

ABSTRACT

Frequency Doubling and Mixing Circuit

Disclosed is a frequency doubling and mixing circuit capable of effecting frequency doubling operation and mixing operation with one unit of circuit. It includes a first set of differential transistor-pair which have emitters connected in common and an emitter size ratio of $K:1$ (K is larger than 1), and a second set of differential transistor-pair which similarly have emitters connected in common and an emitter size ratio of $K:1$. These two sets of differential transistor - pairs have respective constant electric currents supplied. In addition, it has a differential amplifying circuit which is driven by a differential current between the common collector output of one transistor of the first set of differential transistor-pair and one transistor of the second set of differential transistor-pair and the common collector output between the other transistor of the first set of differential transistor-pair and the other transistor of the second set of differential transistor-pair. A signal to be doubled is supplied across the common base connecting points of the transistors which are different in emitter size, a mixing



signal is supplied from a differential input terminal of said differential amplifying circuit, and a circuit output is taken out from an output terminal or said differential amplifying circuit.

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