

ABSTRACT

INDUCTOR-CAPACITOR RESONANT RF SWITCH

A new inductor-capacitor resonance RF (LCR-RF) switching device is achieved. The device comprises a microelectronic mechanical switch and a spiral inductor. The microelectronic mechanical switch comprises, first, a first dielectric layer overlying a substrate. A down electrode overlies the first dielectric layer. A second dielectric layer overlies the down electrode. An up electrode overlies the down electrode with the second dielectric layer therebetween. A bridge post overlies the first dielectric layer and does not contact the down electrode or the up electrode. Multiple bridge posts may be used. Finally, a membrane is suspended over said down electrode. One end of the membrane is fixed to the top of the bridge post. An electrostatic potential between the membrane and the down electrode will cause the membrane to flex down toward the down electrode. This flexing of the membrane will cause the capacitance of the switching device to vary. The spiral inductor comprises a metal line configured in a spiraling pattern with a first end connected to the bridge post and a second end forming an output node. A dual damascene method to form the LCR-RF switch is also achieved.

(FIGURE 4 IS SUGGESTED FOR PUBLICATION)