

Unit 7 - Week 5

Course outline

How does an NPTEL online course work?

Practice Assignment

Week 1

Week 2

Week 3

Week 4

Week 5

Lecture 19 : Microstrip Antennas (MSA)

Lecture 20 : Rectangular MSA

Lecture 21 : MSA Parametric Analysis-I

Lecture 22 : MSA Parametric Analysis-II

Lecture 23 : Circular MSA

Week-5 Study Material

Quiz : Assignment-5

Assignment-5 Solution

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Weekly Feedback

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Assignment-5

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-03-04, 23:59 IST.

1) As probe diameter of rectangular microstrip antenna (RMSA) increases, its input impedance locus moves:

2 points

- Downwards to the capacitive region
- Upwards to the inductive region
- Shifts right to the higher impedance values
- Shifts left to the lower impedance values

No, the answer is incorrect.
Score: 0

Accepted Answers:
Downwards to the capacitive region

2) When width of the RMSA is increased, then BW of antenna will _____ and gain will _____.

2 points

- Increase, decrease
- Decrease, decrease
- Increase, increase
- Decrease, increase

No, the answer is incorrect.
Score: 0

Accepted Answers:
Increase, increase

Common Data for Questions 3 to 6: A rectangular MSA is designed at 2.3 GHz on a substrate having $\epsilon_r = 2.2$, $h = 1.6$ mm and $\tan\delta = 0.02$.

3) The width of RMSA according to the formula given in the lecture should be approximately:

2 points

- 24 mm
- 38 mm
- 52 mm
- 64 mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
52 mm

4) The effective dielectric constant of the RMSA will be:

2 points

- 3.21
- 2.82
- 2.12
- 1.36

No, the answer is incorrect.
Score: 0

Accepted Answers:
2.12

5) The length of the RMSA will be approximately:

2 points

- 32.4 mm
- 42.6 mm
- 53.8 mm
- 64.2 mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
42.6 mm

6) The approximate feed-point location from the center for 50 Ω match should be :

2 points

- 20 mm
- 15 mm
- 9 mm
- 5 mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
9 mm

Common Data for Questions 7 and 8: A circular MSA is designed at 2.45 GHz on a substrate having $\epsilon_r = 2.55$, $h = 1.6$ mm, $\tan\delta = 0.0012$.

7) For a large ground plane, the circular patch radius will be approximately:

2 points

- 64.6 mm
- 42.8 mm
- 21.4 mm
- 10.2 mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
21.4 mm

8) To match it with 50 Ω , approximate feed point location from the center should be:

2 points

- 22.6 mm
- 17.4 mm
- 13.3 mm
- 7.8 mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
7.8 mm

Common Data for Questions 9 and 10: A suspended rectangular MSA has $L = 8$ cm and $W = 9$ cm. The substrate parameters are: $\epsilon_r = 4.4$, $h = 0.16$ cm and $\tan\delta = 0.02$, and the air-gap = 0.8 cm.

9) The effective dielectric constant is approximately:

2 points

- 3.32
- 2.84
- 1.92
- 1.15

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.15

10) The approximate resonance frequency of the antenna is:

2 points

- 2.3 GHz
- 1.6 GHz
- 1.0 GHz
- 0.5 GHz

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.6 GHz