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Linear microstrip resonator for UWB RFID tag (Article)

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Abstract

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The data storage capacity is directly proportional to the number of bits on board of the tag. The main challenge in UWB tag development is to maintain higher number of bits while keeping the tag within the standard size. Higher number of bits also ensures more security and anti-tempering protection of the tagging. In addition, reducing the dimensions of the tag can lead to the possibilities of fully replacing the existing barcode identification system. A new type of planar shorted parallel coupled line microstrip resonator which can replace the existing planar rectangular type resonator has been proposed in this paper. The theoretical approximation and simulation have been performed. A 20-bit resonator has been designed and developed that works between 4.6GHz and 8.1GHz. It is found that the bit density per unit area (cm^2) is about 6.67 bit/cm^2 has been achieved. The simulation has been performed by CST MWS 2017. The results would motivate the researchers to develop a higher bit density UWB passive RFID tag. © Int. J. of GEOMATE.

Author keywords

Barcode Planar microstrip resonator Rectangular type resonator RFID tag UWB

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