

Air-to-ground base station communication





Overview

Can antennas be used for direct air-to-ground communications?

This paper proposes an antenna solution for direct air-to-ground (ATG) communications, particularly focusing on the challenges and potential of the digital airspace vision. The intra- and inter-cell interference caused by sidelobes of ground base station (BS) antennas and the bandwidth constraints at sub-6 GHz bands are important limitations.

What is a ground BS antenna?

The paper introduces a ground BS antenna design for the 5.9-8.5 GHz band. The main contributions include wide-band, high-isolation antenna array concept for the ground BS antenna, along with an analysis of how the antenna array dimension affects the signal-to-noise-and-interference ratio and throughput in ATG systems.

Can a 6g antenna be used for direct air-to-ground communications?

Abstract—The sixth generation (6G) of mobile communication networks aims to bring innovations in mobile broadband solutions and airborne communications. This paper proposes an antenna solution for direct air-to-ground (ATG) communications, particularly focusing on the challenges and potential of the digital airspace vision.

How does a ground station use an antenna array?

Each ground station uses an antenna array with parameters $(M, N, P) = (2, 2, 2)$ to produce a beam, where M denotes the number of rows in the array, N denotes the number of columns in the array, P denotes the number of polarizations, and the pattern of each antenna element follows the 3GPP TR 38.901 .



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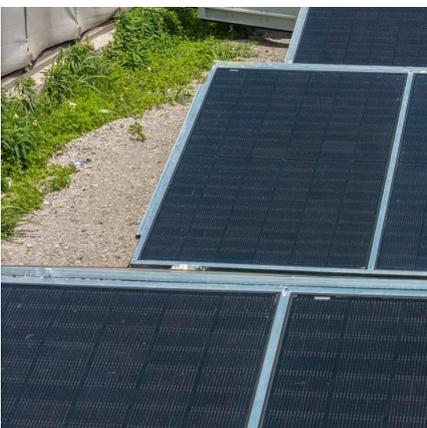
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