

## U Slot Loaded Wearable Textile Antenna

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**Abstract :** The use of wearable antennas is rising because wireless devices become small. The wearable antenna is part of clothes used in communication applications, including energy harvesting, medical application, navigation, and tracking. In current years, Antennas embroidered on clothes, conducting antennas based on fabric, polymer embedded antennas, and inkjet-printed antennas are all attractive ways. Also shows the analysis required for wearable antennas, such as wearable antennae interacting with the human body. The primary requirements for the antenna are small size, low profile minimizing radiation absorption by the human body, high efficiency, structural integrity to survive worst situations, and good gain. Therefore, research in energy harvesting, biomedicine, and military application design is increasingly favoring flexible wearable antennas. Textile materials that are effectively used for designing and developing wearable antennas for body area networks. The wireless body area network is primarily concerned with creating effective antenna systems. The antenna should reduce their size, be lightweight, and be adaptable when integrated into clothes. When antennas integrate into clothes, it provides a convenient alternative to those fabricated using rigid substrates. This paper presents a study of U slot loaded wearable textile antenna. U slot patch antenna design is illustrated for wideband from 1GHz to 6 GHz using textile material jeans as substrate and pure copper polyester taffeta fabric as conducting material. This antenna design exhibits dual band results for WLAN at 2.4 GHz and 3.6 GHz frequencies. Also, study U slot position horizontal and vertical shifting. Shifting the horizontal positive X-axis position of the U slot produces the third band at 5.8 GHz.

**Keywords :** microstrip patch antenna, textile material, U slot wearable antenna, wireless body area network

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