

عنوان مقاله:

Effects of Interdigital Capacitors on scan angles in microstrip Composite Right/Left-Handed Leaky-Wave Antennas

محل انتشار:

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خلاصه مقاله:

In this paper; two kinds of interdigital capacitors (IDCs) which are used in composite right/left handed (CRLH) microstrip leaky-wave antennas (LWAs) are proposed and effects of them in range of 8- 11GHz on scan angles are presented. Actually proposed IDCs are utilized in unite cells of periodicCRLH LWAs. Accurately these leaky-wave antennas have been investigated by commercial software. CRLH LWAs often scan the space entirely and inherently but the gain changes in the scanning way. So reducing magnitude of the gain in this way is not appropriate and we should use suitable structure depend on frequency band. Thus these two interdigital capacitors are proposed: 1. Typical IDC, 2. Sinusoidal-shaped IDC. As result, typical IDC is appropriate for range of 8-9.5GHz and sinusoidalshaped IDC is suitable for 9.5-11GHz frequency band since sinusoidal-haped IDC presents higher efficiency and more gain in 9.5-11GHz than typical IDC. Meanwhile the sinusoidal-shaped slots are introduced as IDC .and it's an innovation

کلمات کلیدی:

Leaky-wave antenna (LWA), interdigital capacitor (IDC), composite right , left handed (CRLH), slow wave structure, scan angle, periodic structure, Metamaterial

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