ASISH NAYAK
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Education Details

Program	Institute	Year	%/CGPA
M.Tech- RF and Microwave Engineering	Indian Institute of Technology, Tirupati	2024	8.81
B.Tech- Electronics and Telecommunication Engineering	Indira Gandhi Institute of Technology, Sarang	2021	7.87
12th (CBSE)	Mother's Public School	2017	75.80
10th (ICSE)	Venkateswar English Medium School	2015	86.67

Areas of Interest

- Interested in learning techniques to further reduce microwave circuits below mm wave level with reduced coupling which seems to be impractical for single passive component due to coupling effect.

Technical Proficiency

HFSS	:	Microwave Simulation Software
CST	:	Microwave Simulation Software
AWR	:	Microwave Office
MATLAB	:	Scripting language
C++	:	Programming Language
LTspice	:	Circuit simulation Software

Experience

- **Summer Internship (Organisation: IEEE AP-MTTS SBC IIT Kharagpur)**

  (**Guide :**Durga Prasad Purbey) **[2 months]**

  - A decoupled circular polarized 1x2 rectangular patch antenna array is demonstrated. The advantage of any circular polarized antenna is to be able to receive radiated power from any direction. Achieving circular polarization in patch antenna along with decoupling seems to be tedious, since achieving an axial ratio of 0dB is impractical in real world. A single element CP patch antenna is designed at 3GHz initially and then 1x2 array is implemented from it and the results were studied. The isolation between patch elements were 9.96dB initially but gets enhanced to 14.13dB after introducing the decoupling structure. The whole structure is designed on FR4 substrate of dielectric constant 4.4 and substrate height of 1.6mm. Copper is used as the conducting object. A via is used in decoupling structure of radius 0.6mm connecting the structure to ground plane.

Projects

- Reflectionless Filter design for Quadplexer system

(Guide : Dr. Abhishek Kumar Jha) **[8 months-Present]**

  - **Abstract :** Design of two reflectionless simultaneous bandpass and bandstop filter at using microstrip technology for Quadplexer System.

- BAW Quadplexer Design

(Guide : Professor Dr. M.V. Kartikeyan) **[6 months]**

  - **Abstract :** Designing of a BAW quadplexer that used two Duplexer of different bands for transmitting and receiving of four different band signals. The Duplexers are connected using T-junction.

- Designing of a 10GHz LNA for Amateur Radio Operation

(Guide : Professor Dr. M.V. Kartikeyan) **[6 months]**

  - **Abstract :** Designing of a 10GHz LNA for receiver of a 10 GHz homemade radio system.

- Designing of 2.4GHz microstrip combline bandpass filter.

(Guide : Professor Dr. M.V. Kartikeyan) **[6 months]**

- **Abstract :** A microstrip implemented combline filter is designed at a center frequency of 2.4GHz which is a modified version of Coupled line Bandpass filter with one end short-circuited to ground and other end connected to capacitor.

- Designing of 5-pole Chebyshev Impedance Transformer

(Guide : Professor Dr. M.V. Kartikeyan) **[6 months]**

- **Abstract :** Designing of Chebyshev transformer to match 50ohm line to 30 ohm load with maximum permissible SWR over passband being 1.25.

- Miniature wheelchair design using BCI(Brain-Computer Interface) Technology

(Guide : Dr. Ashima Rout) **[8 months]**

- **Abstract :** A miniature wheelchair is designed which is controlled using Neurosky Mindwave mobile headsets. The signals collected through the headset is filtered into two types, that is, "blinking" and "focus". The signal input is processed for different purpose using a software developed using Android Studio. "Forced Blinking" signal leads to start and stop of miniature wheelchair, "single blink" signal leads to forward movement and "Double blinking" leads to rotation in a clockwise manner and "Focus" signal leads to reverse movement. It is helpful for people with disabilities.

Relevant Courses

- ADVANCED ENGINEERING ELECTROMAGNETICS
- ADVANCED MICROWAVE ENGINEERING
- ANTENNA THEORY AND DESIGN
- RF TRANSCEIVER DESIGN
- WIRELESS COMMUNICATION
- DIGITAL VLSI DESIGN
- ANALOG VLSI DESIGN
- COMPUTATIONAL ELECTROMAGNETICS
- ADVANCED MICROWAVE LABORATORY
- RF-CAD LAB-BASED PROJECT
- RF-CAD AND CIRCUITS LABORATORY *
- ADVANCED TOPICS OF RF-CAD LAB-BASED PROJECT

Achievements

- GATE rank 547(EC) in 2023
- GATE rank 1295(EC) in 2022
- GATE rank 365(IN) in 2022
- GATE rank 6632(EC) in 2021
- Best performer in internship program organized by IEEE AP-MTTS SBC IIT Kharagpur

Hobbies or Interests

- Playing Flute, Outdoor games, playing video games