

A DESIGN OF TRIPLE-WIDEBAND
TRIPLE-SENSE CIRCULARLY
POLARIZED SQUARE SLOT ANTENNA

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ABSTRACT

- A microstrip-fed simple square slot antenna is proposed for triple-wideband triple-sense circularly polarized (CP) radiation.
- It consists of a L-shaped radiator and a frame lower ground structure with two rectangular strips at opposite corner. A rectangular slit, which is cut on the right side rectangular strip at the lower ground, is mainly used to broaden axial ratio bandwidth (ARBW) at upper band.
- This antenna radiates right-hand circularly polarized (RHCP) wave at lower and upper bands, and radiates left-hand circularly polarized (LHCP) wave at middle frequency band



EXISTING SYSTEM

- Circularly polarized (CP) antennas have been paid more attentions for their good propagation characteristics. And the modern wireless communication systems often operate at several different frequency bands, such as global positioning system (GPS), global navigation satellite system (GNSS), and wireless local area network (WLAN).
- The design of multi-band CP antenna has become a hot research topic in recent decades. Many dual-band CP antennas have been designed with stacked patches, cross-dipoles, and square or ring slots



PROPOSED SYSTEM

- A simple triple-wideband triple-sense CP square slot antenna is proposed. It consists of an L-shaped radiator and a frame structure lower ground with two rectangular strips at opposite corner.
- A rectangular slit is used to improve the upper ARBW. Table I illustrates the comparison of proposed antenna and the previous triple-band CP antennas.
- It shows that this antenna has a simpler structure, more compact size, wider IBWs, and the widest ARBW.
- The measured peak gains within the 3-dBARBWs are 4.2, 3.7, and 3.5 dBic, respectively



SOFTWARE REQUIREMENT

- Ansoft HFSS(High Frequency Structure Stimulator)
- CST

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- Wang-Ta Hsieh, TzeHsuan Chang, and Jean-Fu Kiang, “Dual-Band Circularly Polarized Cavity-Backed Annular Slot Antenna for GPS Receiver,” *IEEE Trans. Antennas Propag.*, vol. 60, no. 4, pp. 2076-2080, 2012.

