

Figure 4: 2D rectangular plot for gain of conical horn using HFSS at 12 to 18GHz

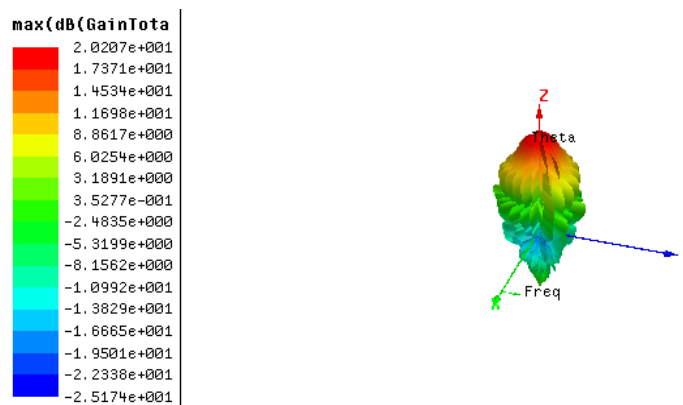


Figure 5: 3D polar plot for gain 12 to 18GHz of conical horn antenna using HFSS

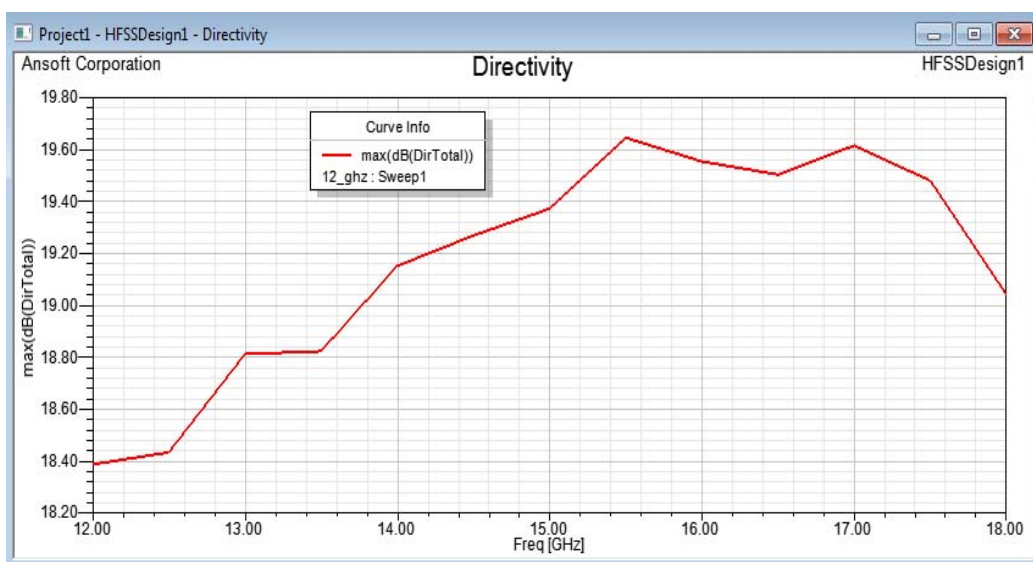


Figure 6: 2D rectangular plot for directivity of conical horn using HFSS at 12 to 18 GHz

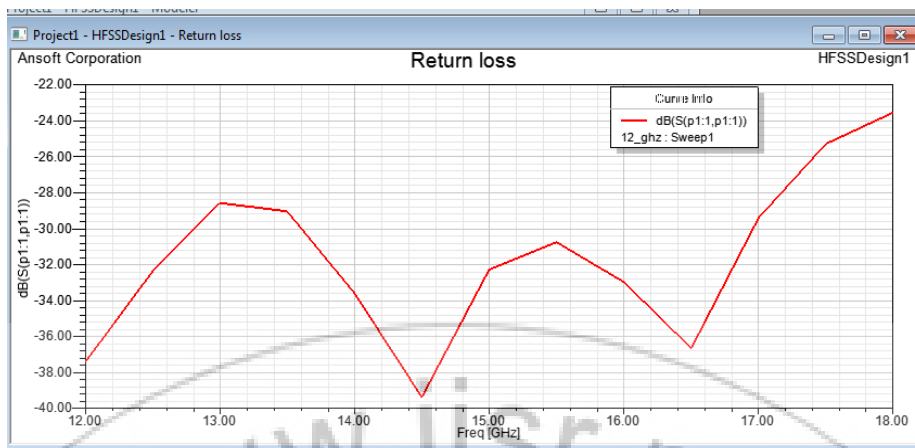


Figure 7: 2D rectangular plot for return losses of conical horn using HFSS at 12 to 18GHz

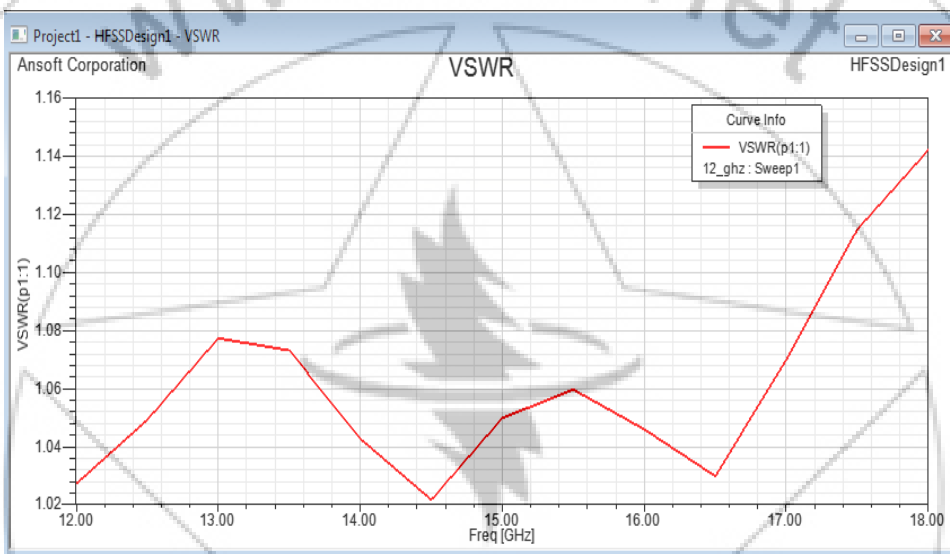


Figure 8: VSWR plot for Designed conical horn Antenna using HFSS at 12 to 18 GHz

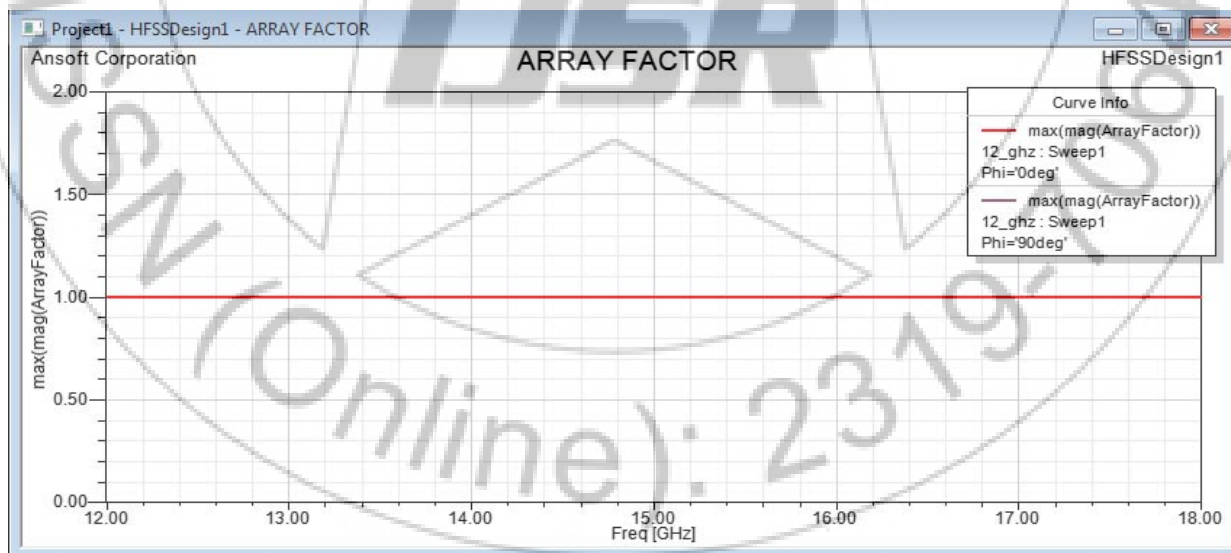


Figure 9: Array Factor plot for Designed conical horn Antenna using HFSS at 12 to 18GHz

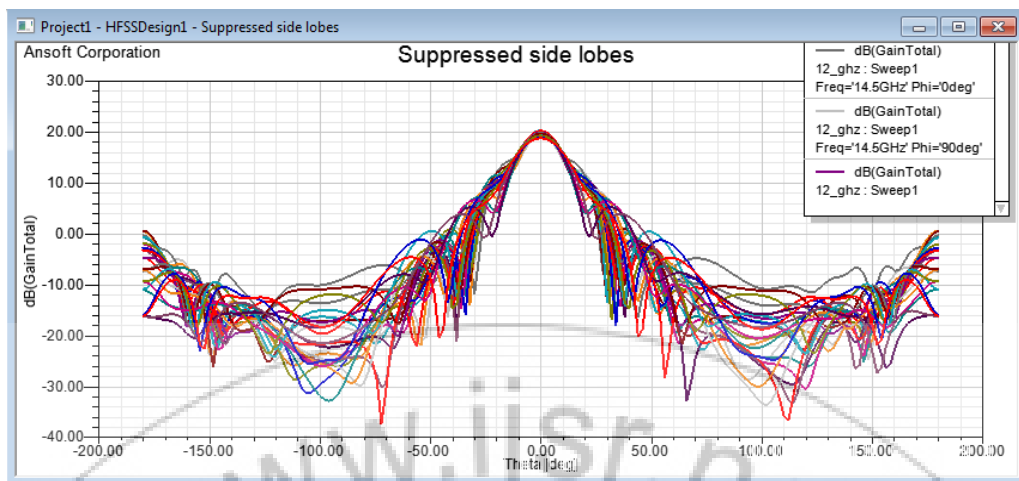


Figure 10: 2D rectangular plot for conical horn side lobes of level using HFSS at 12 to 18GHz

5. Conclusion

This paper discusses the Design and Analysis of Conical Horn Antenna for Ku-Band Applications of 12-18GHz conical horn antenna with high gain, suppressed side lobes, good VSWR. All requirements for space application have been tried to meet according to international space standards. This conical horn antenna can be used in space applications. The procedure is straightforward, and determines the physical dimensions of a conical horn that determine the performance of the antenna. To examine the accuracy of this design procedure, antenna was designed over 12 to 18GHz with specific electromagnetic features. The measurement results showed that the antenna's gain is 18.75 to 20.20dB, directivity is 18.40 to 19.64dB, VSWR < 1.14, return losses level of -38dB, suppressed side losses level of -38dB and array factor is 1. These measurement results confirmed the results of the simulations and satisfied the design requirements.

6. Future Scope

For further reduction in size of an antenna, the present work is done on Meta materials.

7. Acknowledgement

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