

RF ANALYSIS REPORT

VSTP52585_OEMAIN_Analysis

July 24th 2023

Prepared for

VOLANSYS

By

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Table of Content

1. Scope of work	4
2. Summary	5
3. Front End _NFC	6
3.1 Net path: Line 6 (Sec_1)	6
3.2 Net path: Line 6 (Sec_2)	9
3.3 Net path: Line 6 (Sec_3)	12
3.4 Net path: Line 6 (Sec_4)	15
4. NFC as Antenna:	18
4.1 Netpath J1.1:	18
4.2 Netpath J1.2:	20
5. Conclusion	22
6. Disclaimers	22
7. Document History	22

Table of Figures

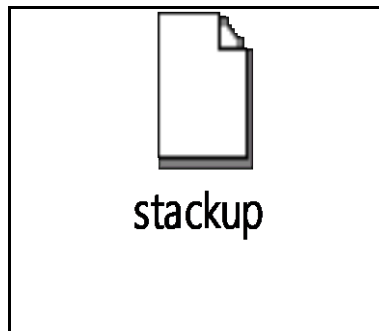
Fig: 1: J1.2_Via_Layout.....	6
Fig: 2: J1.2_Via_Layout_3D View.....	7
Fig: 3: J1.2_Via S-Parameter.....	8
Fig: 4: J1.6_Via_layout.....	9
Fig: 5: J1.6_Via_3D View.....	10
Fig: 6: J1.6_Via_S Parameter.....	11
Fig: 7: J1.1_via_layout.....	12
Fig: 8: J1.1_via_layout_3D View.....	13
Fig: 9: J1.1_via_S parameter.....	14
Fig: 10: J1.5_via_layout.....	15
Fig: 11: J1.5_via_layout_3D View.....	16
Fig: 12: J1.5_via_S parameter.....	17
Fig: 13: J1.1_3D Radiation Pattern.....	18
Fig: 14: J1.1_Gain.....	19
Fig: 15: J1.2_3D Radiation Pattern.....	20
Fig: 16: J1.2_Gain.....	21

1. Scope of work

Scope of work is to carry out **RF analysis** for the Net Path: Line 6 from Front End_NFC.

TOOL USED

- Cadence AWR



Stackup for analysis is provided by customer



OEMAIN

VSTP52585

RF

Rev: 1.0

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2. Summary

Simulation for **Net Path: Line 6** are carried out. Optimum Results are captured

3. Front End _NFC

3.1 Net path: Line 6 (Sec_1)

Waveform for Line 6 with J1.2(TX1) as Driver and as Port 1(Via) as Receiver with the Operating frequency of 13.56 MHz.

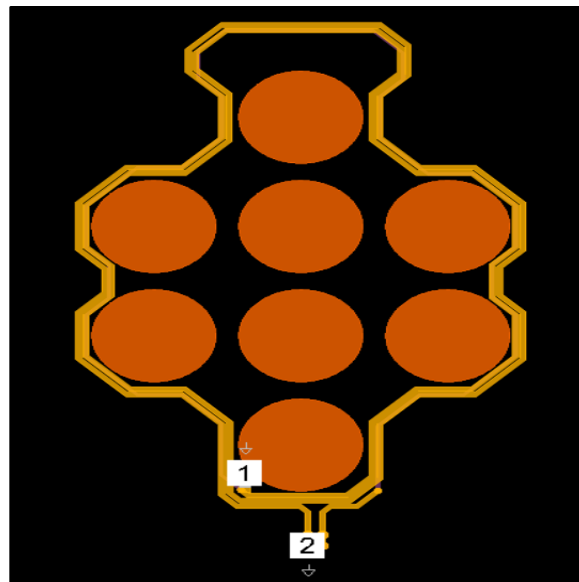


Fig: 1: J1.2_Via_Layout

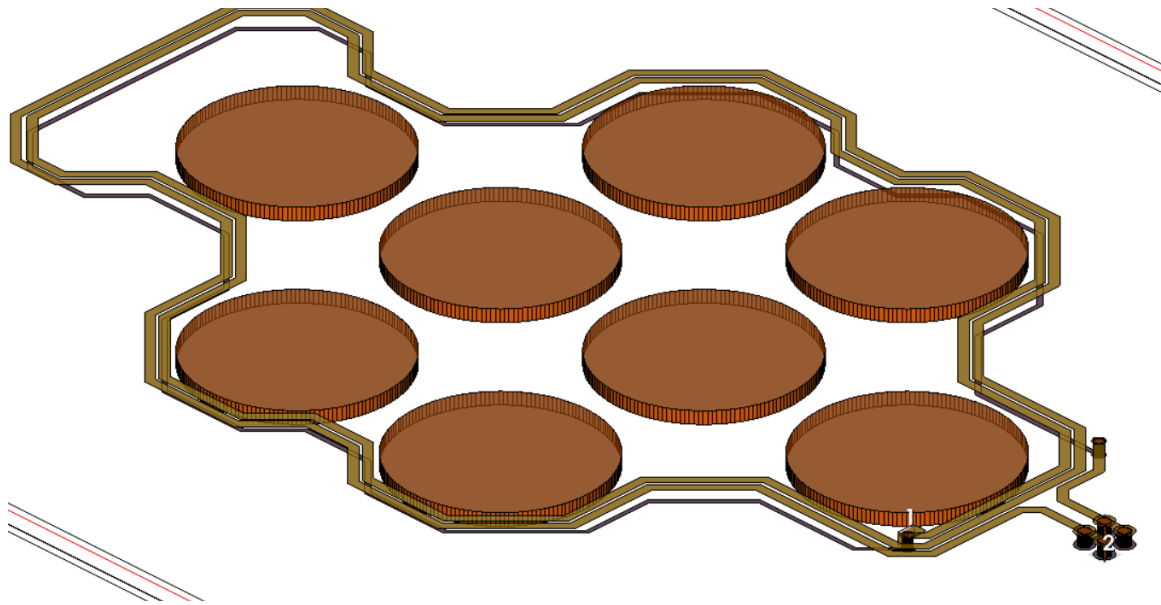


Fig: 2: J1.2_Via_Layout_3D View

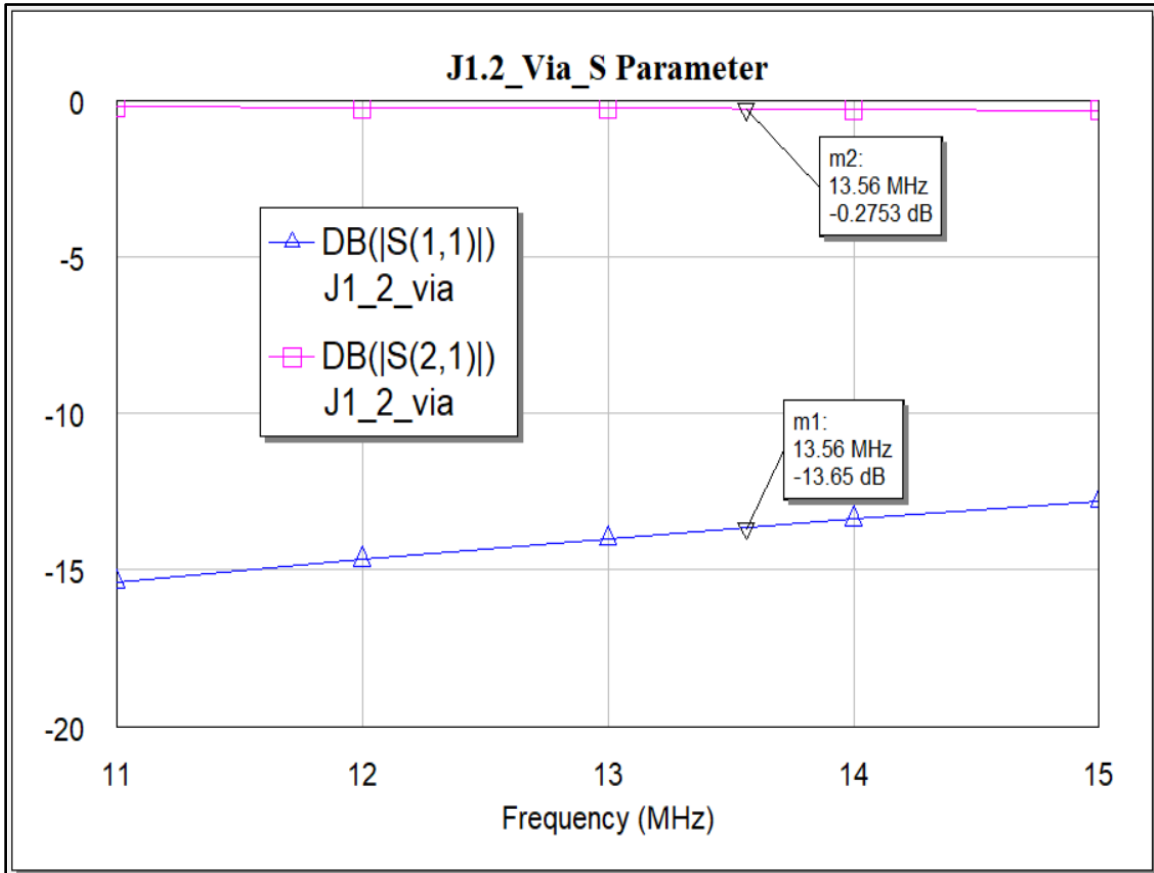


Fig: 3: J1.2_Via S-Parameter

3.2 Net path: Line 6 (Sec_2)

Waveform for Line 6 with J1.6(TX1) as Driver and as Port 2(Via) as Receiver with the Operating frequency of 13.56 MHz.

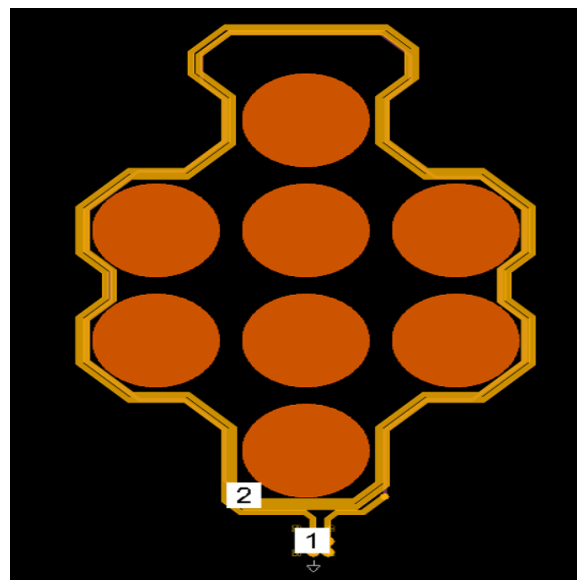


Fig: 4: J1.6_Via_layout

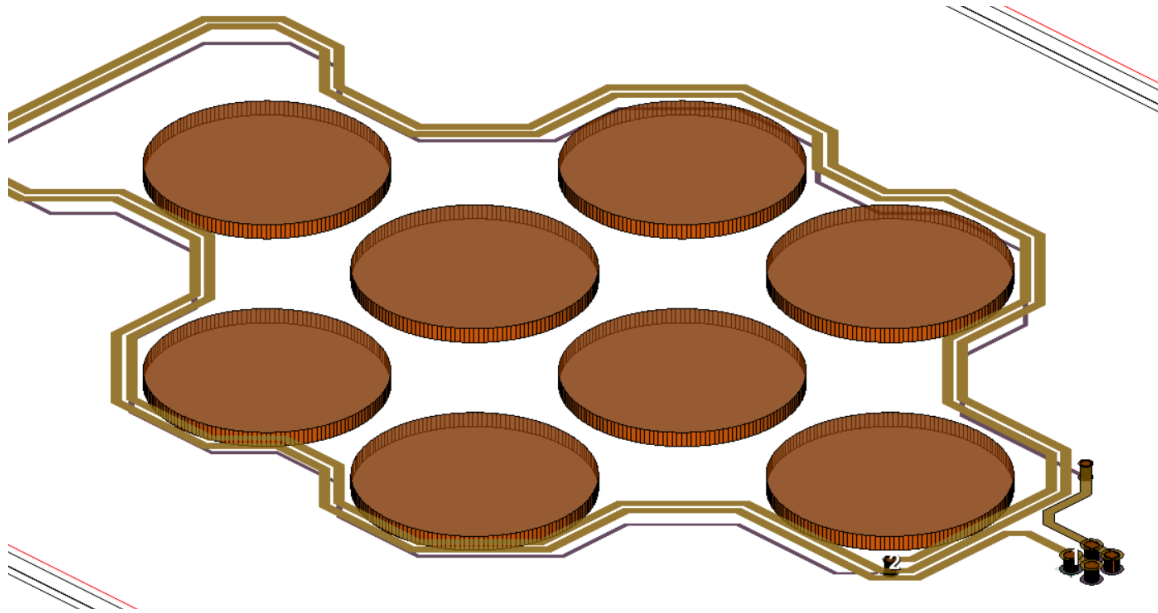


Fig: 5: J1.6_Via_3D View

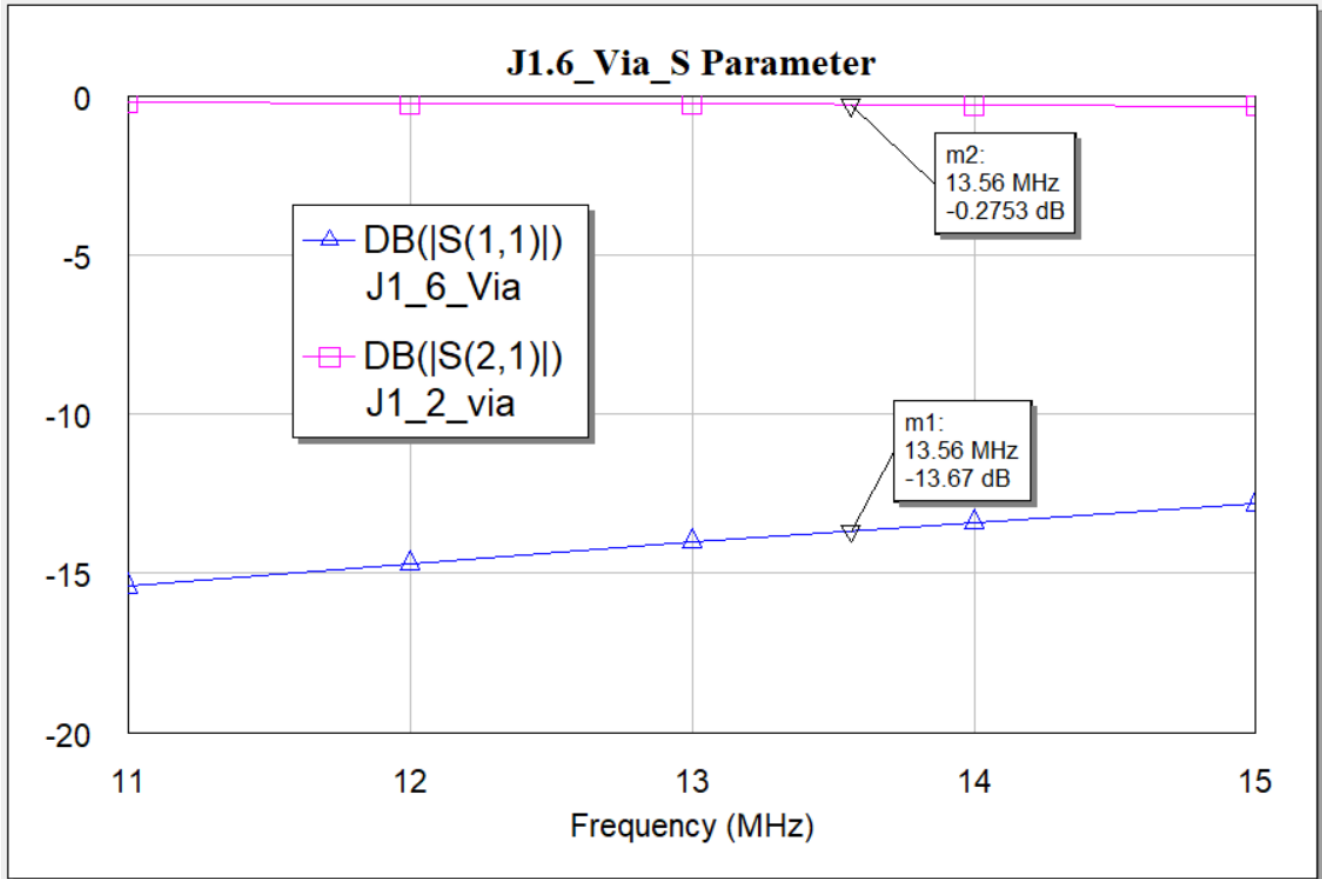


Fig: 6: J1.6_Via_S Parameter

3.3 Net path: Line 6 (Sec_3)

Waveform for Line 6 with J1.1(TX1) as Driver and as Port 1 (Via) as Receiver with the Operating frequency of 13.56 MHz.

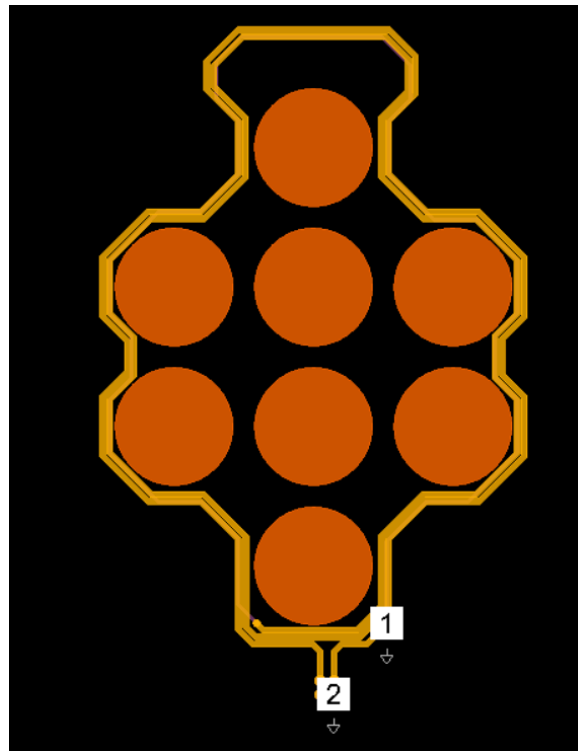


Fig: 7: J1.1_via_layout

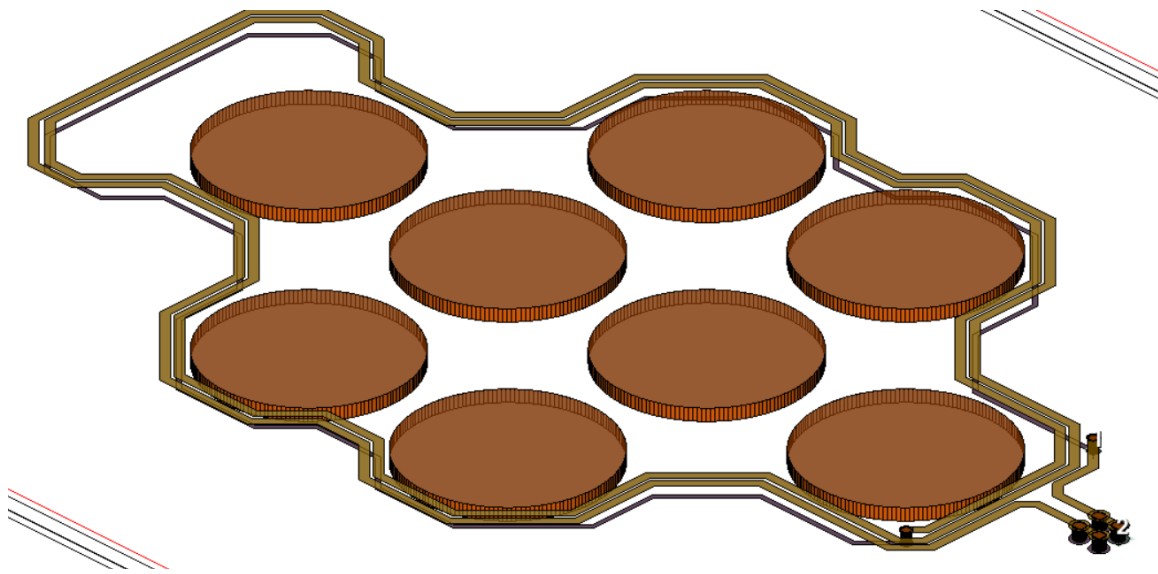


Fig: 8: J1.1_via_layout_3D View

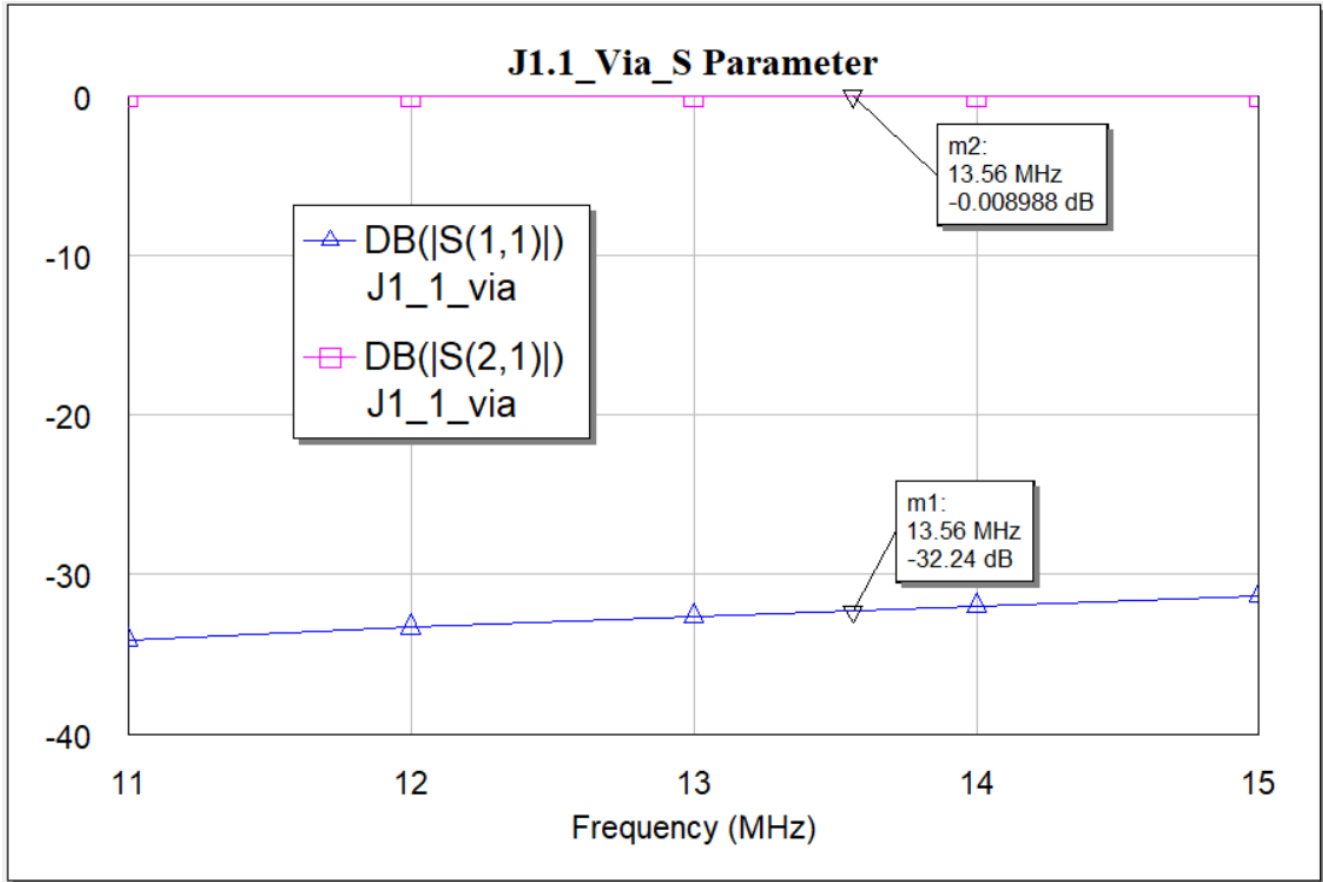


Fig: 9: J1.1_via_S parameter

3.4 Net path: Line 6 (Sec_4)

Waveform for Line 6 with J1.5(TX1) as Driver and as Port 1 (Via) as Receiver with the Operating frequency of 13.56 MHz.

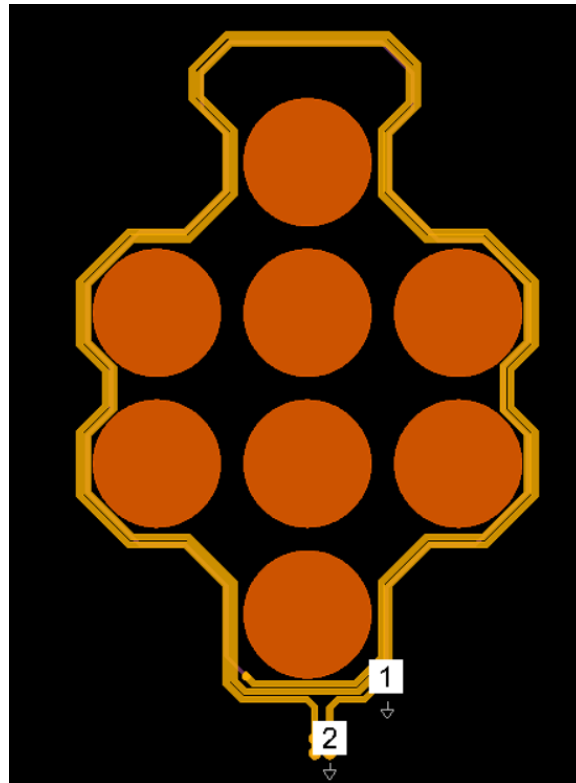


Fig: 10: J1.5_via_layout

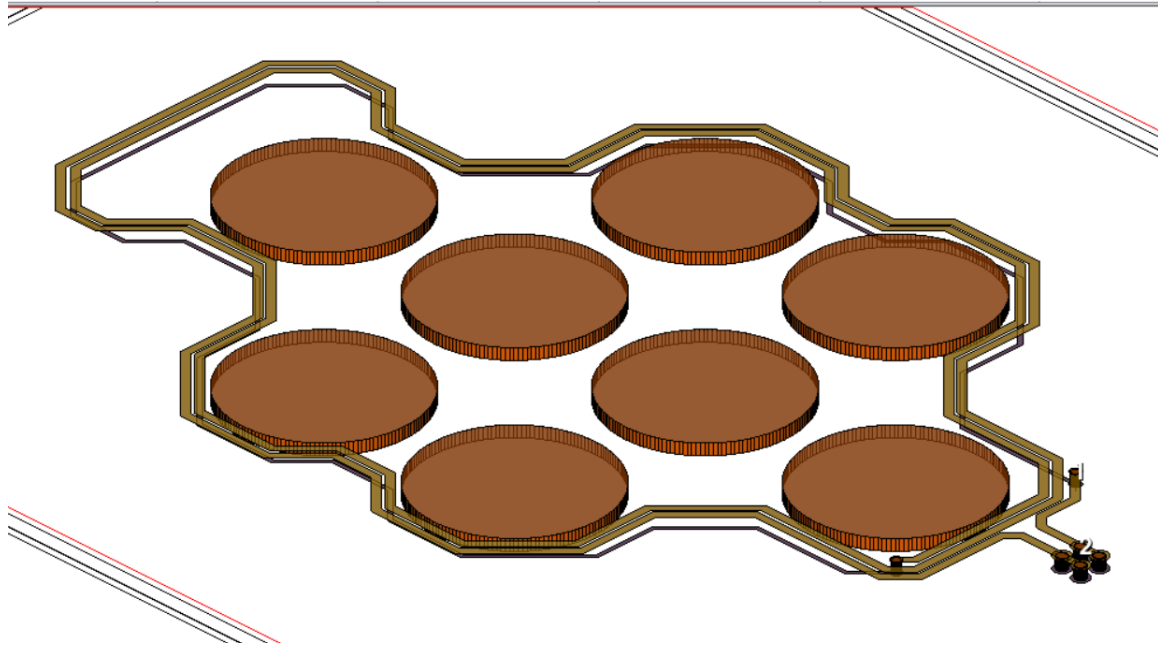


Fig: 11: J1.5_via_layout_3D View

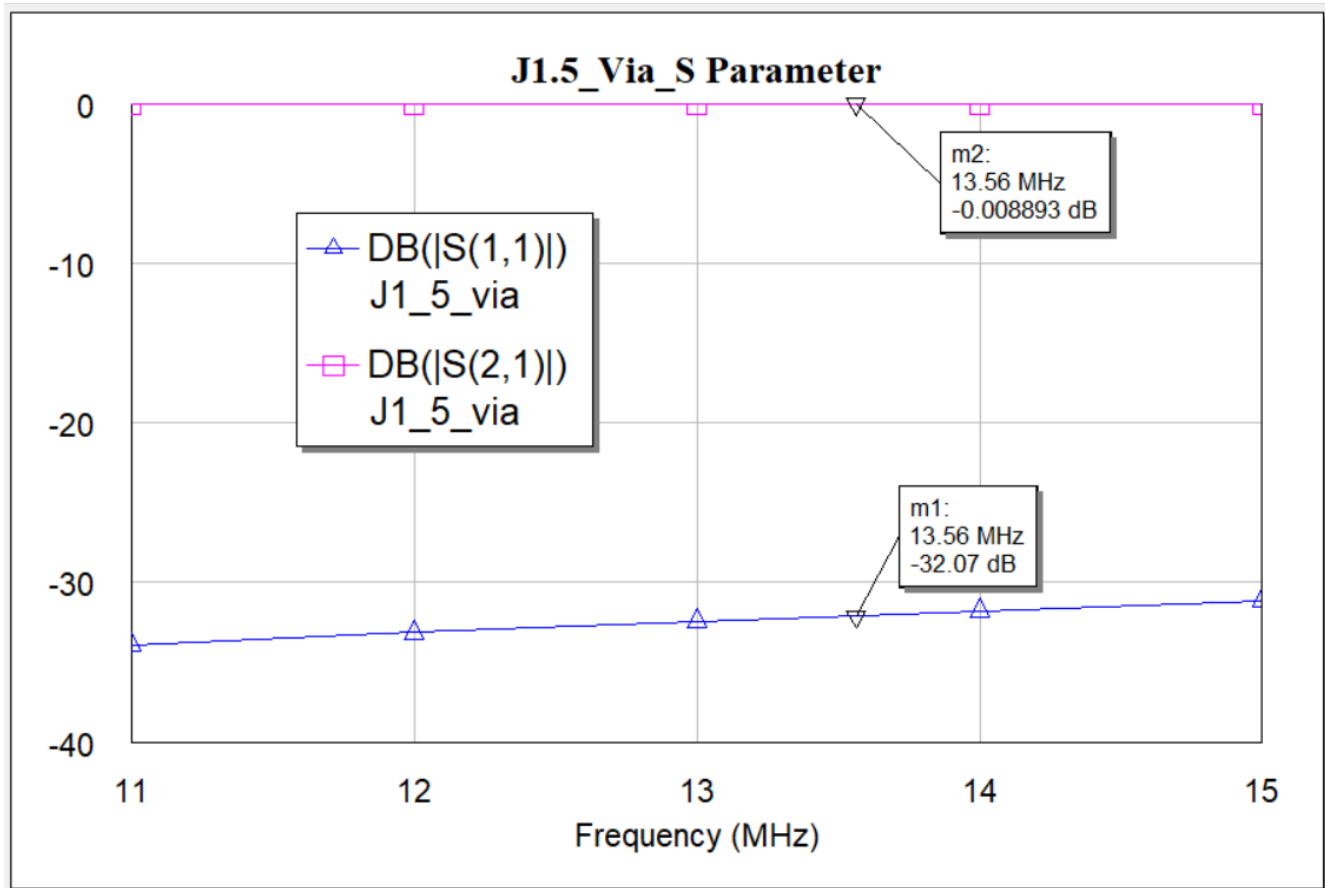


Fig: 12: J1.5_via_S parameter

4. NFC as Antenna:

4.1 Netpath J1.1:

The 3D Radiation Pattern for Line 6 with J1.1 as Transmitter 1 with the Operating frequency of 13.56 MHz.

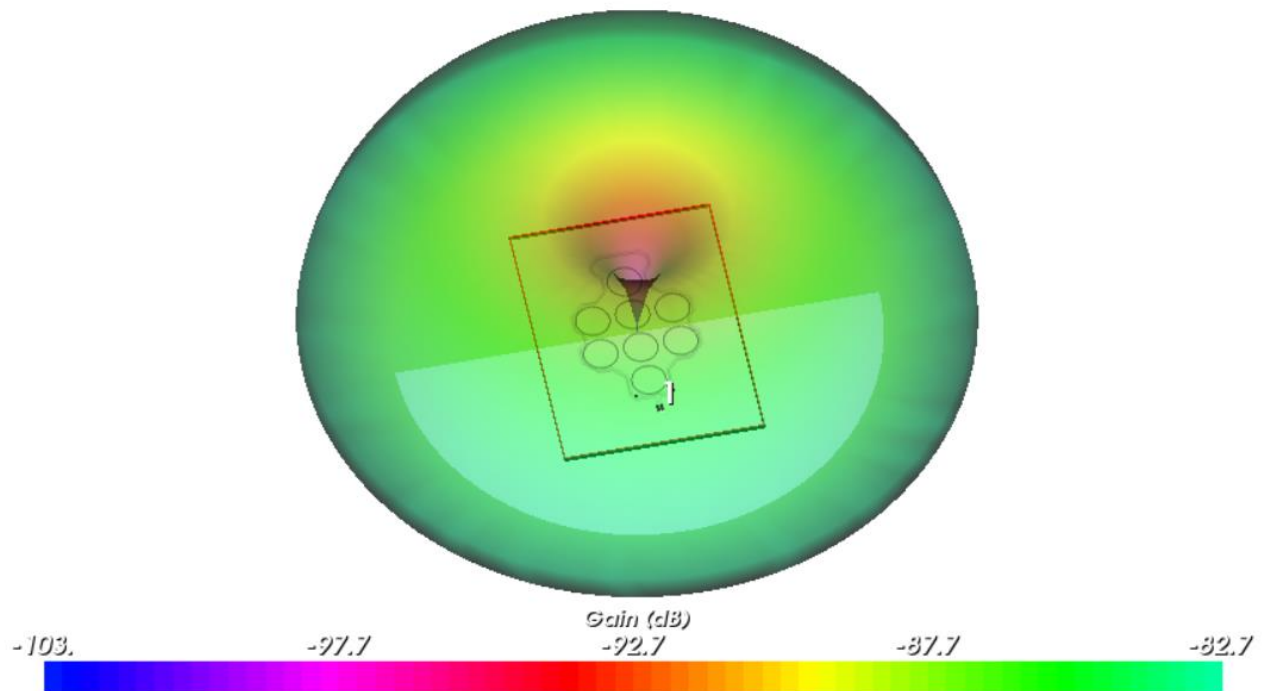


Fig: 13: J1.1_3D Radiation Pattern

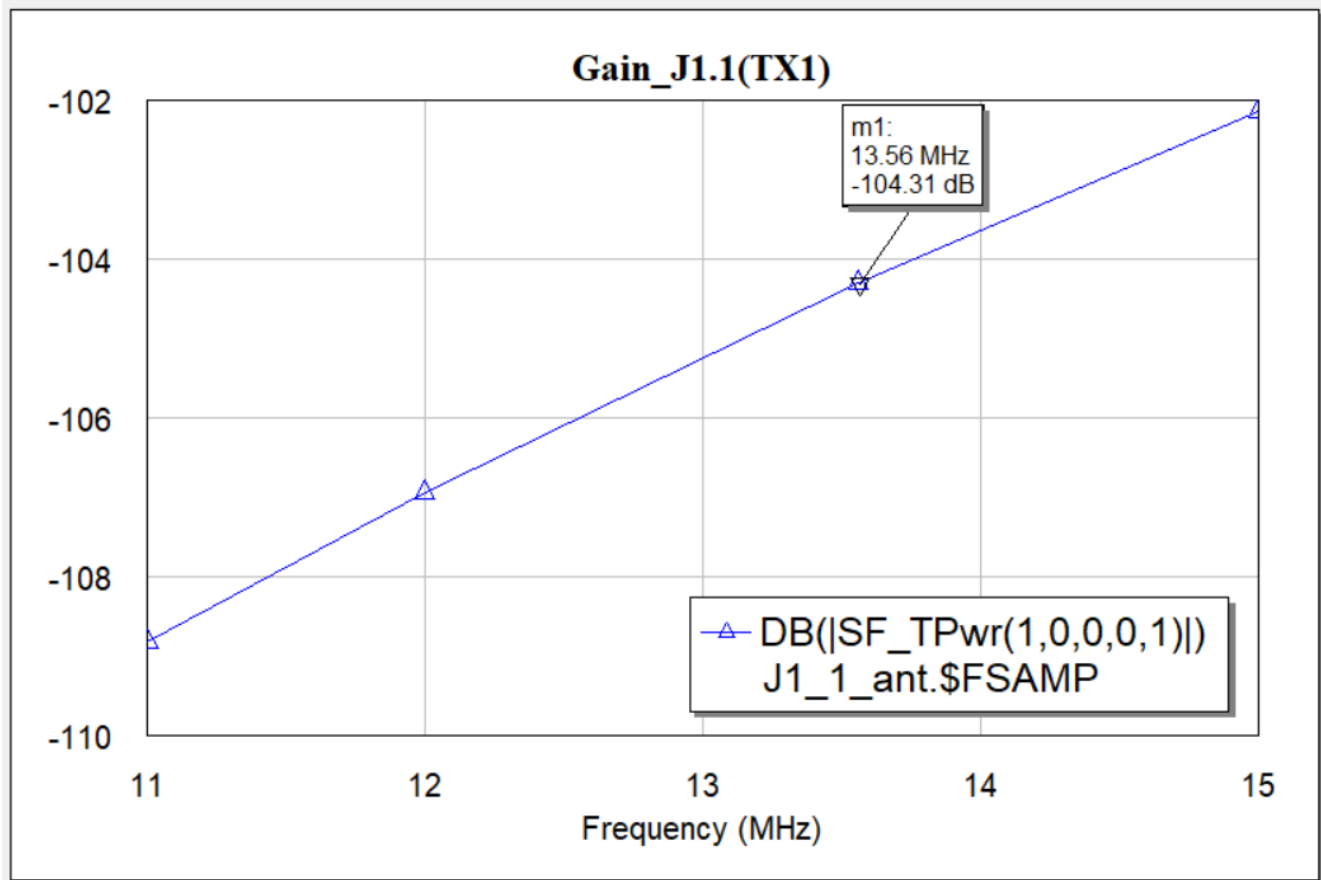


Fig: 14: J1.1_Gain

4.2 Netpath J1.2:

The 3D Radiation Pattern for Line 6 with J1.2 as Transmitter 2 with the Operating frequency of 13.56 MHz.

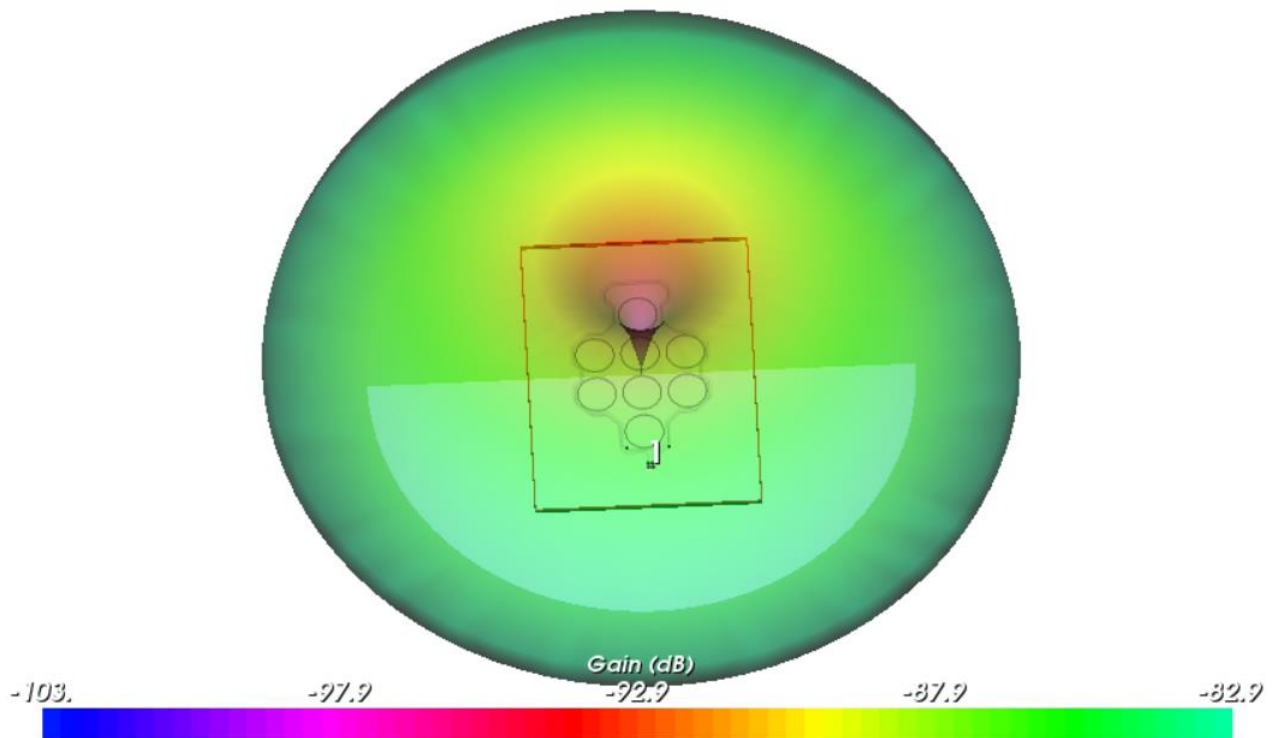


Fig: 15: J1.2_3D Radiation Pattern

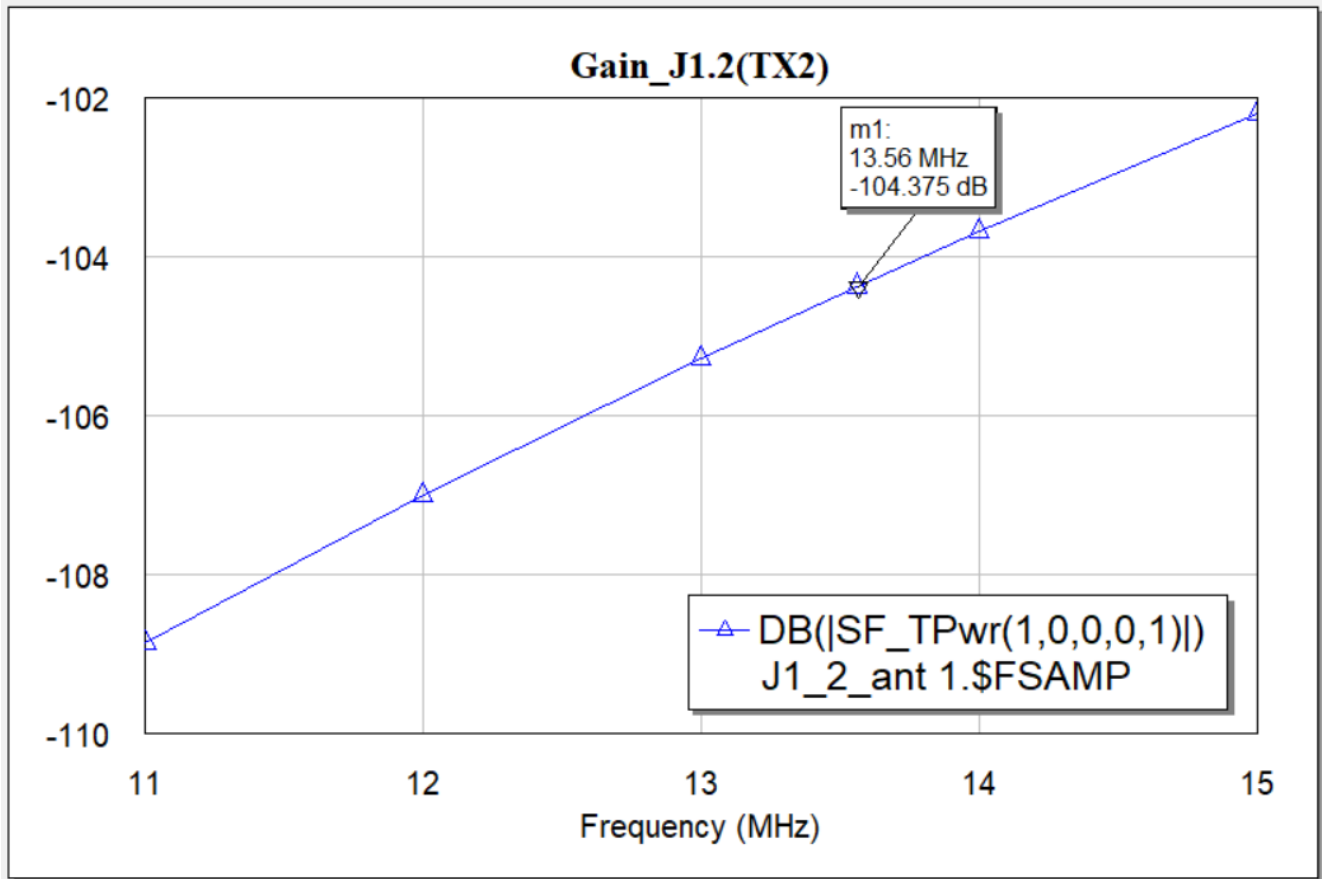


Fig: 16: J1.2_Gain

5. Conclusion

- Simulation were extensively performed with the provided inputs and the best suited transmission paths results are captured.
- The **RF** analysis for specified net paths meets the general specifications.
- The NFC net path the open ended transmitters give -103dB at 13.56MHz which means Zero power is delivered.

6. Disclaimers

Accuracy of analysis depends on the Inputs.

7. Document History

Rev	Date	Author	Remarks
1.0	21-Jul-2023	Manjuladevi.S, Pragathi.M.A Rajasekaran.D	Creation of the document
	21-Jul-2023	Suresh N	Document Review



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