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A CPW Fed Bowtie Microstrip Slot Antenna for Wireless Applications

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Abstract : A slotted Bow-Tie microstrip patch antenna utilizing input of coplanar waveguide for high frequency wireless applications is proposed and analyzed in this work. RT/Duroid 5880 with its dielectric constant 2.2 is opted for the experimentation to analyze the proposed microstrip slot antenna. This antenna is exclusively designed for the frequency range of 10 GHz to 11 GHz and modelling parameters are obtained from the already existing data and dimensions of antenna are adjusted by employing some corrugated slots in the Bowtie shape to obtain the required bandwidth so that it can radiate within the specified range. The characteristics of proposed antenna are measured by a FEM electromagnetic field solver and it is found that the reflection coefficient, voltage standing wave ratio, radiated gain, feed point impedance, radiation efficiency are in a good agreement. This antenna is also exhibiting an absolute bandwidth of 1000 MHz. The validated results indicate that the proposed bowtie microstrip slot antenna comes under the wideband category and utilized in the wireless application ranges between the 10 GHz – 11 GHz.

Keywords : CPW, bowtie, FEM, corrugated
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