beam width

B is half the antenna's vertical beam width plus the down tilt

C is the down tilt required for the main antenna lobe to hit the desired coverage location



Down tilt Angle by Simple Measurement on the Actual Antenna



where θ is the down tilt angle

d_1 is the length of the upper antenna-mounting arm

d_2 is the length of the lower antenna-mounting arm

h is the distance between d_1 and d_2

By making simple measurements on the existing antenna and its mounting arms, you can calculate the down tilt angle by using the formula:

$$\theta = \tan^{-1} ((d_1 - d_2) / h)$$

Also, check if the antenna has an electrical down tilt and if it is the right antenna mounted at the site by validating the make and model number and reading it right off the antenna.