Abstract
In this paper, a new method for the design of the broadband RF/microwave amplifiers employing distributed amplification is presented. It proposes to use stages with asymmetric lumped elements (inductances and capacitances) in the gate and drain circuits of the amplifier instead of symmetric elements in order to control the frequency response and to achieve a flat gain over a large bandwidth. The need for impedance matching problems is also solved. Simulation result obtained demonstrates that the new design gives better frequency response as compared to the conventional distributed amplifiers even without optimization.

1-Introduction
The principal of distributed amplification was suggested in 1948 and originally applied to vacuum tubes [1]. With the development of the P-N technology, the vacuum tubes were replaced by the transistors. It is based on the idea to separate the parasitic capacitors of the active devices by means of artificial transmission lines. As a result, the effect of the capacitors will be absorbed in to LPF segments of the transmission lines then it is possible to obtain amplification over much wider bandwidth than is achievable with traditional cascaded multi-stage amplifiers, therefore the distribute amplification is the best method and most widely applied for broadband microwave applications. Large amounts of publications proved the importance of the field [2]-[5]. The basic distributed amplifier (DA) structure is shown in Figure (1). It has two, lumped element, artificial transmission lines represented by the drain and gate lines, which are made up of a series of inductors with the corresponding parasitic capacitances (C_{gs} and C_{ds} of the transistors).

The input signal (Vin) is traveled down the gate line to the terminated end