

A WIDEBAND CIRCULARLY POLARIZED  
MAGNETO ELECTRIC DIPOLE ANTENNA

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# ABSTRACT

- A novel wideband circularly polarized (CP) magneto-electric (ME) dipole antenna.
- In the proposed antenna, a pair of rotationally symmetric horizontal patches functions as an electric dipole, and two vertical patches with the ground act as an equivalent magnetic dipole.
- A  $\Gamma$ -shaped probe is used to excite the antenna, and a metallic cavity with two gaps is designed for wideband and good performance in radiation. A prototype was fabricated and measured.
- Unidirectional radiation characteristic and low back lobe level are achieved over the whole operating frequency band



# EXISTING SYSTEM

- Circularly polarized (CP) antennas have been widely used in modern wireless communications, such as the global position system (GPS), satellite communication systems, and radio frequency identification (RFID) owing to multipath interference suppression and polarization mismatch reduction.
- Some conventional methods to realize the CP radiations including single probe-fed method, proximity-coupled method, and aperture-coupled method suffer from narrow axial-ratio (AR) bandwidth
- A composite cavity-backed antenna excited by crossed triangular bowtie dipoles achieved a 3-dB AR bandwidth of 39%.



# PROPOSED SYSTEM

- The proposed antenna consists of a pair of rotationally symmetric patches with two identical elliptic arcs functioning as an electric dipole and two vertical patches together with a reflector acting as an equivalent magnetic dipole.
- With the rotationally symmetric structure, a wide 3-dB axial bandwidth can be obtained. By introducing a cavity with two gaps and suitably adjusting the geometries, the ME dipole antenna exhibits stable gain and good radiation characteristics.
- In addition, the proposed CP antenna is single-fed, which is simple and easy to fabricate



# SOFTWARE REQUIREMENT

- Ansoft HFSS(High Frequency Structure Stimulator)
- CST

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# REFERENCES

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