

Abstract

The key factor of providing good performance for any electronic device is by eliminating unwanted reflections those lead to waste energy and, therefore, affect circuit stability. This is done by finding an approach to match both of the circuit's input and output to other in-between connected elements. Amplifiers fall within this category, in this paper, our target is to match the BFR92A transistor to 50ohms input and output loads to achieve 11dB gain at 1.5GHz with 100MHz of bandwidth that it can be used for RF low noise amplifiers. In this research, different approaches were used to utilize and achieve our work requirements by, primarily, using MicroWave Office software (M.W.O) to calculate S-Parameters and simulate the amplifier performance. In the first design approach, intermediate line and quarter-wave plate have been used and the results are accurately discussed. Another way to design was by utilizing the stub lines to get preferring gain and bandwidth and, then, comparison has made between both approach's results to examine which is better to use.