

(54) Title of the invention : CONFORMAL MULTI-WIDEBAND ULTRA-COMPACT FOUR-PORT MIMO ANTENNA

(51) International classification :H01Q0009040000, H01Q0001380000, H04B0007041300, H01Q0021280000, H04W0052360000

(86) International Application No :NA
 Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
 Filing Date :NA

(62) Divisional to Application Number :NA
 Filing Date :NA

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(57) Abstract :
 The present disclosure relates to a conformal multi-wideband ultra-compact four-port MIMO antenna with DGS and improved diversity performance for On-Off body applications. The antenna substrate (102), Rogers RTDuroid with a thickness of 0.254mm, may be chosen for its flexibility and controllable Specific Absorption Rate (SAR). Optimal physical parameters of the radiating patch and ground were determined to achieve peak performance. Through rigorous optimization, a single-port antenna design (100) is achieved, boasting a wide bandwidth of 8.20GHz to 52.25GHz. Furthermore, the antenna's resilience to bending at different angles was investigated to ensure robust performance in various conditions. Subsequently, a four-port Multiple-Input Multiple-Output (MIMO) (600) configuration is derived from the single-port design (100), and a prototype is fabricated for experimental validation. The results confirm the efficacy of the antenna design, demonstrating its suitability for wideband communication tasks.

No. of Pages : 35 No. of Claims : 9