

SolarTech Power Solutions

Base station height and communication distance



Overview

Per ITU-R P.1410 recommendations, base station antenna heights typically range between 15-60 meters. Urban deployments favor 25-35m, rural coverage requires 40-55m, while 5G mmWave systems operate efficiently at 15-25m. Critical factors include propagation models, terrain, and.

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Except for local contacts, which are primarily made on Very High and Ultra High Frequencies (VHF and UHF), communicating between any two points on the earth rely primarily on high-frequency (HF) signals propagating through the ionosphere. The earth's ionosphere acts much like a mirror at heights of.

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Here is a simple line of sight calculator that will do the complicated math for you to determine just how far the horizon is from your HT or your base station antenna at any height above level and flat ground (or calm water) on the VHF/UHF ham bands. This calculator assumes nothing is in the way of.

- (1) Base stations with an emission bandwidth of 1 MHz or less are limited to 1640 watts equivalent isotropically radiated power (EIRP) with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below.
- (2) Base stations with an emission bandwidth greater than 1 MHz are.

To simplify, the following charts show how many miles you can usually communicate over normal terrain in suburban or rural areas with different types of radios, power levels, and station configurations. The graphs compare the most commonly available 2-way radios such as ham, CB, FRS, MURS, and.

There are wide variations in the distances obtained for ground-air communications. Under some conditions, the range may be only 10-15 miles; for other conditions the range may exceed 200 miles. In planning new installations, or evaluating existing ones, the following guidelines will help estimate.

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