Your Future Starts Here

Yusnita Rahayu <yusnita.rahayu@lecturer.unri.ac.id>

[Sinergi] #15757 Editor Decision

2 messages

Dr. Teguh Prakoso <teguhprakoso@elektro.undip.ac.id> Tue, Sep 13, 2022 at 3:51 PM
To: "Dr. Yusnita Rahayu" <yusnita.rahayu@lecturer.unri.ac.id>
Cc: Yoga Bayu Pradana <yoga.bayu1258@student.unri.ac.id>, Yoshihide Yamada <yoshihide@utm.my>

Journal Name: SINERGI
Article Title: DUAL-BAND FREQUENCY RECONFIGURABLE 5G MICROSTRIP ANTENNA

Dear Dr. Yusnita Rahayu:

We have reached a decision regarding your submission to SINERGI, "DUAL-BAND FREQUENCY RECONFIGURABLE 5G MICROSTRIP ANTENNA".

Our decision is: Revisions Required

Please revise your paper according to the reviewers' comments. List down revision that you have done in a list correction table. Send the revised paper and a list correction table file in Journal System and cc to andi@mercubuana.ac.id.

We look forward to hearing from you soon.

Best regards,

Dr. Teguh Prakoso
Telecommunication Engineering, Universitas Diponegoro
teguhprakoso@elektro.undip.ac.id

Reviewer A:

antenna microstrip --> microstrip antenna.

The authors should mention the type of the used diode, its characteristics especially at very high frequencies.

in Fig.1, 2 or 3, it is not clear, where the diode is located. The authors must give this information and explain according the results in Fig 4 and 5 for both cases.

what is the impact of figure 6 and 7 to the implementation for 5G?

Is the result in Fig. 10 the same as in Fig.4 and 5?
if it is a yes, why should be this repetition?

If we already used S11, VSWR is obsolete. Erase it.

Why did the authors only show S11 measurement for ON condition?
What about OFF condition.
What about the radiation diagram?

What is the analysis and comparison between measurement and simulation?

Reviewer C:

In general, this paper is not well written, especially the introduction section misses discussion on the research gaps from the related works and contribution of the work.
This paper needs the following corrections;
1- The introduction section misses the following corrections;
- The problem to be solved and its importance
- previous state of the art
- contribution of the paper or new ones in this paper
- paper organization

2- The continuation of the literature review in the introduction section is not organized. For example, the literature on microstrip antenna should be presented before multiband and reconfigurable antennas.

3-Research gaps from previous designs are not presented. A research gap from [14] should be presented because the proposed design is very similar to the design in [14].

4- Design specifications such as return loss, gain and bandwidth for each band should be presented in the antenna design section

4- The contribution of the proposed design is not clearly presented.

5- The significance of the results is not clearly discussed.

The results in Table 2 should be discussed regarding the fulfilment of 5G requirements.

The bandwidth for each band should be evaluated and included in Table 2 because the bandwidth requirement is one of the important parameters for 5G requirements.

Reviewer D:

1. There is no explanation for Figure 2 dan Figure 3. Please add

2. Please add parametric studies that influence the lower frequency and the higher frequency.

3. Please combine the simulation and measurement results in figure 12. Please analyze the differentiation between simulation and measurement.

4. Please pay attention to the grammar.

5. Please give the Table comparison with other research

6. Please make a 2-D Radiation pattern in the E-plane and H-plane. Complete with Co-polarization and Cross-polarization.

7. How about the gain antenna.

SINERGI
http://email-link.mercubuana.ac.id/ls/click?upn=x9A-2BPIfI-2BzF7JGDDc4rnKyGIaWQWVWKwGtn4vR8X6-2FIhbS-2BGFtQ5wONJzWtGjVXnMYdk2jkIHC5PQ75ZHxLR5A-3D-3DI8c1_mz4K-2B8YdBiAXyCSbQB3eu-2B4JCm-

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http://email-link.mercubuana.ac.id/ls/click?upn=x9A-2BPIfl-2BzF7JGDDc4rnK04HBQujdnDzw32ximHAD5AVZkIWZ2pFH0IYKWx6QO019fPSGIzVZeD0RJ3qHdf7ZW1n1tk7-2B16sfKyqv1qOCWs-3DYn5t_mz4K-2B8YdBiAXyCSbQB3eu-2B4JCm-2BrtGx7PKTLvM5lSBsQw9r90KfzHVcBJ8LG7DL0ks9K2K79mKa9228y2r-2FVcs8K1jWyiyLHRzkCuZHpMSS2vDtUgqDirBjExPQy6uGwyQk3JlEfxIbbUqaqRIi1o99ozEHIYilG8FilMXOoRZxBd5KCySIrnfsYzmd5ljy5Sd-2F6otW2OEooCLyWBH4hkIcOT41DNYJGsFnPO8Pc6WY-3D

Yusnita Rahayu <yusnita.rahayu@lecturer.unri.ac.id> Tue, Sep 13, 2022 at 5:45 PM
To: Yoga Bayu Pradana 1607111258 <yoga.bayu1258@student.unri.ac.id>

[Quoted text hidden]

Response to Reviewer Comments

Journal Name: Sinergi

Article Title: Dual-Band Frequency Reconfigurable 5G Microstrip Antenna

No.	Reviewer Comments	Action
	Reviewer A	Thanks for the comments. All the revised sentences are highlighted on the paper in yellow color.
1	✓ Antenna microstrip --> microstrip antenna. ✓ The authors should mention the type of the used diode, its characteristics especially at very high frequencies. ✓ in Fig.1, 2 or 3, it is not clear, where the diode is located. The authors must give this information and explain according the results in Fig 4 and 5 for both cases. ✓ what is the impact of figure 6 and 7 to the implementation for 5G? ✓ Is the result in Fig. 10 the same as in Fig.4 and 5? if it is a yes, why should be this repetition? ✓ If we already used S11, VSWR is obsolete. Erase it. ✓ Why did the authors only show S11 measurement for ON condition? What about OFF condition. What about the radiation diagram? ✓ What is the analysis and comparison between measurement and simulation?	✓ It has been corrected in abstract ✓ This research uses the MA4AGBL912 PIN diode because its suitable for high frequency uses up to 40 GHz. It is already mentioned in Part I. Introduction (para.9 pg 2) ✓ It has been explained on page 3 that the diode in simulation is created by using a lumped element located between the main and the additional radiation element, as shown in Fig 2. ✓ The gain of the 5G antenna must be high enough to achieve high radiated power since this antenna works at a very high frequency (28 and 38 GHz) with atmospheric/rain attenuation will affect the performance. Figures 6 and 7 show the directivity gain of the simulated antenna with a gain value of 8.36 to 8.51 dBi, which is high enough for 5G. ✓ Fig 10 is for comparison between Fig 4 and Fig 5. This has been corrected by removing fig 10 ✓ VSWR has been removed ✓ The measurements for the OFF condition have been added. The paper mainly focused on frequency changes. The radiation pattern measurement is not done due to some limitations in the measurement facility

		✓ The reconfigurable antenna can work appropriately given the different conditions where in the ON condition, the working frequency is 28 and 38 GHz. In contrast, in the OFF condition, the working frequency is only 38 GHz. However, some frequencies in the fabricated antenna are shifted due to many factors like the fabrication process, antenna soldering, and port feeding—the measurement process can also affect the antenna result. For example, the frequency shifted around 3 GHz and 2 GHz for the working frequency of 38 GHz resulting in ON conditions, the working frequency is 28 GHz and 35.68 GHz, and in OFF conditions, the working frequency shifted from 38 GHz to 36.25 GHz.
	Reviewer B	
	In general, this paper is not well written, especially the introduction section misses discussion on the research gaps from the related works and contribution of the work. This paper needs the following corrections;	Thanks for the helpful comments.
1	The introduction section misses the following corrections; ✓ The problem to be solved and its importance ✓ previous state of the art ✓ contribution of the paper or new ones in this paper ✓ paper organization	✓ The problem to be solved is already stated in the introduction where The 5G network that uses high frequency has the emitting waveform that is sufficiently dense so that the transmitted wave is very vulnerable to weather [5]. So the multiband antenna is used because Multiband supports the use of different frequencies that can produce a good gain and radiation pattern. This multiband antenna can synchronize electromagnetic signals at all frequencies, supported primarily at the desired frequency [6]. Multiband antennas are also used because they can replace two or more antennas that are separated into one antenna only, reducing the

		size of the installation, cost, and complexity of the antenna [7]. ✓ Few literature reviews related to this research have been stated in the introduction ✓ The contribution also stated that the antenna in 5G frequency could be reconfigured from single band 38 GHz to dual-band 28 and 38 GHz, given different conditions. ✓ The paper organization has been added
2	The continuation of the literature review in the introduction section is not organized. For example, the literature on microstrip antenna should be presented before multiband and reconfigurable antennas.	The introduction's literature review on the microstrip antenna has been moved to be presented first.
3	Research gaps from previous designs are not presented. A research gap from [14] should be presented because the proposed design is very similar to the design in [14].	The proposed design in this paper and the proposed design in research [14] are different. The [14] uses a T-shaped slot antenna array placed on the top of mobile phone PCB with the result obtained is a single band of 28 GHz while the diodes are OFF and 38 GHz while the diodes are ON. The research [14] also mainly focused on beam steering. For this paper, the main focus is frequency reconfigurable with an antenna design is two rectangular patches with a plus (+) mark slot. The results on this antenna are 28 GHz and 38 GHz in ON condition and 38 GHz in OFF condition.
4	Design specifications such as return loss, gain and bandwidth for each band should be presented in the antenna design section	Design specification has been added in table 2.
5	The contribution of the proposed design is not clearly presented.	The contribution of the proposed design is to obtain the frequency that can be reconfigured using diodes given some conditions to change the single band frequency into dual band frequency
6	The significance of the results is not clearly discussed.	The significance of the results is on the reconfigured frequency that changed from single band to dual band by giving some conditions.

7	The results in Table 2 should be discussed regarding the fulfilment of 5G requirements. The bandwidth for each band should be evaluated and included in Table 2 because the bandwidth requirement is one of the important parameters for 5G	The result has been discussed on page 4 for the S11 result and gain where the S11 result for 5G where the operating frequencies are 28/38 GHz and 38 GHz satisfy the minimal S11 must be ≤ 10 dB and gain must be high enough where the gain is higher than 8 dBi. The bandwidth has been added to the comparison table of the simulation result.
	Reviewer C	
1	There is no explanation for Figure 2 and Figure 3. Please add	The explanation is added on Page 3.
2	Please add parametric studies that influence the lower frequency and the higher frequency.	Parametric studies is added in the table 3 on Page 3.
3	Please combine the simulation and measurement results in figure 12. Please analyze the differentiation between simulation and measurement.	The combination of simulation and measurement results is presented in table 5. The analysis of the differentiation between simulation and measurement is described on page 8.
4	Please pay attention to the grammar	
5	Please give the Table comparison with other research	The comparison table is added in table 6.
6	Please make a 2-D Radiation pattern in the E-plane and H-plane. Complete with Co-polarization and Cross-polarization.	The 2-D Radiation pattern in E-Plane and H-Plane with Co-Polarization and Cross-Polarization is presented in page 5 and page 6.
7	How about the gain antenna.	The gain of the simulated antenna is mentioned on page 5 and 6.