

عنوان مقاله:

A ۲-bit Programmable Metasurface for Dynamic Beam Steering Applications

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خلاصه مقاله:

This paper presents a ۲-bit programmable digital metasurface for real-time beam steering applications at X-band. Tunability of the metasurface is provided by employing a varactor in the unit cell structure to control each unit cell independently. This ability leads to achieve beam steering capability in both elevation and azimuth directions. The structure is designed so that the biasing circuit has no electrical connection to the MS ground. The equivalent circuit model of the unit cell is also presented to better investigate its physical behaviour. Furthermore, the effects of number of unit cells and states of reflection phase on far-field pattern are investigated. Finally, the numerical results are compared to analytical ones, where a good agreement between them is observed.

کلمات کلیدی:

Programmable metasurface, Beam steering, phase profile, varactor

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