

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041046391 A

(19) INDIA

(22) Date of filing of Application :23/10/2020

(43) Publication Date : 06/11/2020

(54) Title of the invention : LOW-PROFILE WIDEBAND SUBSTRATE INTEGRATED WAVEGUIDE CAVITY-BACKED ANTENNA WITH DUMBBELL SLOT

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(57) Abstract :

ABSTRACT: Title: Low-Profile Wideband Substrate Integrated Waveguide Cavity-Backed Antenna with Dumbbell Slot The proposed disclosure presents a low-profile wideband substrate integrated waveguide (SIW) cavity-backed antenna 100 with dumbbell shape slot. The low-profile wideband substrate integrated waveguide cavity-backed antenna 100 comprises a dielectric substrate 101, a pair of metal layers 102 printed on front and back sides of the dielectric substrate 101, plurality of grounded vias 103 are uniformly distributed along edges of the antenna 100 to build the SIW cavity 104 on the dielectric substrate 101, a radiating slot 105 which is configured with a dumbbell shape is engraved at the top plate of the SIW cavity 104 and a pair of metallic vias 106 are placed at centroid of the SIW cavity 104. The proposed low-profile wideband SIW cavity-backed antenna 100 with dumbbell slot achieves wide impedance bandwidth and provides high gain, unidirectional pattern and low cross polarization levels.

No. of Pages : 16 No. of Claims : 9