Design of a Broadband EMI filter to Suppress the Noise from the Power Supply

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Abstract - We present the design of an EMI filter to mitigate the electrical noise from the power supply over a broadband of a few tens of KHz to 18GHz. Admitting that our approach is not apart from the standard technology of EMI filter, it is worth checking out how we can implement the filter that meets the challenging spec. on band of operation. The function of the EMI filter is well-depicted by its performance on the CE(Conducted Emission) and RE(Radiated Emission) suppression through tests which convince us of its application to power supplies of land, water and flying vehicles.

1. Introduction

The power supply is essential to any electrical or electronic equipment. Ideally, since the power supply is the source of energy shared by all the components of an electrical product, it should have nothing that causes any degradation in the total quality[1].

2. Design and its results

The power supply is known to send the normal mode(NM) and common mode(CM) noise. The following is the NM and CM chokes preventing NM and CM noise currents.

3. Conclusion

We implement an broadband EMI filter working well.

References