

A NOVEL SLOT ARRAY ANTENNA WITH SUBSTRATE
INTEGRATED COAXIAL LINE TECHNIQUE

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ABSTRACT

- A novel slot array antenna with substrate integrated coaxial line (SICL) technique is proposed. The proposed antenna has radiation slots etched homolaterally along the mean line in the top metallic layer of SICL and achieves a compact transverse dimension.
- A prototype with 5×10 longitudinal slots is designed and fabricated with multilayer liquid crystal polymer (LCP) process. A maximum gain of 15.0 dBi is measured at 35.25 GHz with SLLs of -28.2 dB (E-plane) and -33.1 dB (H-plane).
- The close correspondence between experimental results and designed predictions on radiation patterns has validated the proposed excitation in the end



EXISTING SYSTEM

- The features of high gain, high efficiency, high-power capability and low loss, slotted wave guide array Antennas have been widely used for communication and radar System sin microwave band and higher with an ineluctable defect of poor grating lobes suppression in the circumstance of wide beam scanning.
- Similar to that of rectangular waveguide (RWG), the designs of slot array antenna with post-wall waveguide(PWG) or substrate integrated waveguide (SIW) follow as well the fact that the width of waveguide should be larger than $0.5\lambda_0$ so as to support the dominant TE₁₀ mode, which imposes restrictions on the size reduction of antennas



PROPOSED SYSTEM

- slot array antenna based on SICL technique with multilayer LCP process. The proposed design concept of SICL slot array Antenna especially has a more compact transverse dimension In comparison to those slotted wave guide schemes.
- A compact Chebyshev distributed feeding network is designed and integrated with tenfold 1×5 slot sub array to constitute the 5×10 SICL slot array antenna.
- A maximum gain of 15dBi is Measured at 35.25GHz with SLLs of -28.2dB (E-plane) and -33.1dB (H-plane)



SOFTWARE REQUIREMENT

- Ansoft HFSS(High Frequency Structure Stimulator)
- CST

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