CLAIMS

What is claimed is:

1. An injection locked frequency divider having a predetermined frequency division ratio and comprising:

a primary LC tank circuit comprising a first inductor (L) and a first capacitive device (C) coupled in parallel; and

one or more secondary LC tank circuits, each comprising an inductor (L) and a capacitive device (C) coupled in parallel, wherein each of the one or more secondary LC tank circuits is coupled to the primary LC tank circuit for band pass filtering an input frequency to generate an output frequency filtered in accordance with the predetermined frequency division ratio;wherein the predetermined frequency division ratio is based on a quantity of secondary LC tank circuits;

wherein the injection locked frequency divider is tunable through at least one of magnetic or electric coupling between the primary LC tank circuit and the one or more secondary LC tank circuits.

2. The injection locked frequency divider in accordance with claim 1 wherein each of the one or more secondary LC tank circuits is electrically coupled to the primary LC tank.

3. The injection locked frequency divider in accordance with claim 1 wherein each of the one or more secondary LC tank circuits is magnetically coupled to the primary LC tank.

4. The injection locked frequency divider in accordance with claim 1 wherein each of the one or more secondary LC tank circuits is both electrically and magnetically coupled to the primary LC tank.

5. The injection locked frequency divider in accordance with claim 1 wherein the one or more secondary LC tank circuits comprises two or more LC tank circuits, and wherein each of the two or more secondary LC tank circuits is coupled to each other and coupled to the primary LC tank circuit.

6. The injection locked frequency divider in accordance with claim 1 wherein said capacitive device of each of the LC tank circuits, including said primary LC tank and said one or more secondary LC tank circuits, comprises one or more tunable capacitor banks.