5G Wideband Magneto-Electric Dipole Antenna Fed by a Single-Layer Corporate-Feed Network based on Ridge Gap Waveguide

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Design of MED

- The radiating elements is realized by the four metallic pins and the cavity walls surrounding them.
- The top surface of 4 metallic pins : equivalent electric dipole
- Gaps between the metallic pins and cavity wall : equivalent magnetic dipole

Ridge Gap Waveguide

- Controlling the propagation of waves using parallel plate waveguide concept and with the helps of AMC pins
- AMC pins provides the band-stop characteristics and determined the operating band of the RGW.
- Main Advantages: No good electrical contact is required for multilayer waveguide structure → relax the fabrication cost

Simulated S-11 and Directivity

Simulated Radiation Pattern

Dispersion diagram of the proposed RGW

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