2.33GHz operating frequency.

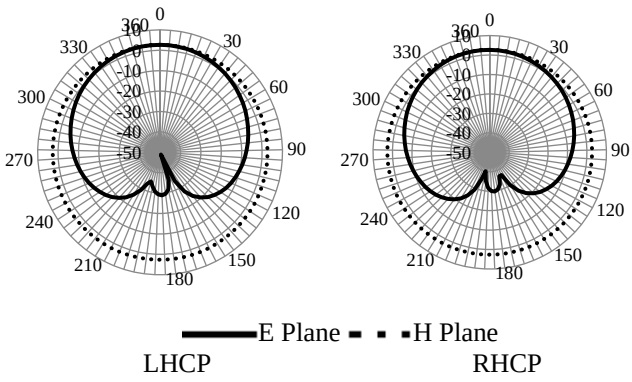

Figure 8. Radiation pattern measured at the minimum axial ratio

Figure 8 shows E plane and H plane radiation characteristics for left-hand and right-hand circular polarization. It is seen that the antenna gives a good axial ratio over a wide beam angle of 140^0 ($-70^0 \leq AR \leq 70^0$) for both LHCP and RHCP configuration. The antenna gives a simulated gain of around 5.09 dBi for LHCP and 5.05 dBi for RHCP configuration.

Table 2. Performance comparison of the proposed model with traditional antenna model

Parameter	Proposed Model	Ref. [11]	Ref. [12]
Reflection Coefficient (dB)	-27.06 dB	-15 dB	-17 dB
Maximum Gain (dB)	5 dBi	6.3 dB	1.5 dB
3dB Axial Ratio beam width (dB)	140^0	$85^0 \pm 2^0$	100^0

Table 2 gives the performance comparison of the proposed model with traditional antenna designs. It is observed that the antenna achieves a wider axial ratio beamwidth with better reflection coefficient characteristics when compared to other models. This ensures a wide field coverage in wireless communication systems.

5. CONCLUSIONS

A low profile circularly polarized reconfigurable antenna is presented. The antenna comprises a square shaped slot etched at its center. The nature of polarization is reconfigured by means of switches placed symmetrically in the slot regions. The antenna gives a measured -10 dB impedance bandwidth from 2.295 GHz to 2.365 GHz in the operating band. The antenna also achieves a good peak gain of 5.09dBi and 5.05 dBi for LHCP and RHCP at operating frequency. Radiation pattern results show the antenna has a good cross-polarization isolation of -12 dB and -13 dB for RHCP and LHCP configurations with wider axial ratio beamwidth of 140^0 and hence finds suitable for modern wireless communications.

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