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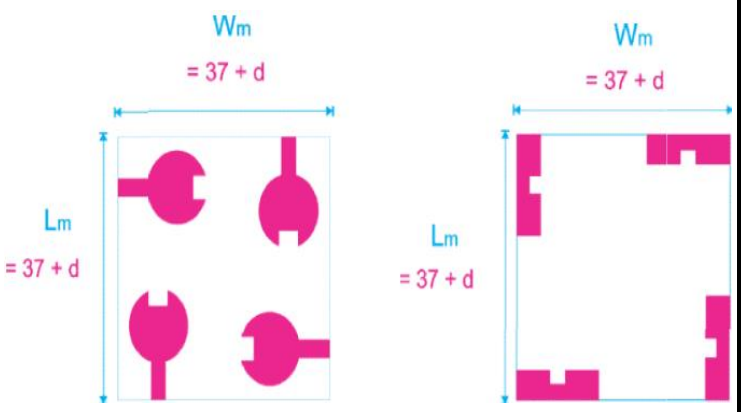
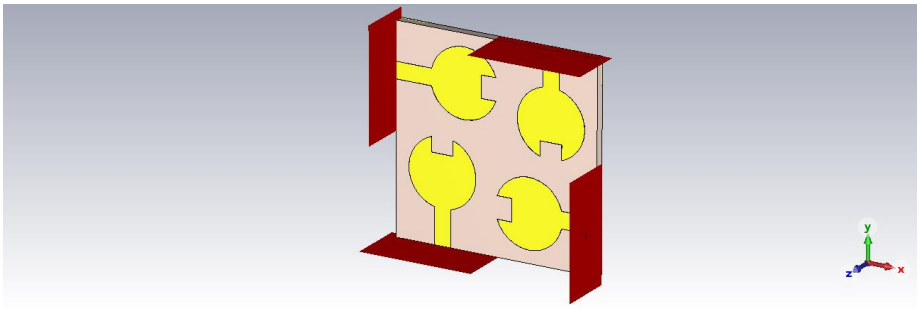
Report6:Four-Port Wrench Shaped Compact UWB MIMO Antenna

Given Dimensions

The dimensions are achieved by applying various optimization techniques. They are substrate length (L) × width (W) = 20 mm ×17 mm, thickness of substrate = 1.6 mm, ground center rectangular slot length × width = 3 mm × 3.1 mm, partial ground length × width = 4.9 mm × 17 mm, feed line length × width = 6.32 mm × 3 mm, thickness of patch = 0.035 mm, Wrench-shaped patch radius = 6.2 mm, patch slot length × width = 3 mm × 4 mm.



1) Structure



2) S-Parmeter

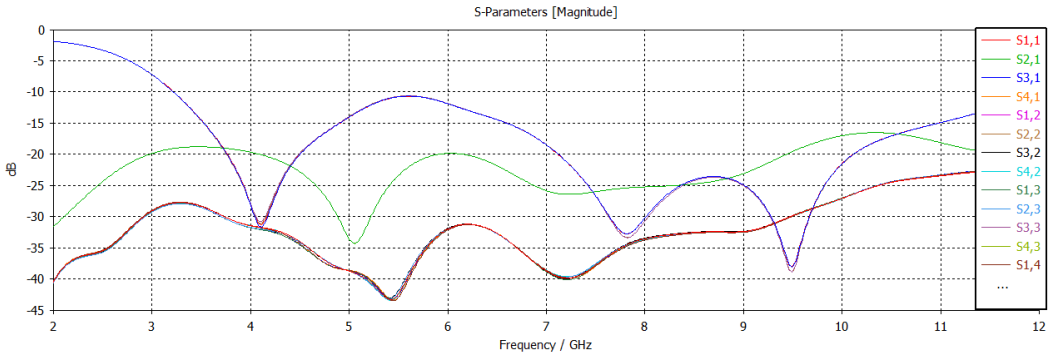
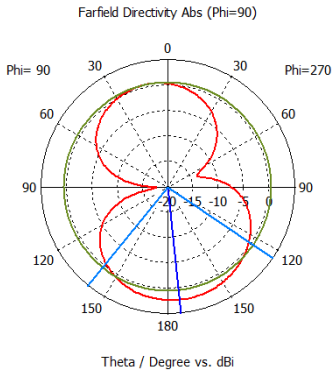
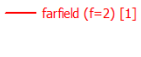


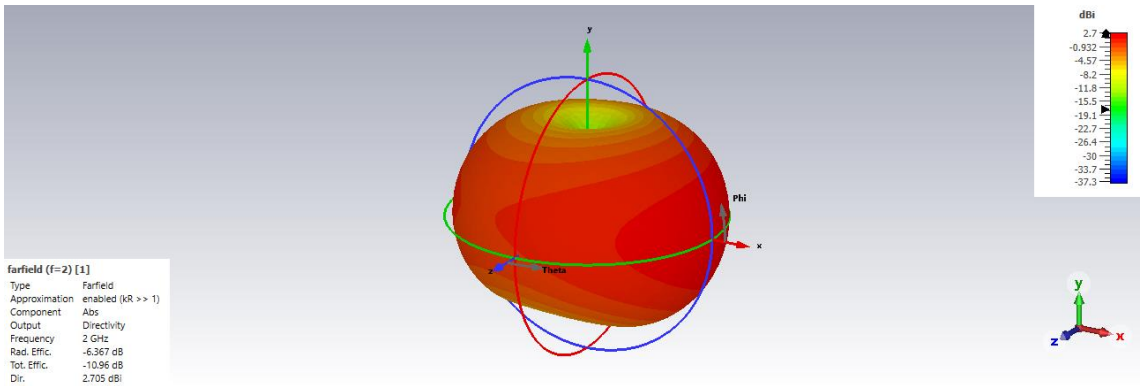
Figure 1: S-Parameter at d=7 for all Antennas

3) Farfield (1D/3D)

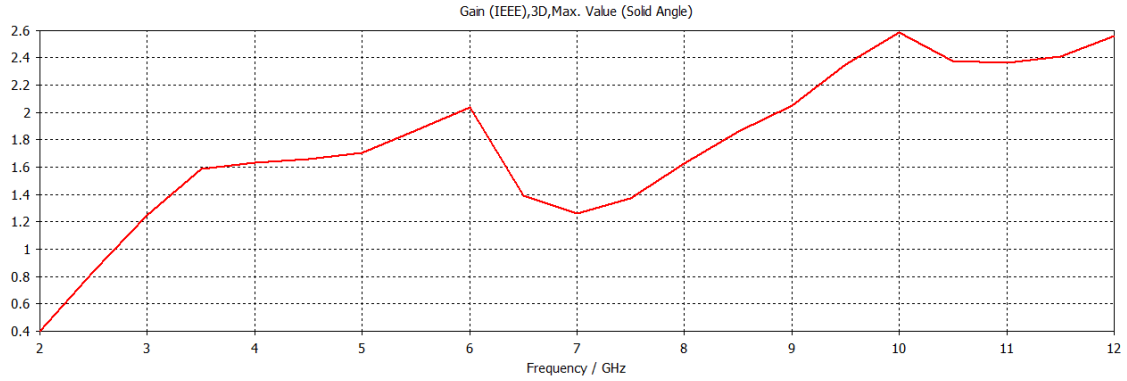


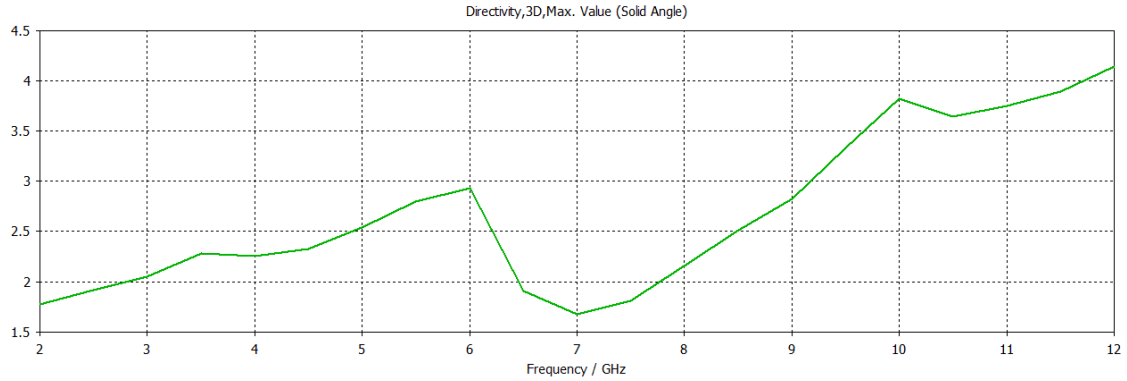


Frequency = 2 GHz
Main lobe magnitude = 2.28 dBi
Main lobe direction = 174.0 deg.
Angular width (3 dB) = 94.8 deg.
Side lobe level = -1.8 dB



4) Gain&Diversity





5) Surface Current