

A novel 2.45GHz switchable beam textile antenna (SBTA) for outdoor wireless body area network (WBAN) applications

Abstract

A novel switchable beam textile antenna (SBTA) for wireless body area network (WBAN) applications is proposed. The SBTA is centrally-fed by a coaxial probe and the power distributed over four circular radiating elements. Four RF switches are integrated through which the SBTA is able to generate beam steering in four directions: 0° , 90° , 180° , and 270° , with a maximum directivity of 6.8 dBi at 0° . Its small size (88mm \times 88mm) and flexibility enables the structure to be easily integrated into safety jackets, rain coats, etc., for tracking, and search and rescue communication purposes. The structure successfully integrates reconfigurability into a wearable textile antenna.

Keyword

Switchable beam textile antenna (SBTA); Wireless body area network (WBAN)