TI's DN007 and AN043 antennas were designed based on Isola DE104 low Tg laminate and prepreg. The PCB stackup:

PCB DESCRIPTION: 4 LAYER PCB 1.6 MM

Copper 1 35 um

Dielectric 1-2 0.175 mm (e.g. 1x Prepreg 7628 AT05 47% Resin)

Copper 2 18 um

Dielectric 2-3 1.14 mm (6x 7628M 43% Resin)

Copper 3 18 um

Dielectric 3-4 0.175 mm (e.g. 1x Prepreg 7628 AT05 47% Resin)

Copper 4 35 um

Above PCB stackup means we may get the similar RF performance as the reference design if and only if we use the Isola DE104 material and the same PCB stackup. In other words, we are going to get into trouble with the product which must use different PCB material and stackup. By the way, all TI's reference designs are designed without the enclosures, thus according to the section enclosure, Part II, we could not use the reference designs for the most of products without necessary modifications due to the resonant frequency shifting and the antenna's bandwidth being extremely narrow.

		
Design / Application Note	DN007 *1	AN043 *2
Frequency	2.4 GHz	2.4 GHz
Typical Efficiency	80%(EB) 94%(SA)	68%(EB)
Bandwidth@ VSWR 2:0	280 MHz	101 MHz
Dimensions (mm)	26 x 8	15 x 6

Technical Data of DN007 and AN043 Antennas

I knew some engineers tuned the antenna in the enclosure by cutting the antenna which could shift the resonant frequency toward the higher