

(54) Title of the invention : Design and Development of Multi-band Microstrip Antenna for 6G Ultra-High-Speed Internet Applications

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(57) Abstract :

Antenna design for 6G Wireless Communication aims to create antenna that can operate at higher frequencies to support high-speed data transfer rates. 6G is the next generation of wireless communication technology after 5G. 6G Wireless Communication represents the next generation of cellular networks aiming to provide significantly enhanced capabilities beyond 5G by utilizing higher frequencies, advanced AI integration and novel technology to achieve ultra-low latency, massive connectivity and extremely high data rates. A new generation of antenna system is needed to meet the high-bandwidth, low-latency, ultra-fast data transmission requirements of 6G communication technology, which promises revolutionary improvements in Wi-Fi and Bluetooth applications. Multi-frequency antenna design involves adjusting the length and thickness if a microstrip patch antenna to achieve multiple frequency band. The design process may also involve adding metamaterial structure or notches to the antenna. Miniaturized antenna can be more efficient and less expensive than larger antennas. The current invention demonstrates a novel four-element compact multi-band Microstrip antenna. The suggested antenna is intended for use in the 6G mmWave band applications. The exhibited 6G antenna is made of rectangular ground plane and the substrate is made of Rogers RT /duroid6002.the patch is made of hexagonal slot on the diamond shape material. We will get the multi-band frequencies of different 6G wireless communication applications.

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