

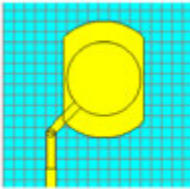
Studies of Circular Polarization Plane Antenna with Direct Feeding

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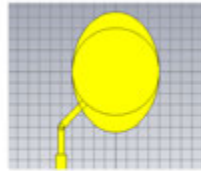
1. Purpose of this study

- Studies of Performance of circular polarization plane antenna by direct feeding to feed elements.
- Structural simplification against backward probe feeding.
- Reduction of number of substrates.
3 substrates with 4 conductive layers
→ 2 substrates with 3 conductive layers

2. Single Antennas

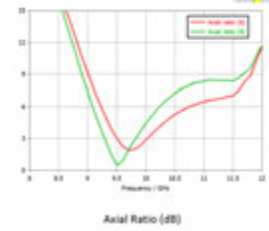
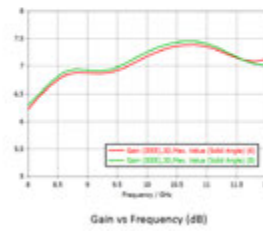


Circular Feed element with linear truncation (lower)
Circular Reactance element (upper)

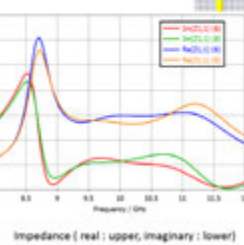
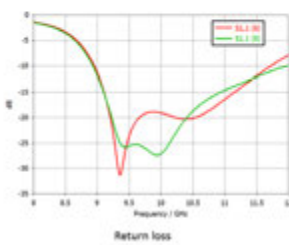


Elliptic Feed element (lower)
Circular Reactance element (upper)

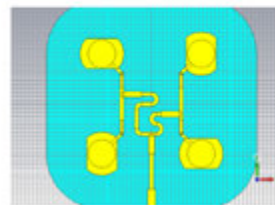
3. Characteristics of a single antenna Elliptic feed element



3. Characteristics of a single antenna Elliptic feed element

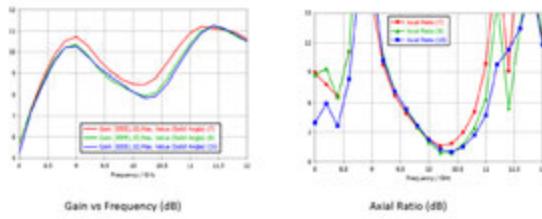


4. Characteristics of an array with 4 antennas Circular feed element with linear truncation



Feed element	Feed element	Feed element	Feed element	Feed element
1	2	3	4	5
1.1	1.1	1.1	1.1	1.1
1.1	1.1	1.1	1.1	1.1
1.1	1.1	1.1	1.1	1.1

Characteristics of a single antenna Circular feed element with linear truncation



5. Conclusion

- Single antenna provides sufficient characteristics by Direct feeding to feed element.
- Array with 4 antennas could not provides flat frequency characteristics.
The gain shows low value at the central frequency compared to higher and lower resonant frequencies.
- The axial ratio provide better response at the center frequency compare to the higher and lower resonant frequency.
- It was found that Direct feeding cannot provide acceptable response for circular polarization.