

Antenna Description

The differential output of the CC2451 is transformed to a single-ended 50-ohm signal through a passive component (capacitor/inductor) balun. The output of the balun is low-pass filtered to reduce harmonic radiation and then connected to a board-etched omnidirectional meandered inverted F-Antenna (see picture below). As such, the antenna is permanently attached to the radio. The antenna structure is a replica of an FCC-certified reference design provided by Texas Instruments.

Operation

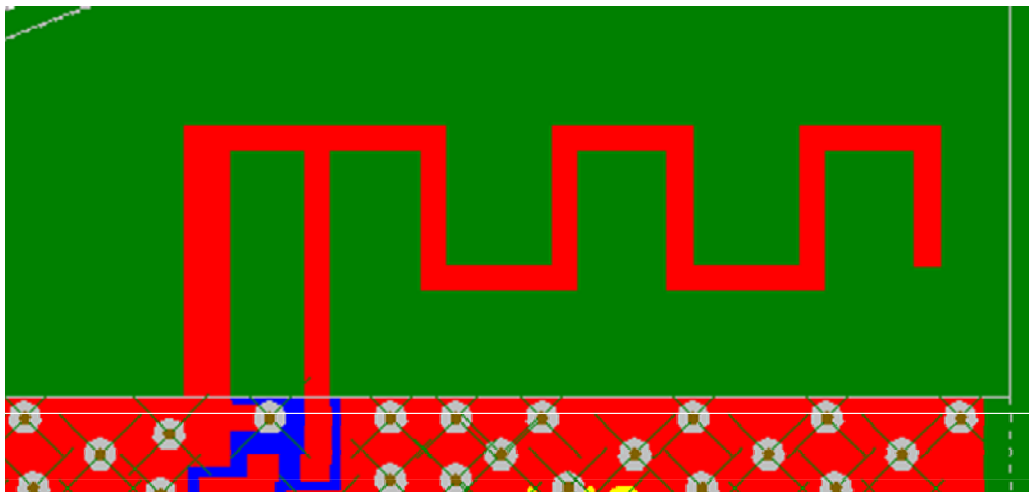
*"The Inverted F antenna is a variant of the monopole where the top section has been folded down so as to be parallel with the ground plane. This is done to reduce the height of the antenna, while maintaining a resonant trace length. This parallel section introduces capacitance to the input impedance of the antenna, which is compensated by implementing a short-circuit stub. The stub's end is connected to the ground plane through a via."*¹

The meandering of the antenna allows the antenna to resonate at the desired frequency despite being compressed into a smaller area.

Gain

Maximum antenna gain at 2440MHz: -0.4dBi

Drawing



¹ http://www.qsl.net/va3iul/Antenna/PIFA/PIFA_Planar_Inverted_F_Antenna.pdf