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(54) Title of the invention : BROADBAND ANTENNA BASED ON SUBSTRATE INTEGRATED WAVEGUIDE TECHNOLOGY WITH BOW-TIE SHAPED SLOT

(51) International classification	:H01Q0001380000, H01Q0001500000, H01Q0013100000, H01Q0013180000, H01Q0009280000	(71)**Name of Applicant :**
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(57) Abstract :
The present invention discloses a broadband antenna based on substrate integrated waveguide (SIW) 100. The regular rectangle slot is modified by bow-tie shaped slot that affects the bandwidth of an antenna. The whole antenna consists of a substrate 101, upper and lower metal layer 102, a micro-strip line, a plated through hole 103, SIW cavity 104, and a bow tie slot 105. The SIW cavity 104 is realized by connecting the multiple plated vias 103 in the dielectric substrate. A bow tie slot 105 is printed on the top of the SIW cavity, used for radiation. To enhance the bandwidth of the antenna, the slot 105 is located at optimum position from the center of the cavity. Moreover, the micro-strip line is electrically connected to excite the SIW cavity 104 and slot 105. By finely optimizing the size of the slot and its position, the proposed invention exhibits wide fractional bandwidth and provides high gain, unidirectional pattern.

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