

Master 2012

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Design of a Broadband Low-Noise Microwave Amplifier.

ABSTRACT - Masterthesis

Microwave communication is the backbone of modern communication systems. These systems usually operate on various frequency bands simultaneously. That's why the demand for broadband operation arises for the different system components. The objective of this thesis is to design a broadband low-noise microwave amplifier using the BFP 420 transistor in the range of 1 GHz to 4 GHz.

First, a narrow line low noise amplifier for center frequency 2.2 GHz is designed. The circuit is tuned to achieve required gain and unconditional stability. Later on, the broadband operation is realized using a suitable feedback network.

All the simulations and results are taken using AWR microwave office suite. Later on, the results are verified using vector network analyzer. This thesis report delivers the main idea to design a low noise microwave amplifier.