به نام خدا

ارائه آنتن

DEVELOPMENT OF DUAL-BAND MICROSTRIP PATCH ANTENNA FOR WLAN/MIMO/WiMAX/AMSAT/WAVE APPLICATIONS

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AMSAT is a name for amateur radio satellite organizations worldwide, but in particular the Radio Amateur Satellite Corporation (AMSAT) with headquarters at Washington, D.C. AMSAT organizations design, build, arrange launches for, and then operate (command) satellites carrying amateur radio payloads, including the OSCAR series of satellites. Other informally affiliated national organizations exist, such as AMSAT Germany (AMSAT-DL) and AMSAT Japan (JAMSAT).

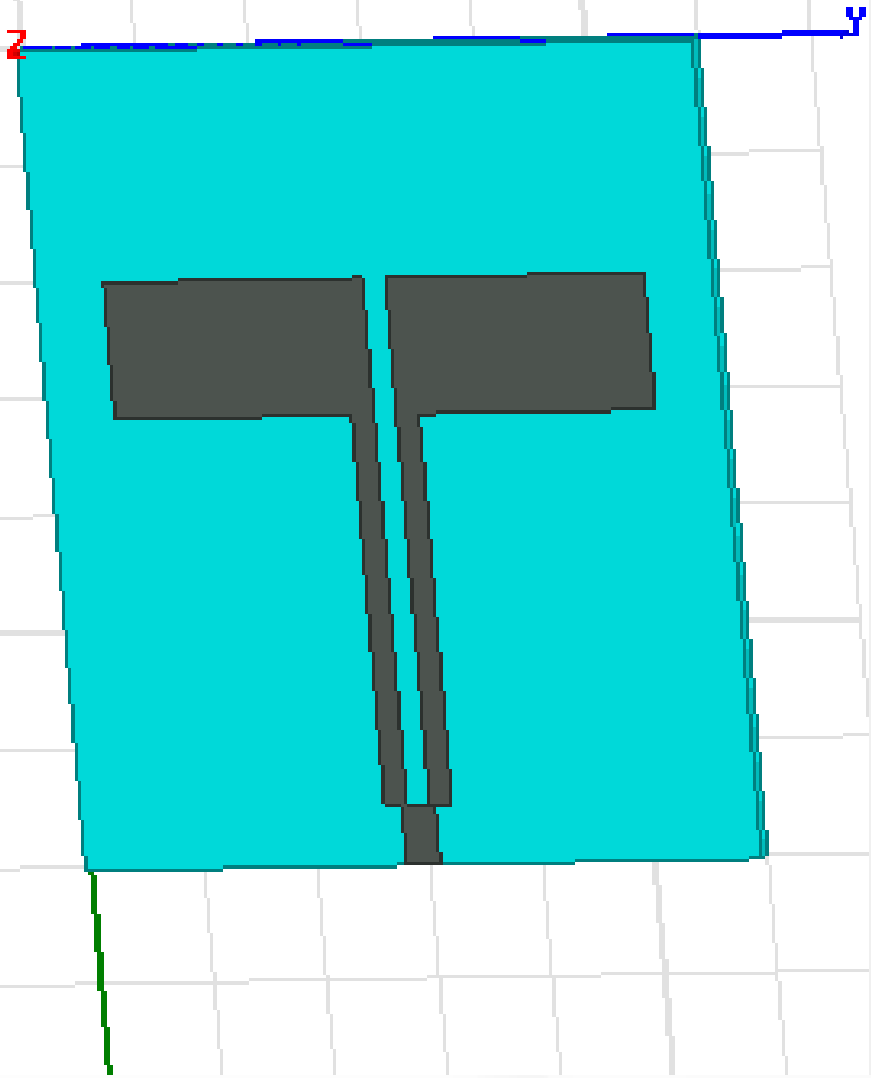
ABSTRACT: *dual-band microstrip-fed patch antenna formed with a pair of inverted L-shaped patches and ground plane is being modified to a + shape. The patch is printed on a Epoxy Glass (FR-4) substrate with thickness 1.6 mm, relative permittivity 4.4, and loss tangent 0.0024.*

return loss as follows 3.34–3.54 GHz and 4.90–6.26 GHz with adequate bandwidth of 200 MHz and 1.36 GHz, respectively. The impedance bandwidths are wide enough to cover the required bandwidths of 3.3–3.5 GHz, 5.15–5.35 GHz, 5.725–5.825 GHz for wireless local area network, 3.3–3.5 GHz for multiple input multiple output, 5.25–5.85 GHz for world-wide interoperability for microwave access, 5.650–5.670 GHz for uplinks and 5.830–5.850 GHz for downlinks of Amateur Satellite and 5.9 GHz wireless access in the vehicular environment (WAVE-IEEE 802.11p)

TABLE 1 Optimal Parameters of the Proposed MPA

Parameters	W_s	L_s	L_1	L_2	L_3	W_1	W_2	L_{g1}	W_{g1}	g	d
Unit (mm)	60	70	11.7	33.5	5	23	3	8	31	2	2

شبیه سازی



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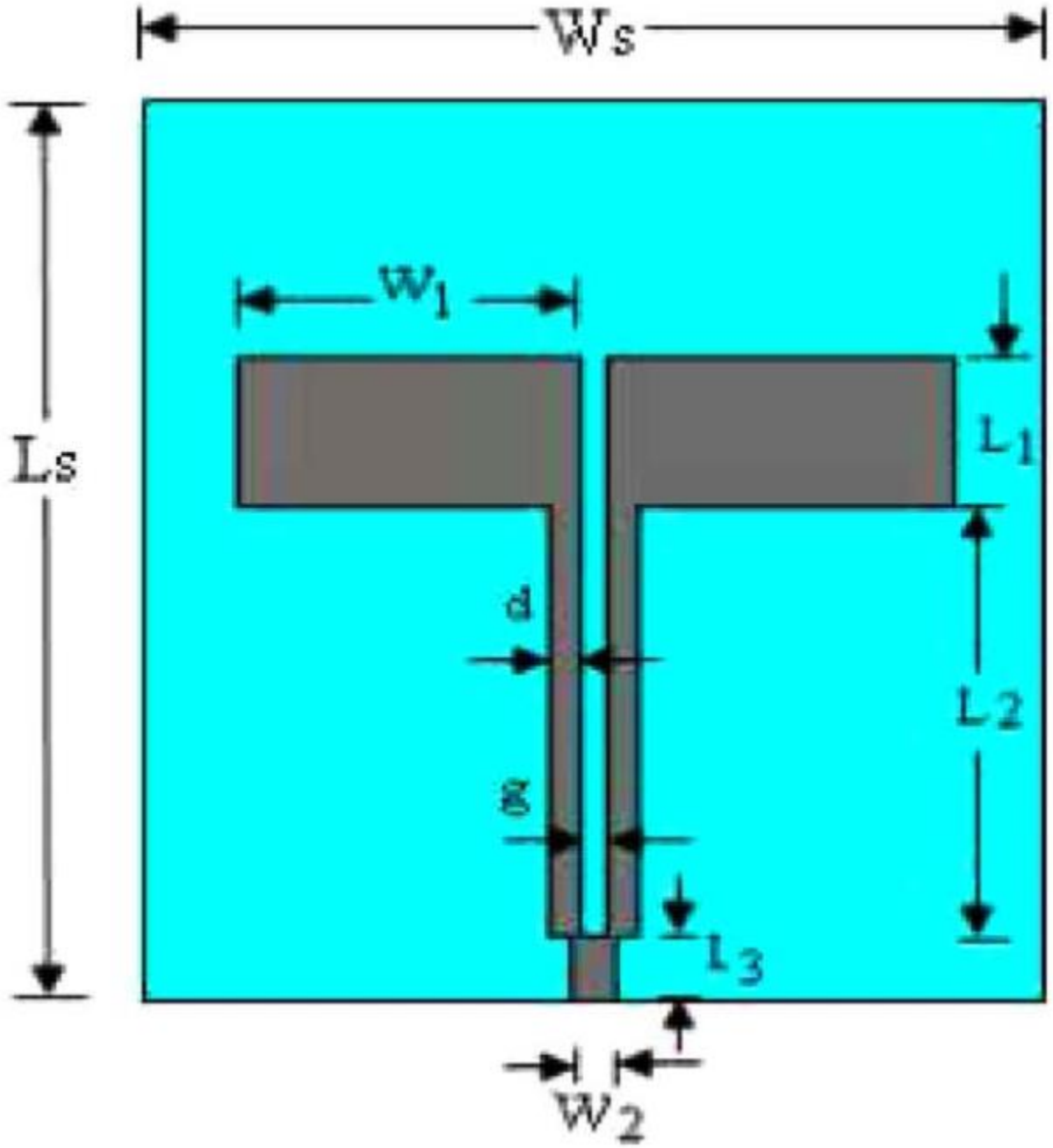
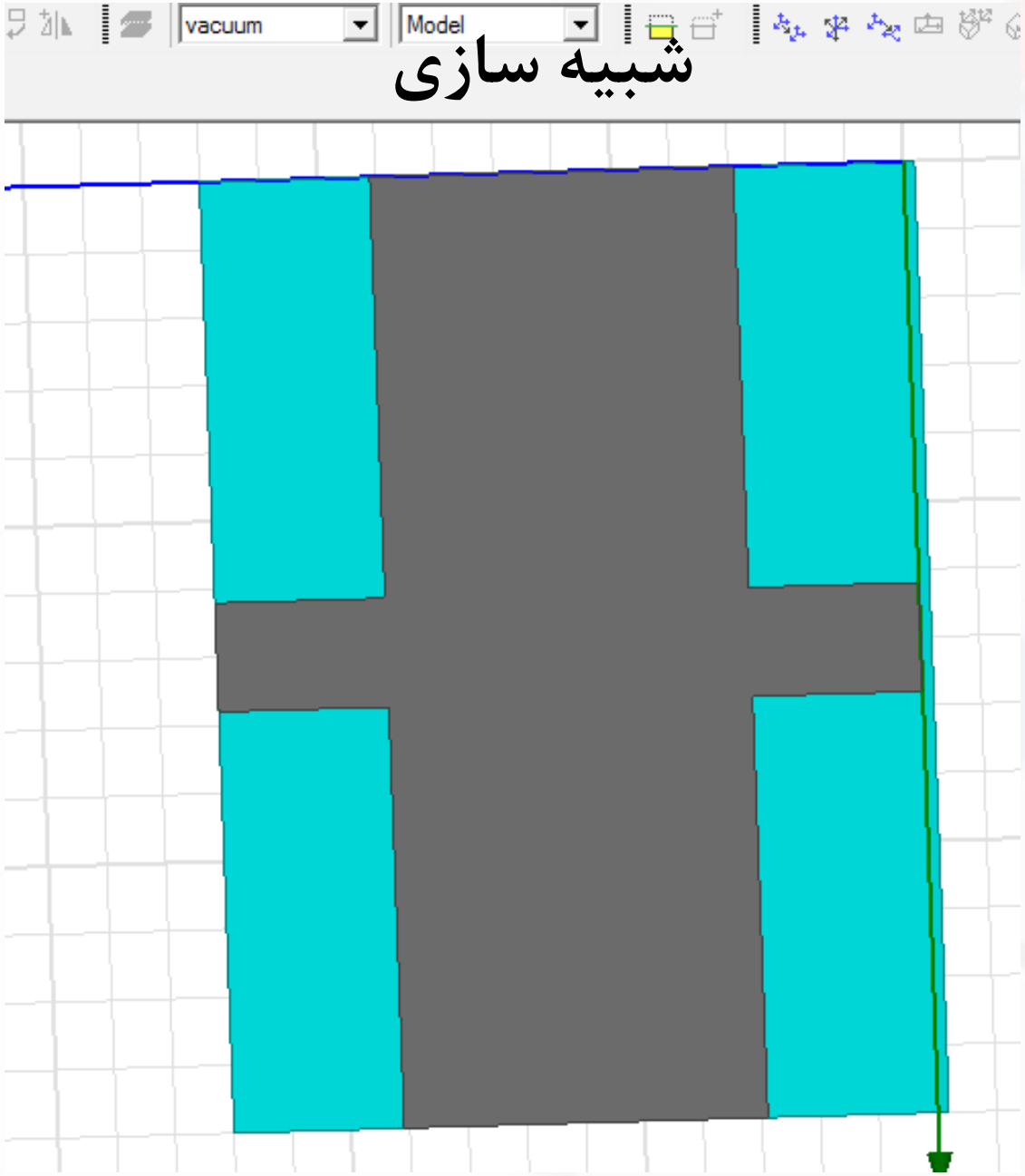
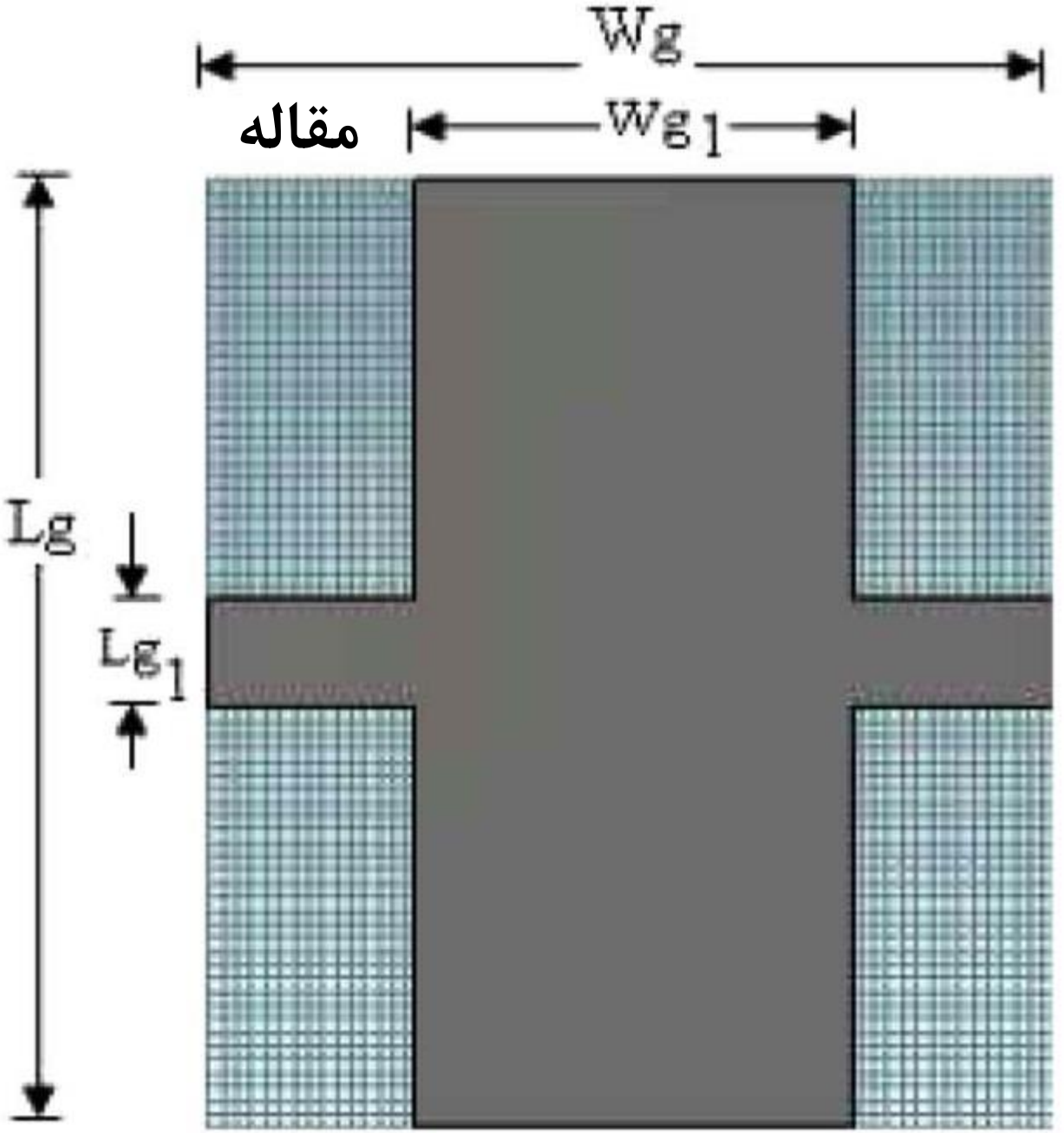
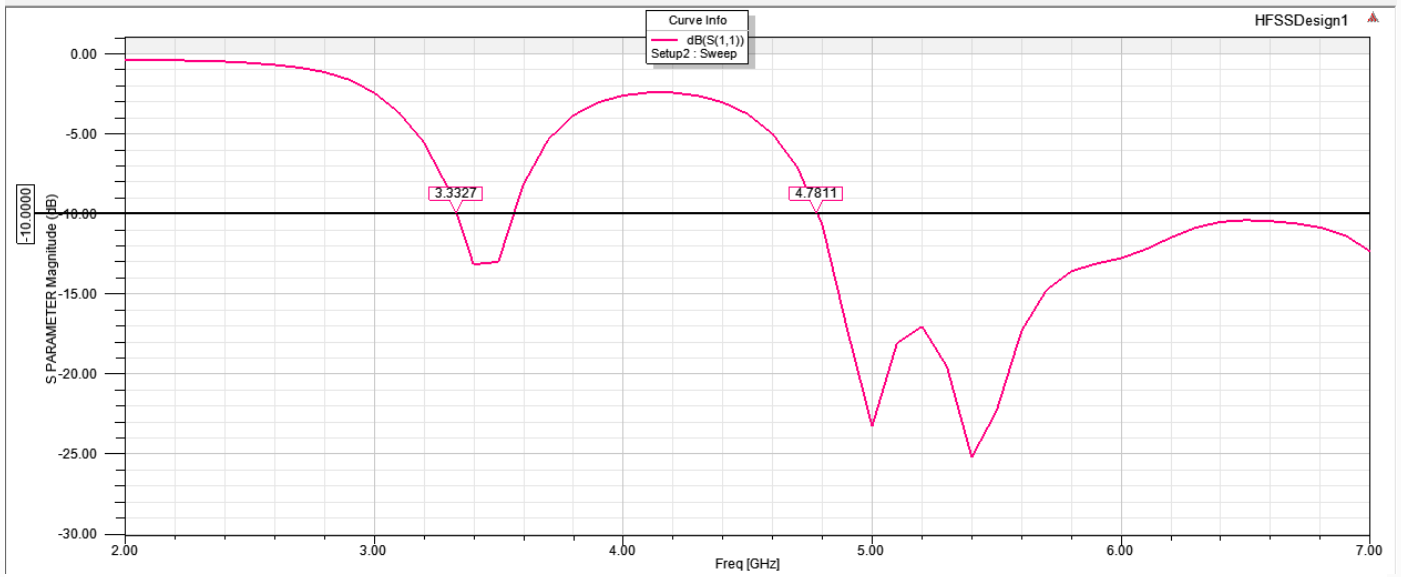



vacuum
Model
شبیه سازی


مقاله
Wg
Wg1
Lg
Lg1

شبیه سازی



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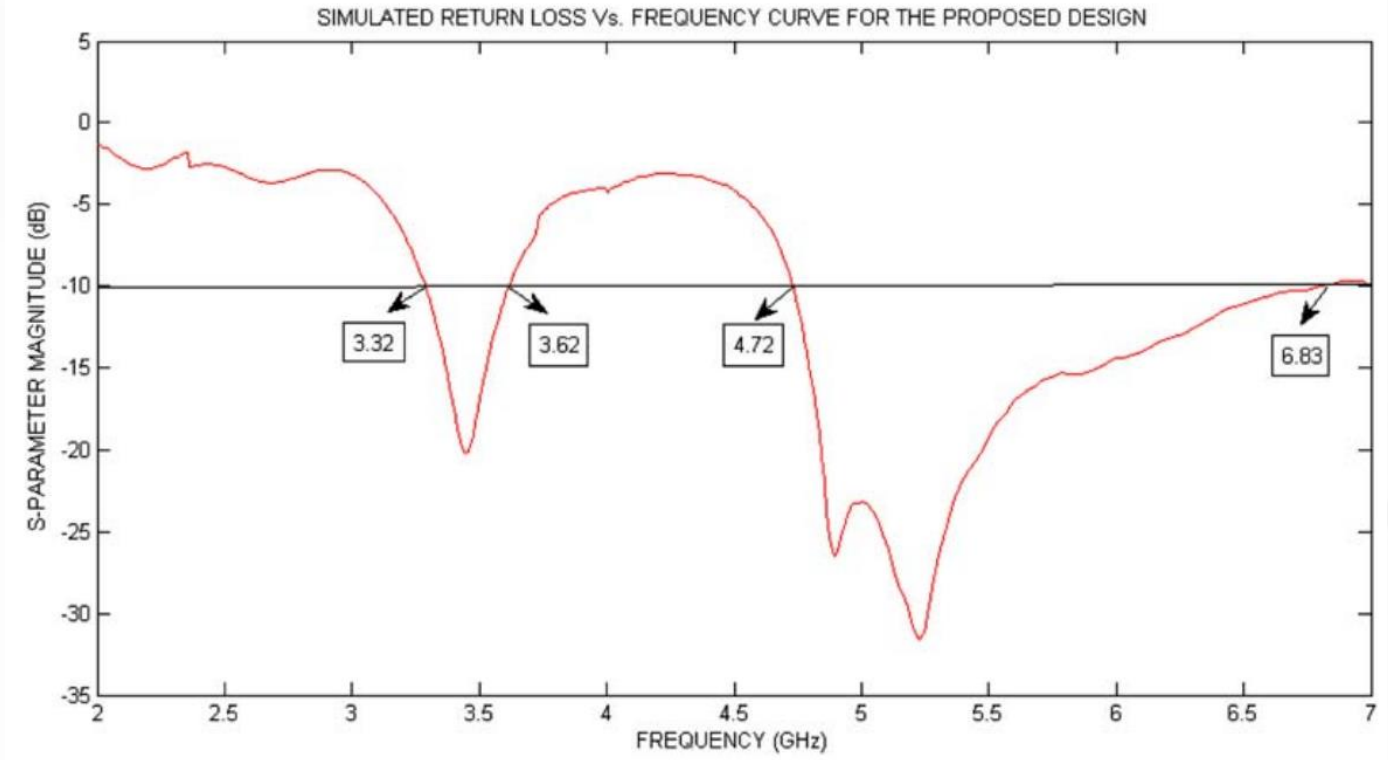

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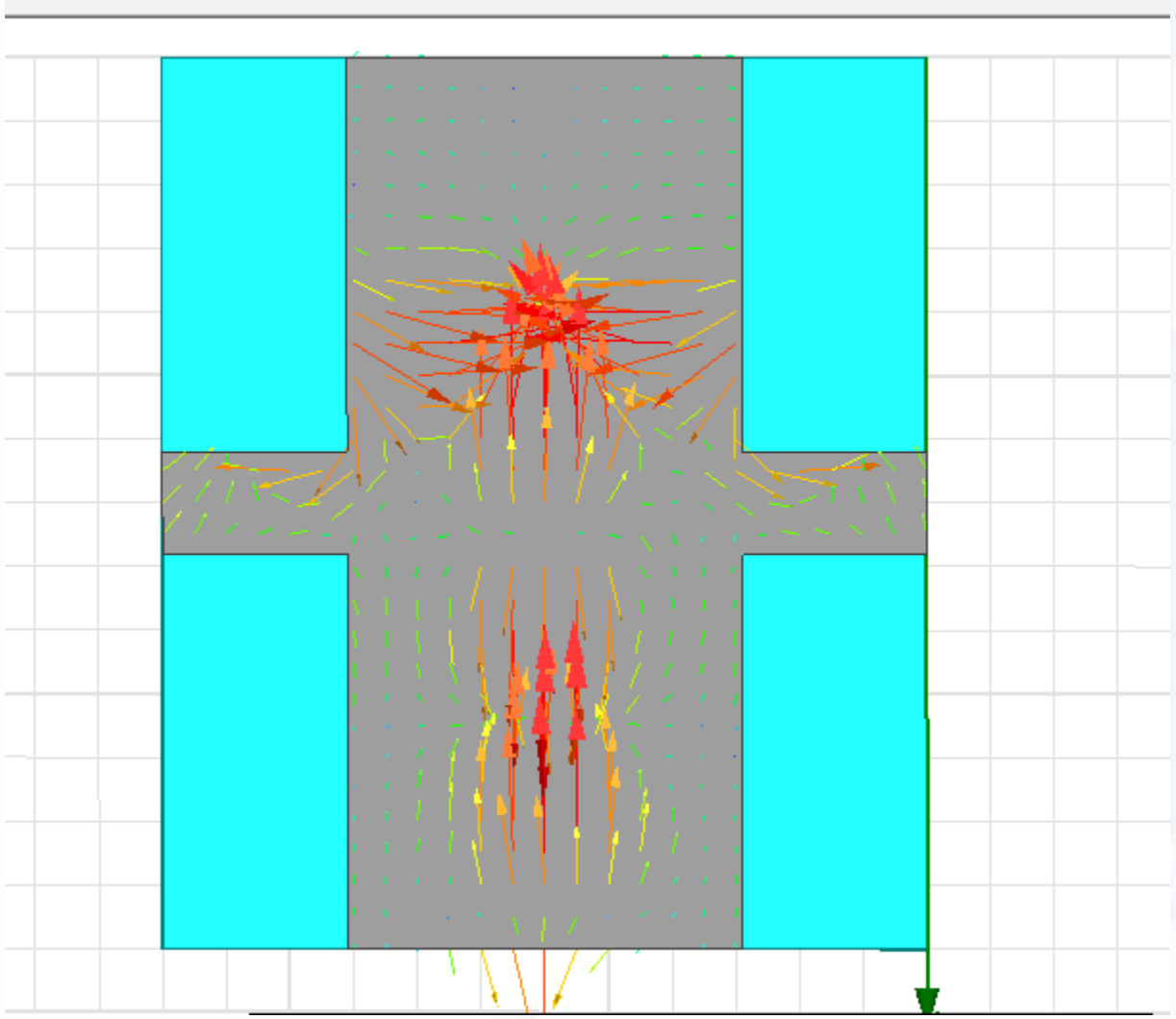

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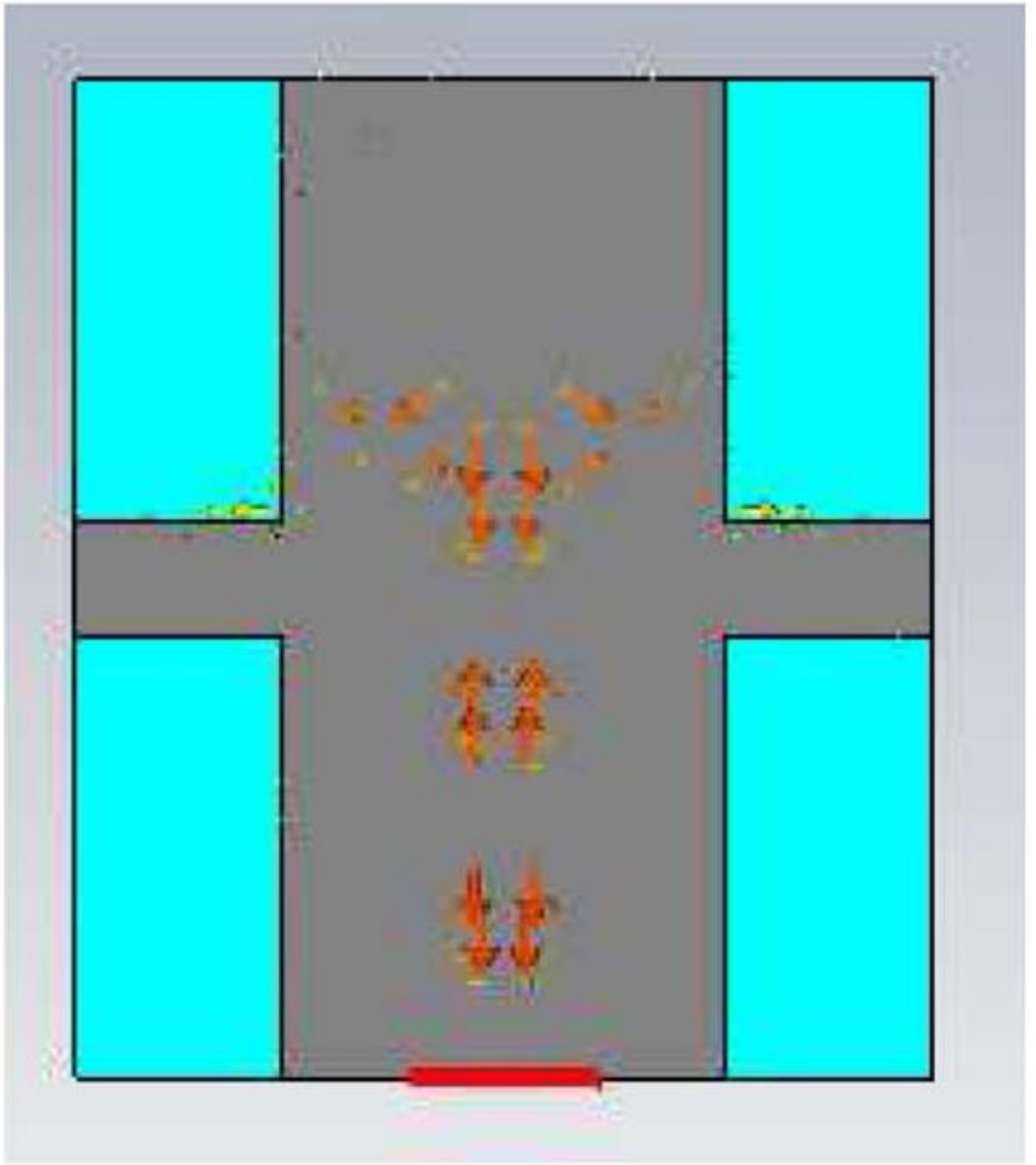

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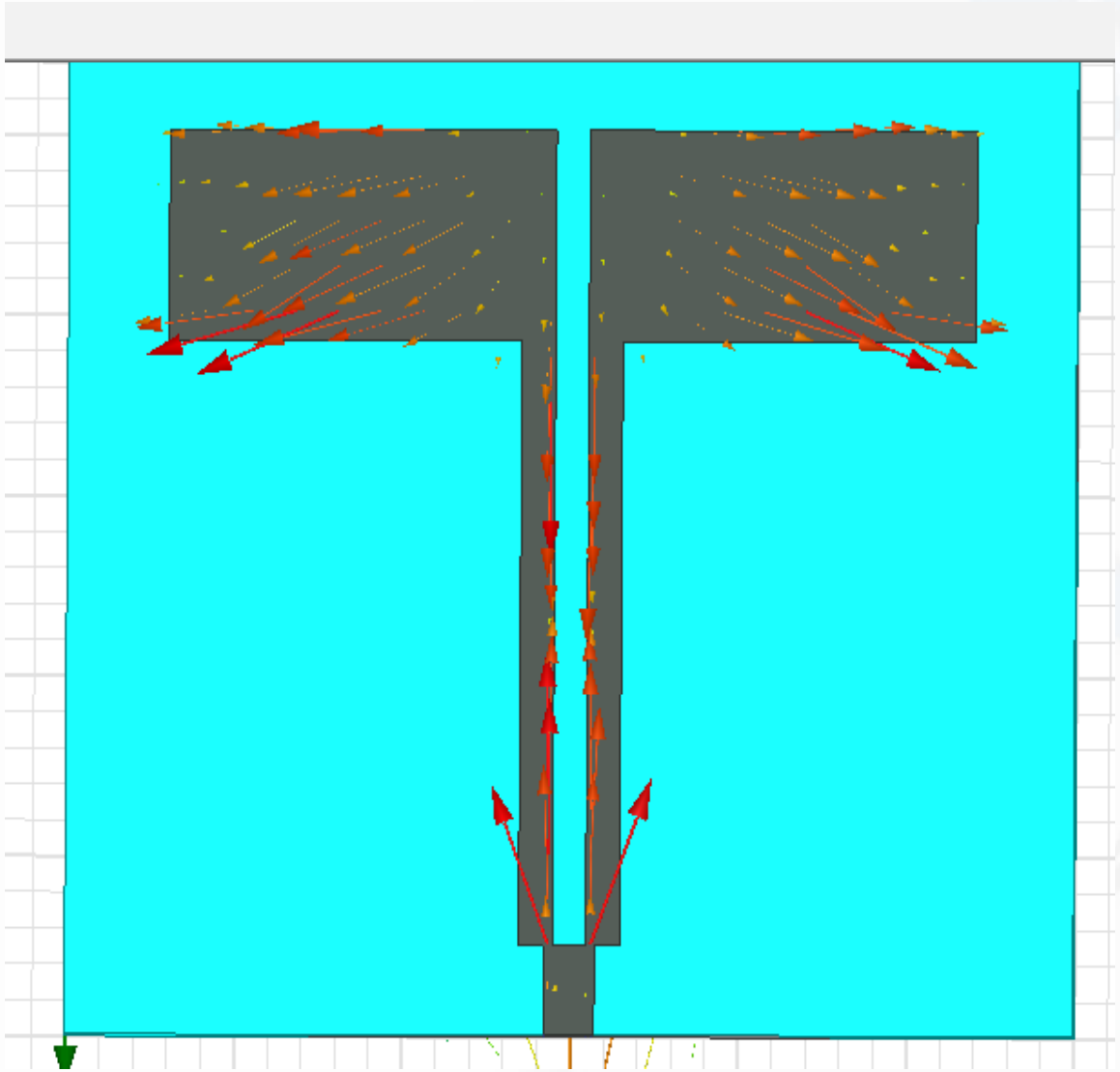

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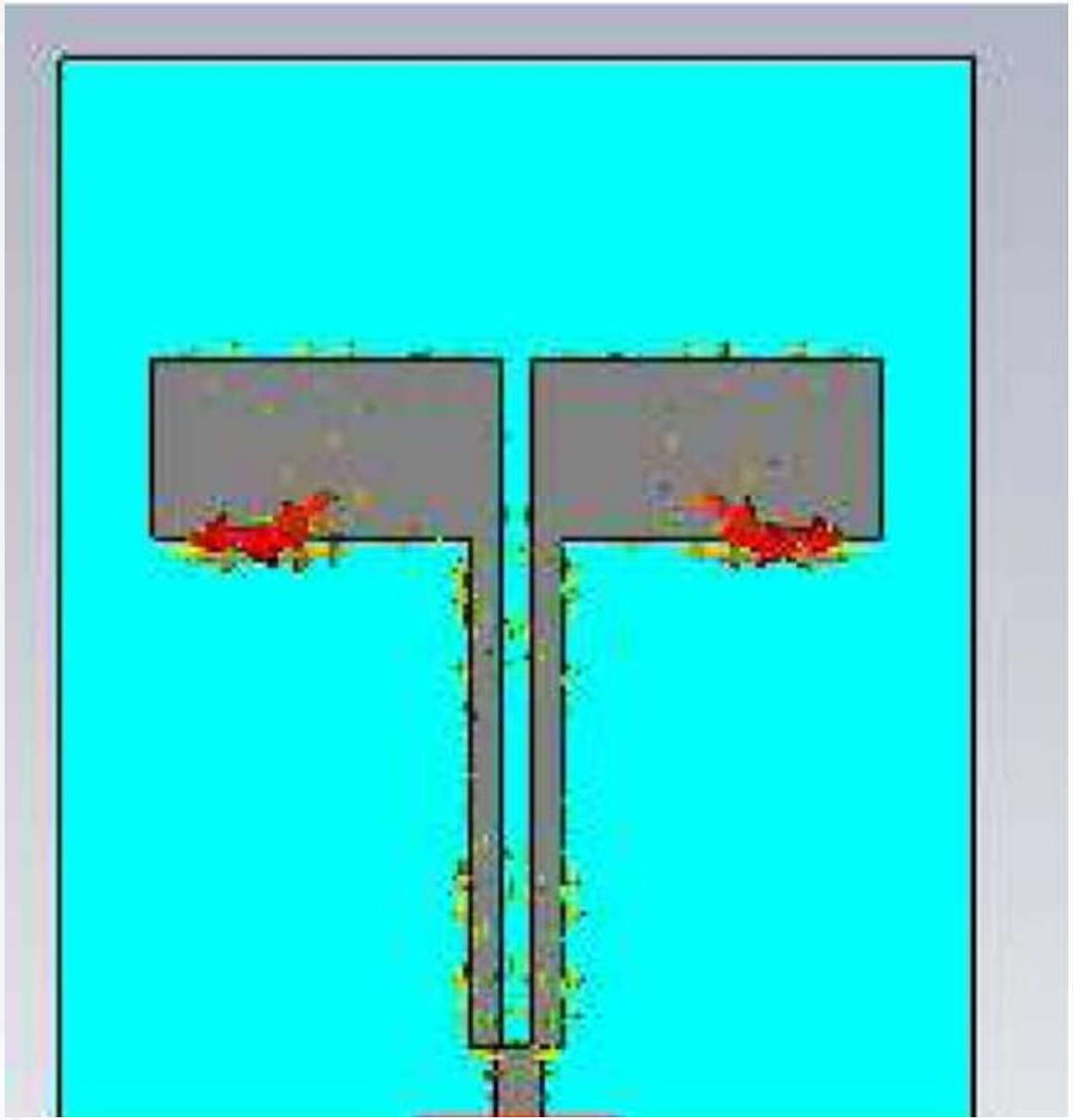

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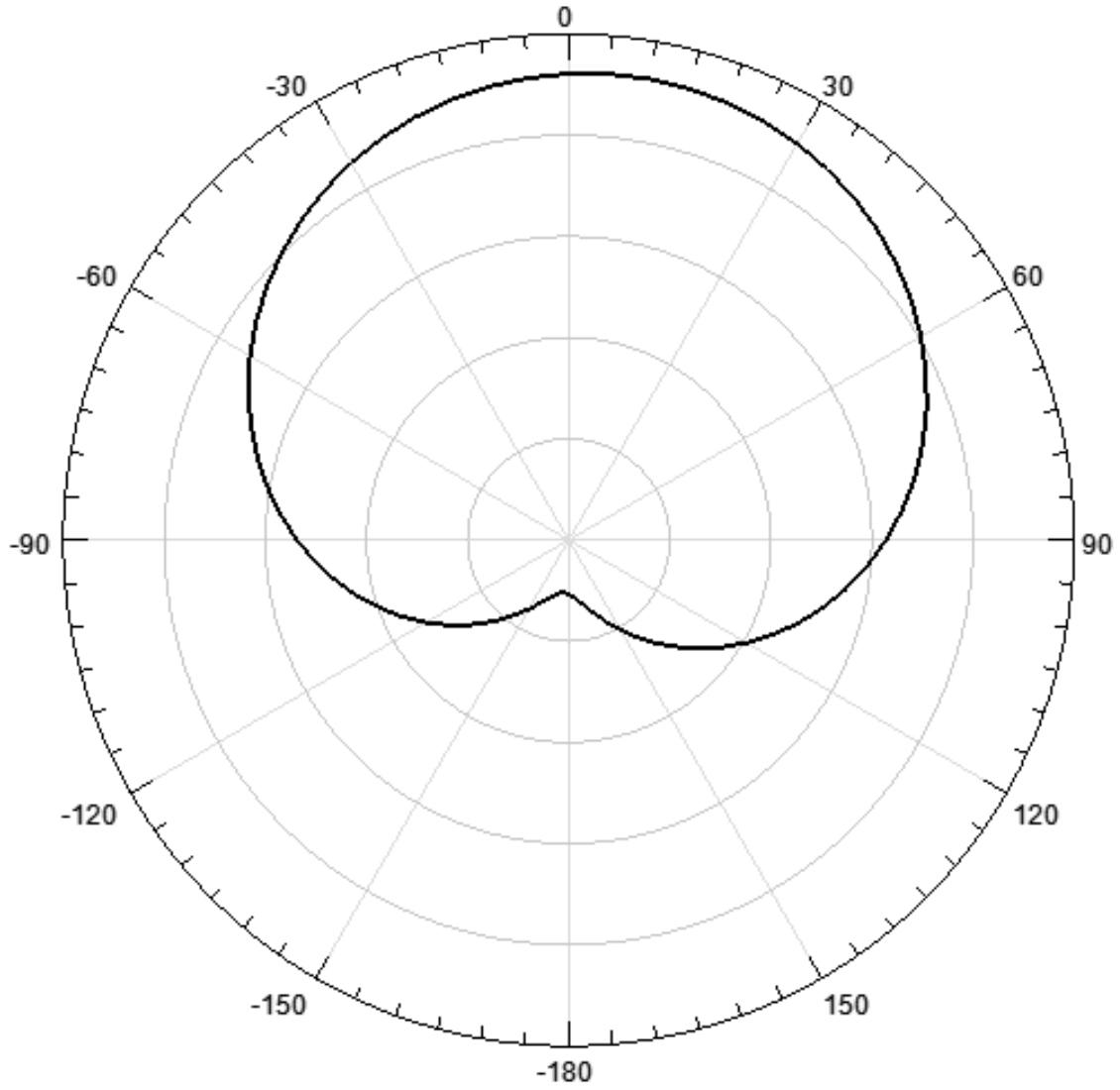

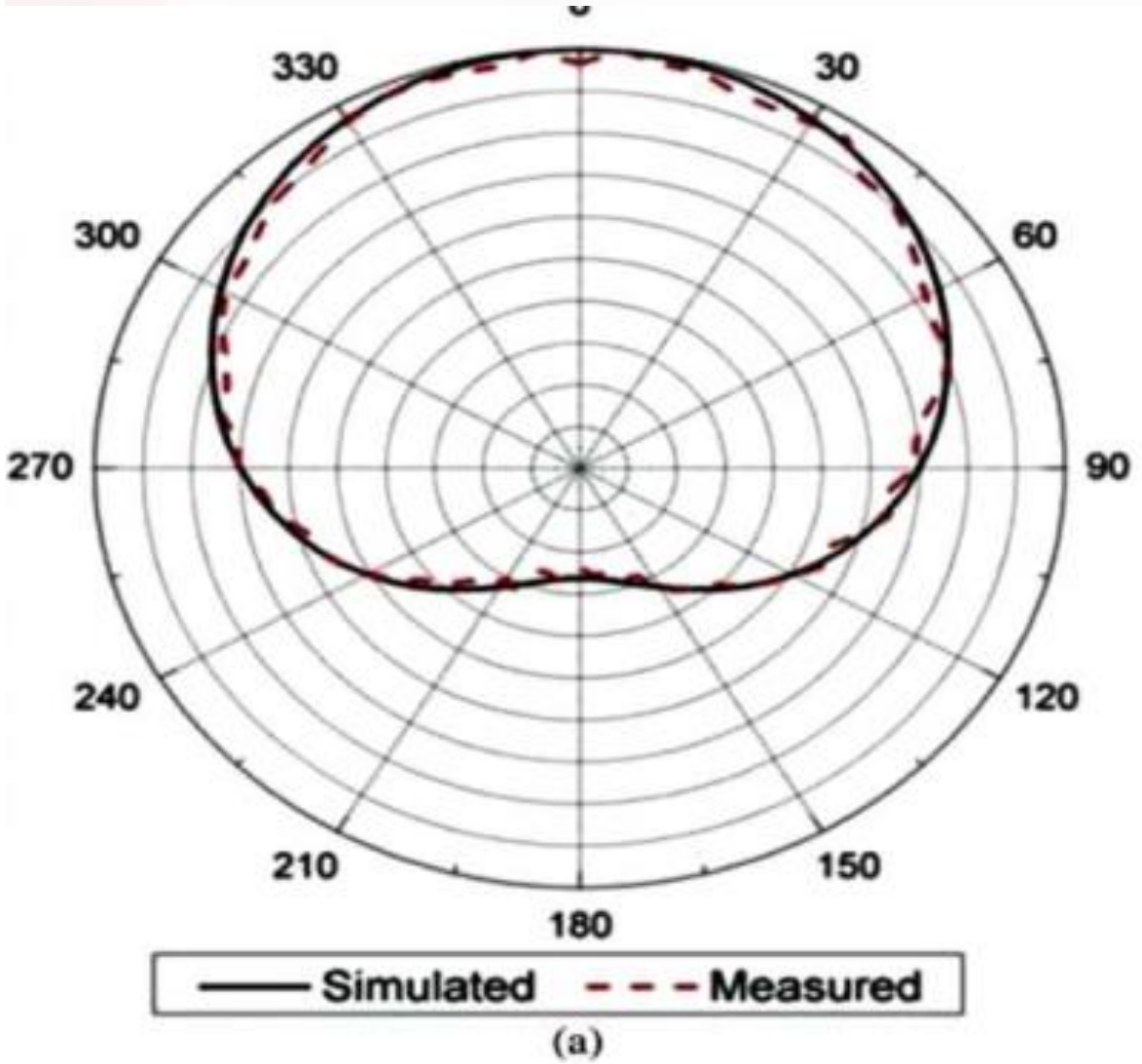

Figure 8 Simulated and measured (a) *E*-plane radiation pattern and (b) *H*-plane radiation pattern at 3.48 GHz.

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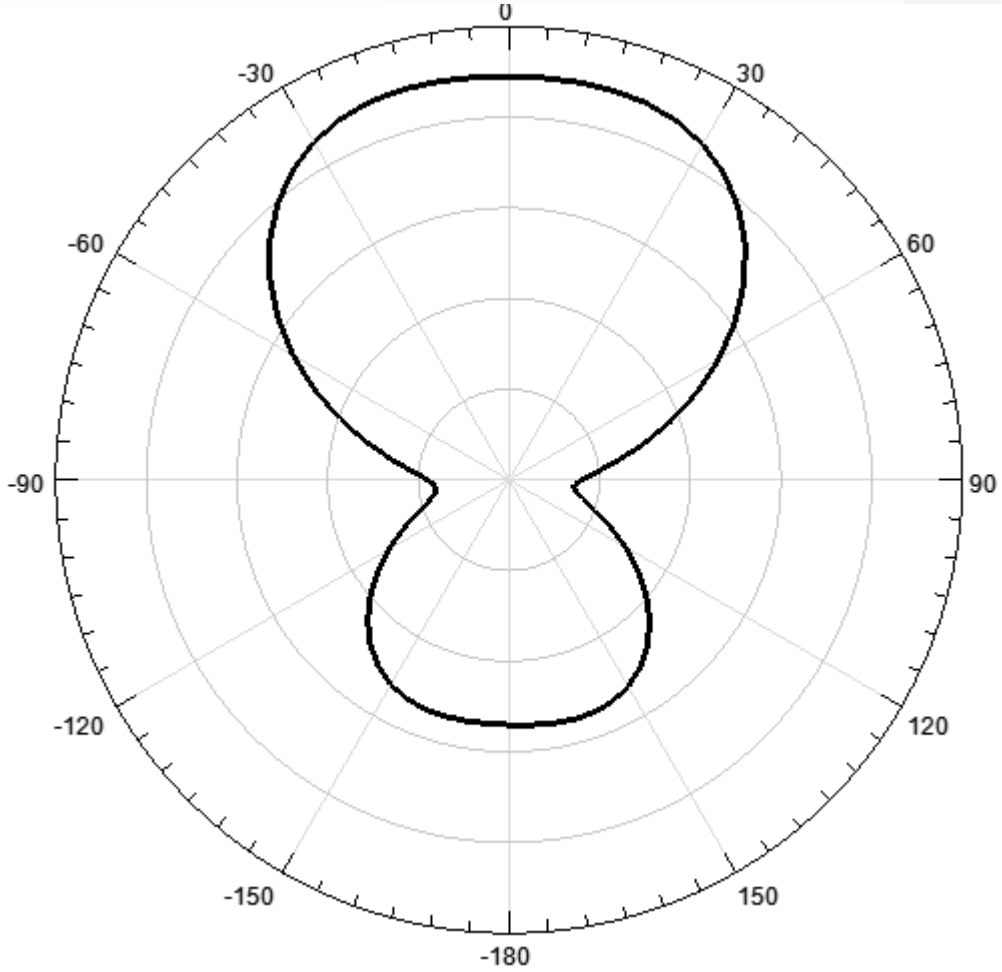

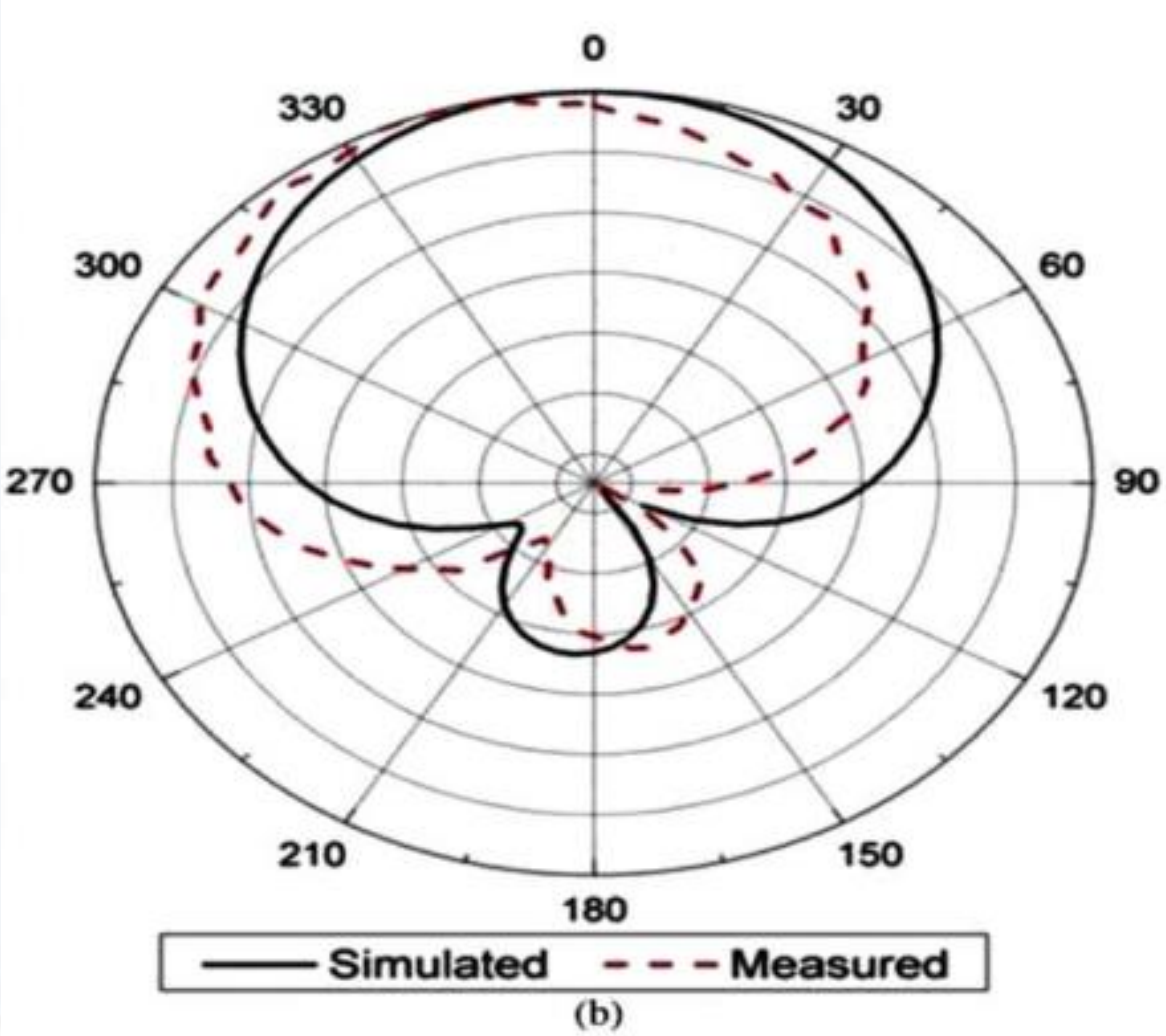

Figure 8 Simulated and measured (a) *E*-plane radiation pattern and (b) *H*-plane radiation pattern at 3.48 GHz.

شبیه سازی

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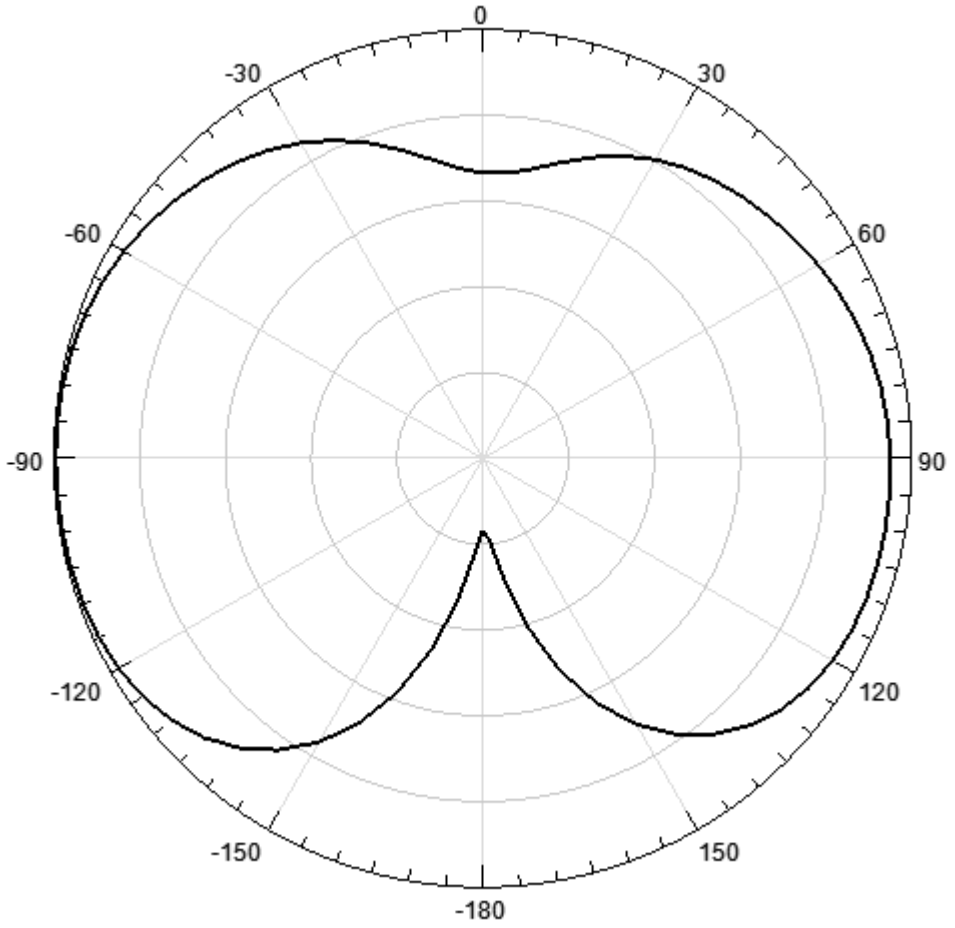


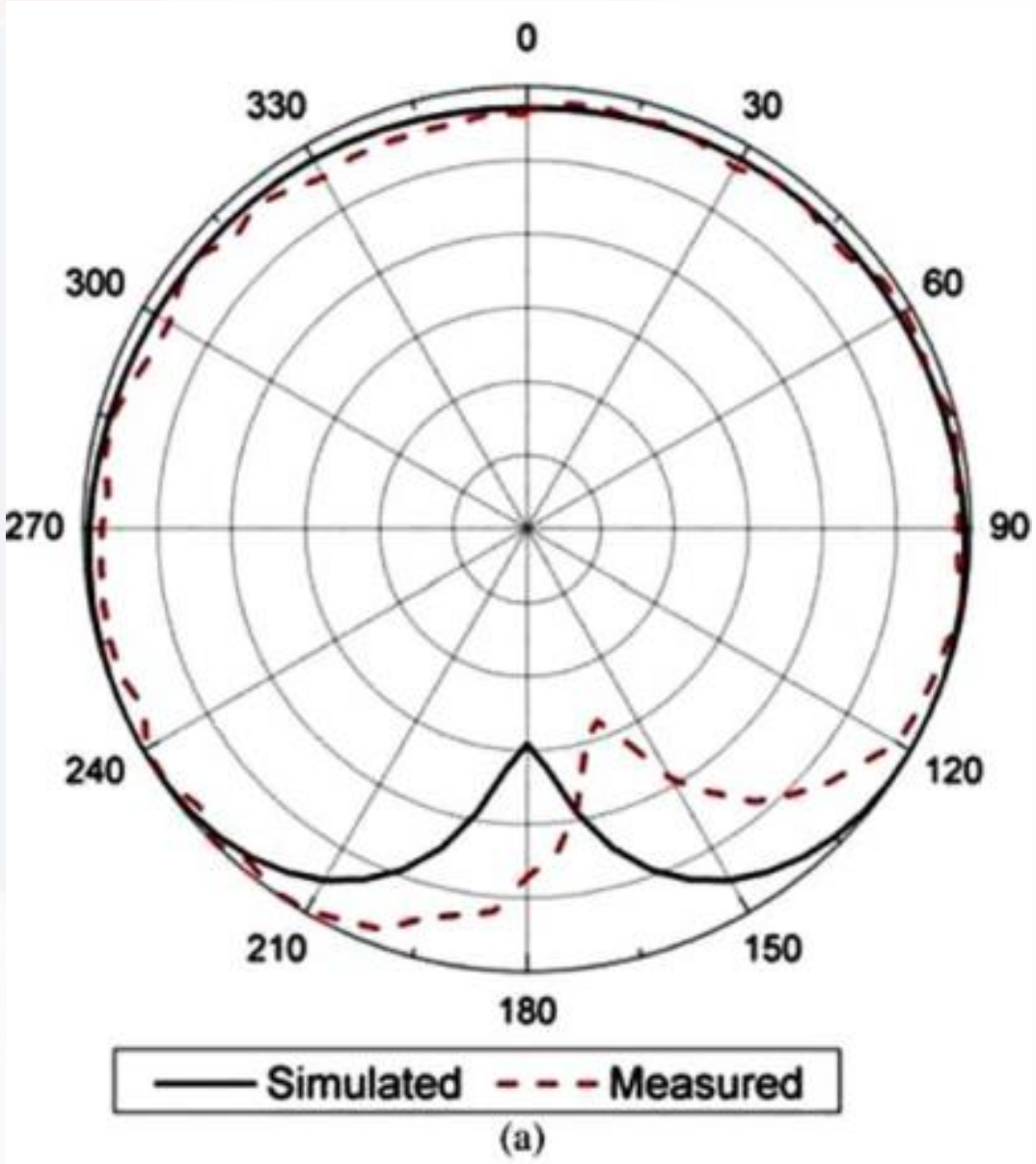
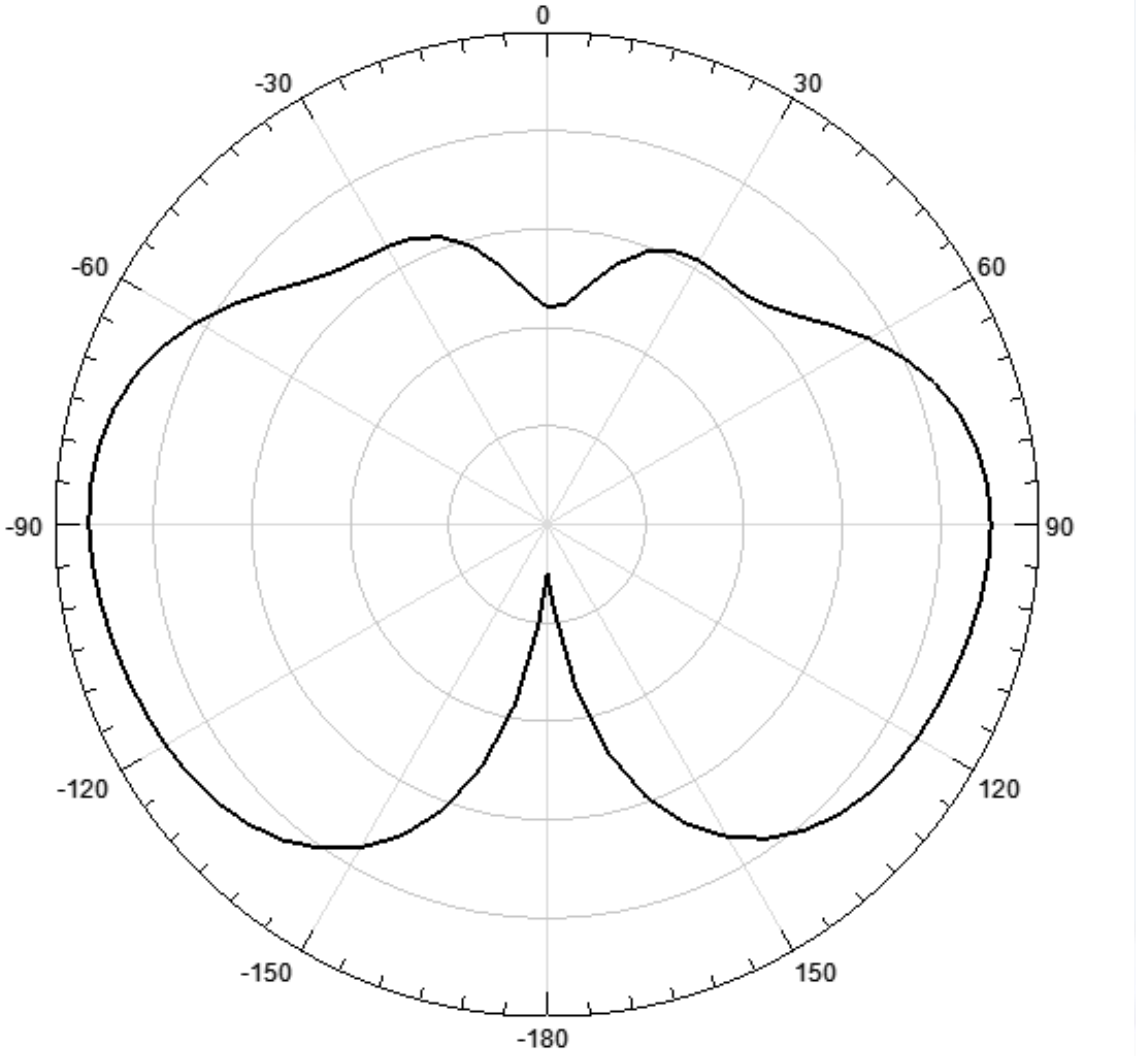


Figure 9 Simulated and measured (a) *E*-plane radiation pattern and (b) *H*-plane radiation pattern at 5.25 GHz. [Color figure can be viewed in the

شبیه سازی

مقاله



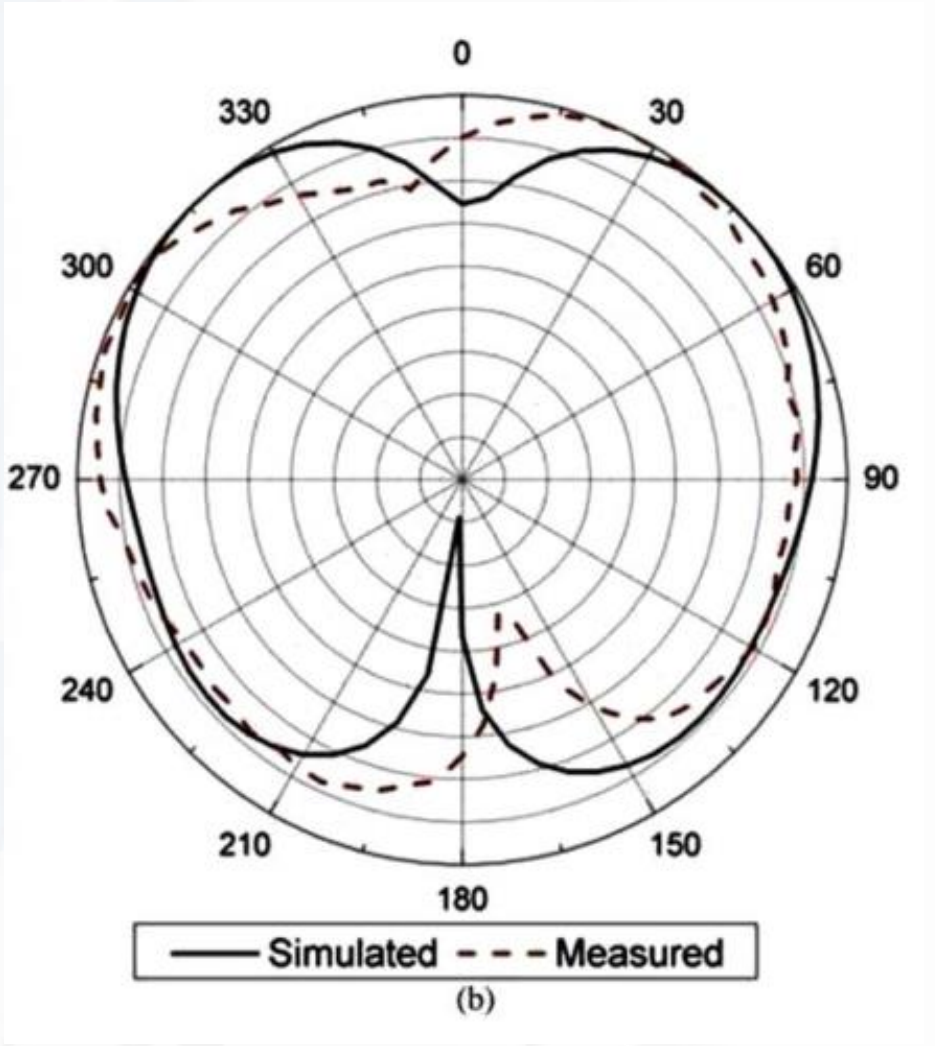
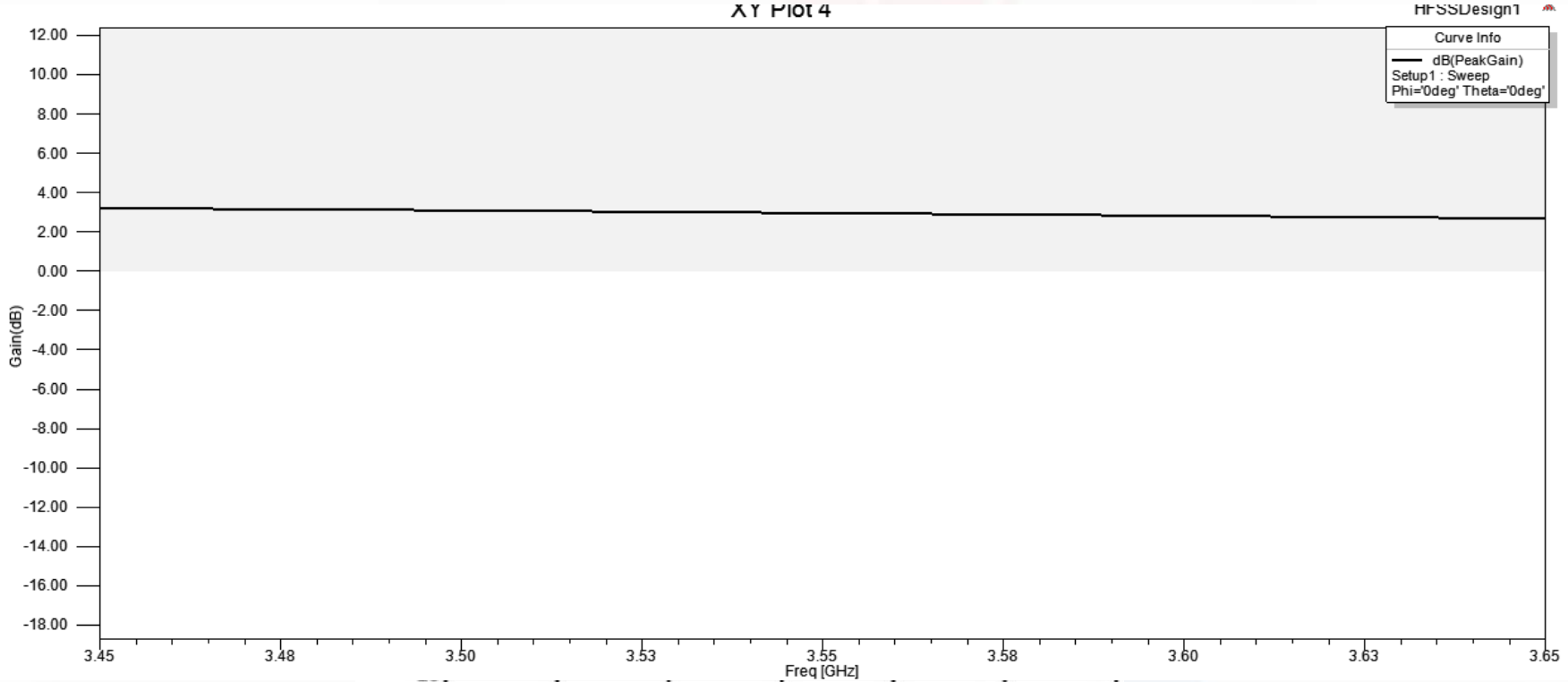


Figure 9 Simulated and measured (a) *E*-plane radiation pattern and (b) *H*-plane radiation pattern at 5.25 GHz. [Color figure can be viewed in the


XY Plot 4
HFSSDesign1
Curve Info
dB(PeakGain)
Setup1 : Sweep
Phi='0deg' Theta='0deg'
12.00
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
-8.00
-10.00
-12.00
-14.00
-16.00
-18.00
Gain(dB)
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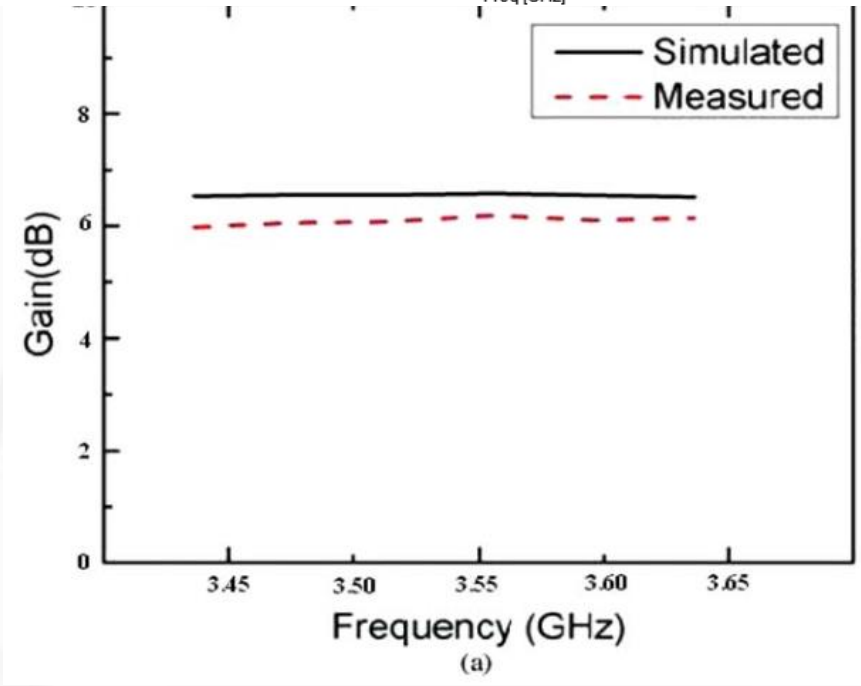
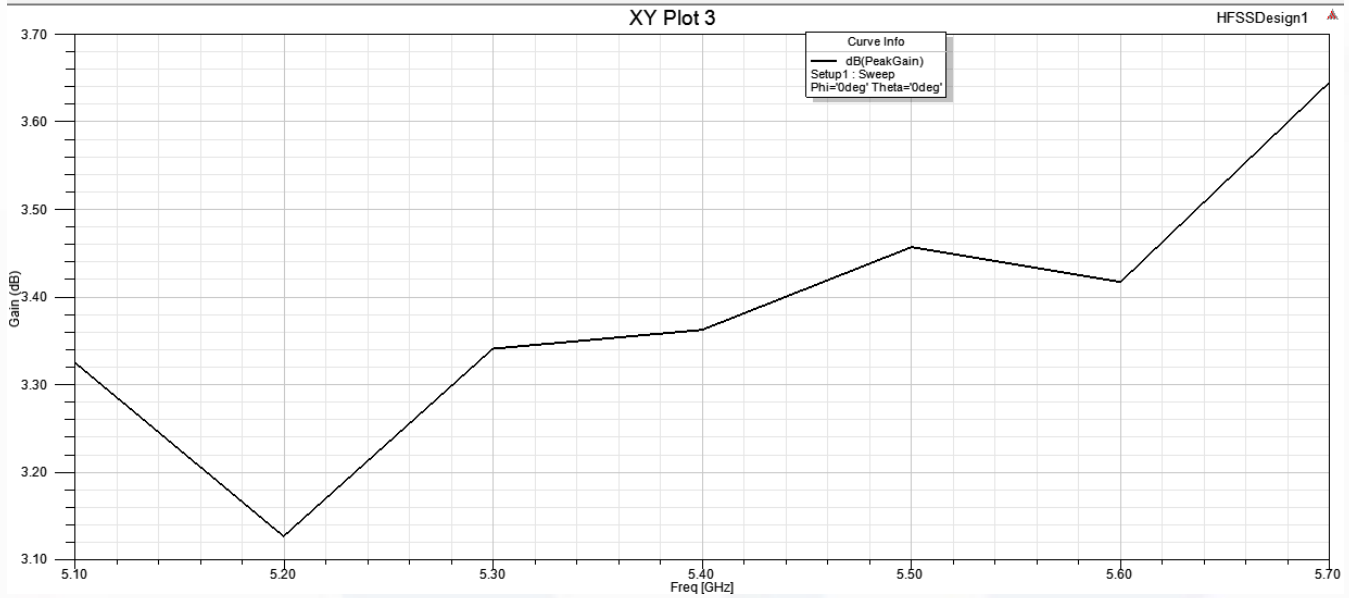
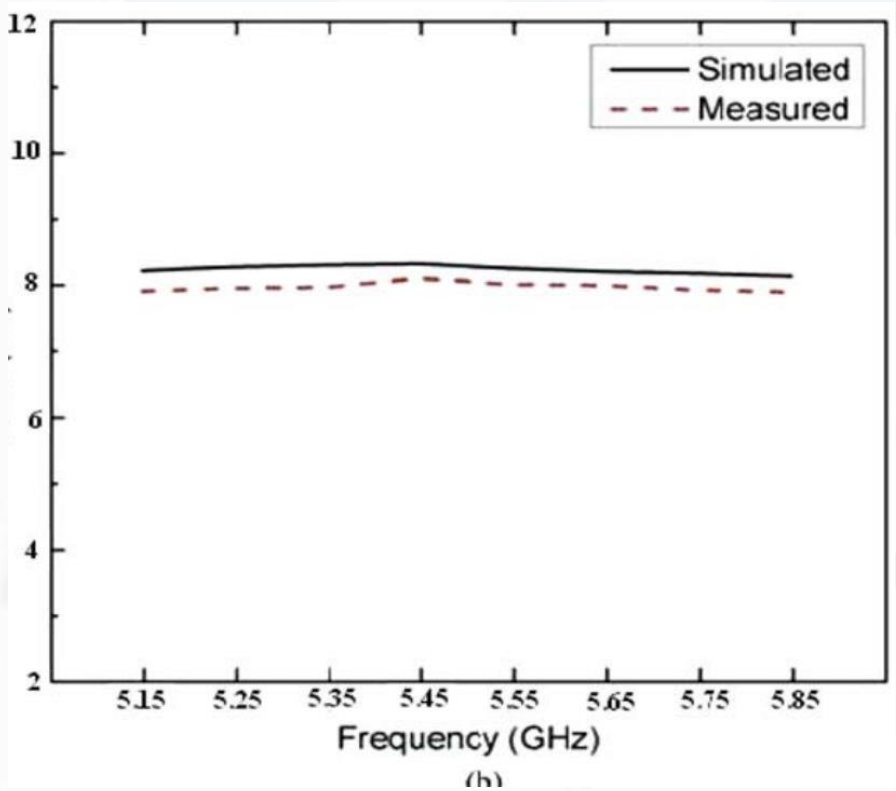
3.48
3.50
3.53
3.55
3.58
3.60
3.63
3.65
Freq [GHz]


Simulated
Measured
8
6
4
2
0
Gain(dB)
3.45
3.50
3.55
3.60
3.65
Frequency (GHz)
(a)


XY Plot 3
HFSSDesign1
Curve Info
dB(PeakGain)
Setup1 : Sweep
Phi='0deg' Theta='0deg'
Gain (dB)
3.70
3.60
3.50
3.40
3.30
3.20
3.10
5.10
5.20
5.30
5.40
5.50
5.60
5.70
Freq [GHz]


Simulated
Measured
12
10
8
6
4
2
5.15
5.25
5.35
5.45
5.55
5.65
5.75
5.85
Frequency (GHz)

(b)