DESIGN AND DEVELOPMENT OF QUADRATURE BRANCHLINE COUPLER USING SLOW WAVE STRUCTURE

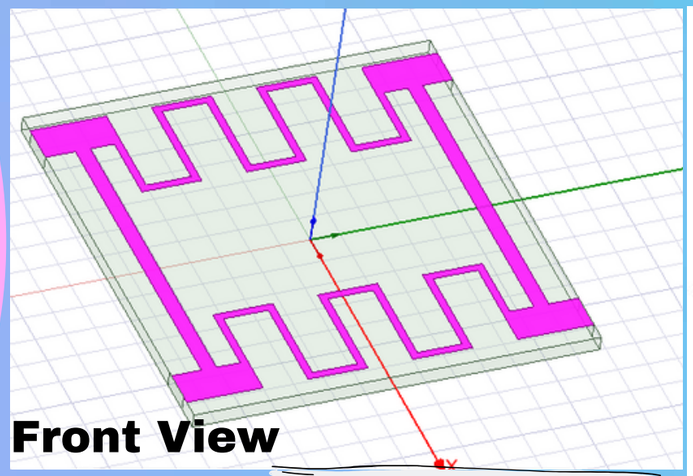
GUIDED BY:DR. P.RAJESWARI ASSOCIATE PROFESSOR/ECE

PRESENTED BY:AFRIN JUMANA.M | JEEVA GETZIE CYNTHIA.A | SRINITHI.A

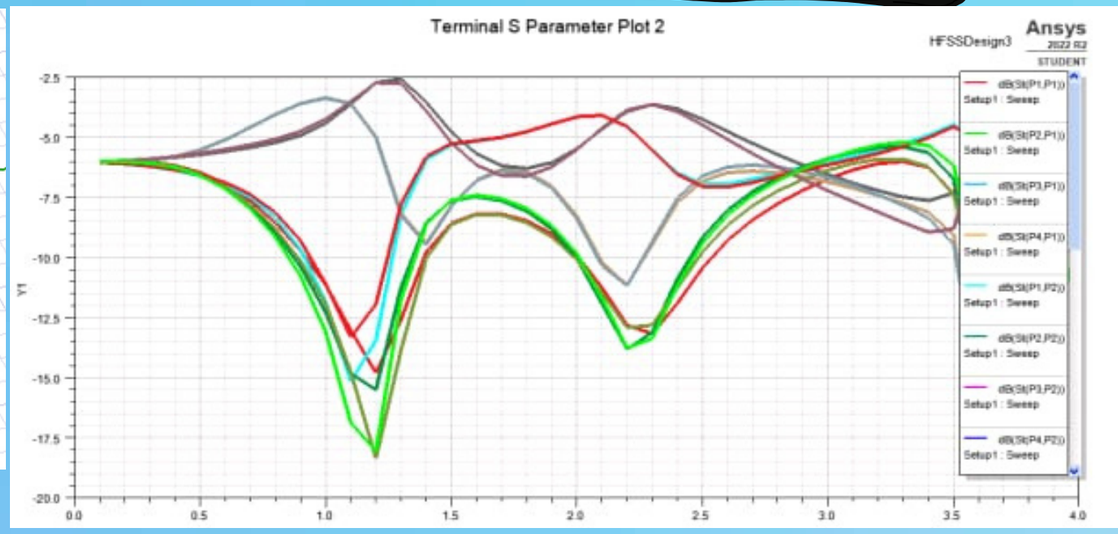
OBJECTIVES

- To design a quadrature hybrid coupler using slow wave structure.
- To compare the design of conventional coupler with proposed coupler design
- To measure the performance of proposed coupler with existing coupler design

PROPOSED DESIGN



RESULTS



SOFTWARE USED

HFSS
High Frequency Structure Simulator

DESIGN PROCESS

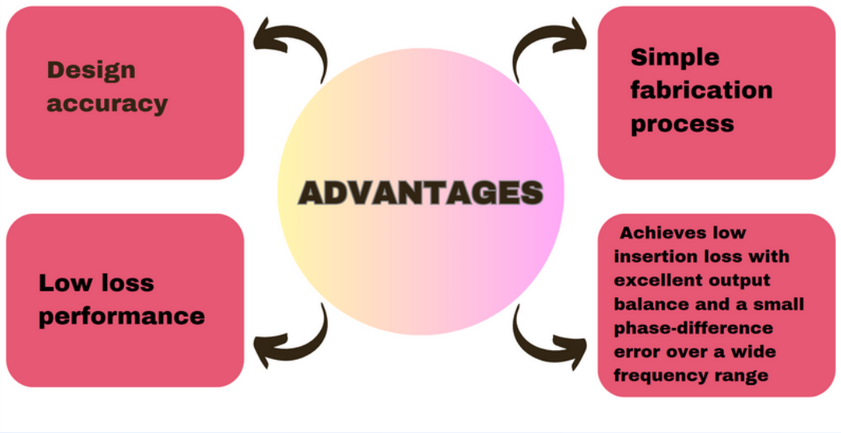
01 The coupler is designed on FR4 substrate

02 Normal ground is used on the back

03 Microstrip transmission lines are used

04 Shows dual band characteristics

ADVANTAGES



APPLICATIONS

- Power Divider
- Medical devices

CONCLUSION

- The design uses a artificial transmission line and a symmetrical layout of a perfect serpentine.
- With a relatively small 1.34mm x 1.36mm size, it achieves a relative bandwidth of at 1.3 GHz. Additionally, over the entire frequency band, a stable 90° phase difference between the coupling and transmission coefficients is obtained.