(12) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :31/07/2025

(21) Application No.202511073063 A

(43) Publication Date : 22/08/2025

(54) Title of the invention : MINIATURIZED QUAD-PORT CONFORMAL MULTI-BAND MULTIPLE-INPUT MULTIPLE-OUTPUT (MIMO) ANTENNA SYSTEM

(51) International classification :H01Q0009040000, H01Q0001380000, H01Q0001520000, H01Q0021060000, H04B0007041300

(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

(71)**Name of Applicant :**
1)Chitkara University
Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India ---------- ----------
2)Chitkara Innovation Incubator Foundation
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Manish Sharma
Address of Applicant :Chitkara University Institute of Engineering & Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India ---------- ----------
2)Kanhaiya Sharma
Address of Applicant :Department of Computer Science and Engineering, Symbiosis Institute of Technology, Symbiosis International (Deemed University), Pune, India ---------- ----------
3)Dr. Surya Narayan Panda
Address of Applicant :Chitkara University Institute of Engineering & Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India ---------- ----------
4)Dr. S Sreenivasa
Address of Applicant :Tumkur University, Vishwavidyanilaya Karyalaya, Bengaluru - Honnavar Rd, Venkatesh Rao Colony, Tumakuru, Karnataka 572103, India ---------- ----------
5)Dr. Pankaj Ramesh Natu
Address of Applicant :Thakur Institute of Management Studies & Research, TIMSR, C Block, Thakur Educational Campus, Gate, 8, Shyamnarayan Thakur Rd, Thakur Village, Kandivali East, Mumbai, Maharashtra 400101 ---------- ----------

(57) Abstract :
A miniaturized quad-port conformal multi-band Multiple-Input Multiple-Output (MIMO) antenna system (100), comprising a dielectric substrate (102) comprising Rogers RT/Duroid material having a thickness of 0.254 mm, a length of 20 mm, and a width of 20 mm, four identical hexagonal radiating patches (104) disposed on a first surface of the substrate, each radiating patch having a side length Lp of 3.75 mm and being arranged orthogonally at 90° with a spacing of 9.00 mm between adjacent elements, a circular slot (106), trapezoidal slot (108) formed in each radiating patch, a common connected ground plane (110) disposed on a second surface of the substrate opposite to the first surface, four microstrip feedlines (112) connected respectively to each of the radiating patches through 50Ω impedance matching, thin connecting stubs (114), exhibits a mutual coupling greater than 15 dB, and maintains conformal capability with bending up to 45° while preserving operational bandwidth. FIG.1

No. of Pages : 27 No. of Claims : 10