

Enhanced the Efficiency of Electronics Circuit by using Line Impedance Stabilization Network

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Abstract: A Line Impedance Stabilization Network (LISN) is a crucial tool in the field of electromagnetic compatibility (EMC) testing and measurement. Its primary purpose is to ensure that conducted emissions from electrical and electronic devices are accurately measured in a controlled and standardized manner. After both circuit simulation in LTSpice firstly input noise simulation without LISN in first circuit and after that second circuit simulation in which we simulate input noise simulation with LISN we reached on the final conclusion is that by stabilizing the impedance of the power supply line, LISNs help filter out external interference and noise, allowing for precise measurements of the emissions generated by the DUT. They provide a standardized impedance interface between the device under test (DUT) and the measuring equipment, ensuring consistent and repeatable EMC testing results. We get desired result after simulation when we analysis both circuit simulation in details we get 33% improvement in frequency, noise decreases in terms of frequency and we get 3% improvement in power at output in LISN applying circuit.

Keywords: Advanced Design System (ADS), Artificial Mains Network (AMN), Radio Frequency (RF), Line Impedance Stabilization network (LISN), Electromagnetic Compatibility (EMC), Electromagnetic Interference (EMI)

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