BSSNET2A-115W 17BSS
Off-Axis Antenna Performance

CONUS Beam Maximum Allowable EIRP / Antenna Gain[1] to Meet -117dBW/m^2/100KHz

CONUS BEAM	
Satellite Location° WL	-115.00
Nearest DBS Satellite Location° WL	-118.80
Miniumum Spacing (w/Station Keeping @+--0.05)	3.70
Max PFD Flux Density, -117 dBW/m^2/100 kHz	-117.0
Channel Bandwidth, MHz	26.0
Effective Bandwidth, dB-100 kHz	24.1
PFD Flux Density Allowed per Channel, dBW/m^2	-92.9
R, Radial Distance to GEO, km	42,164.0
Min. Angle of Separation between Satellites, deg	3.70
Range between Satellites, km	2722.8
Spreading factor, dB/ m^2	-139.7
Atmospheric loss, dB	0
Maximum EIRP Allowed at Minimum Separation, dBW	46.8
Peak Satellite EIRP, dBW[2]	60.2
Boresight Antenna Gain, dB[3]	37.1
Tx Power into Antenna, dBW	23.1
Max Antenna Gain to Meet Space Path Spec, dB	23.7
Max Off-Axis EIRP from Plots[4,] dBW	5.38
Max Antenna Gain from Plots, dB	-17.72
PFD / Ant Gain Margin, dB	41.5

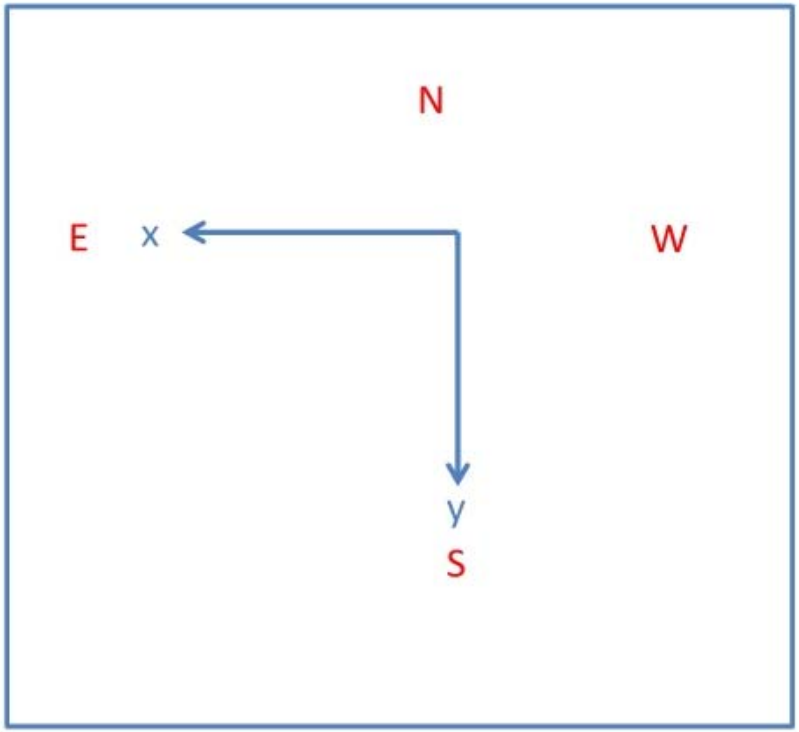
[1] As defined in FCC Section 25.264(a)

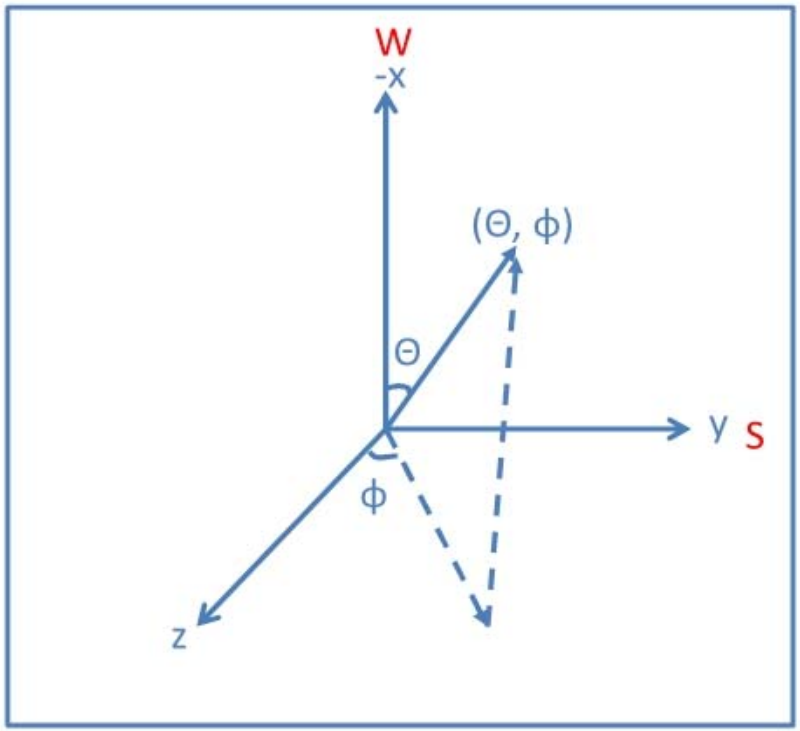
[2] from Schedule S7
temperature and life]

[3] from Schedule S7, column (c)

[4] Reference to Plot File: tx-17.5-rhcp--10.cut and tx-17.7-lhcp-0.cut

Coordinate System



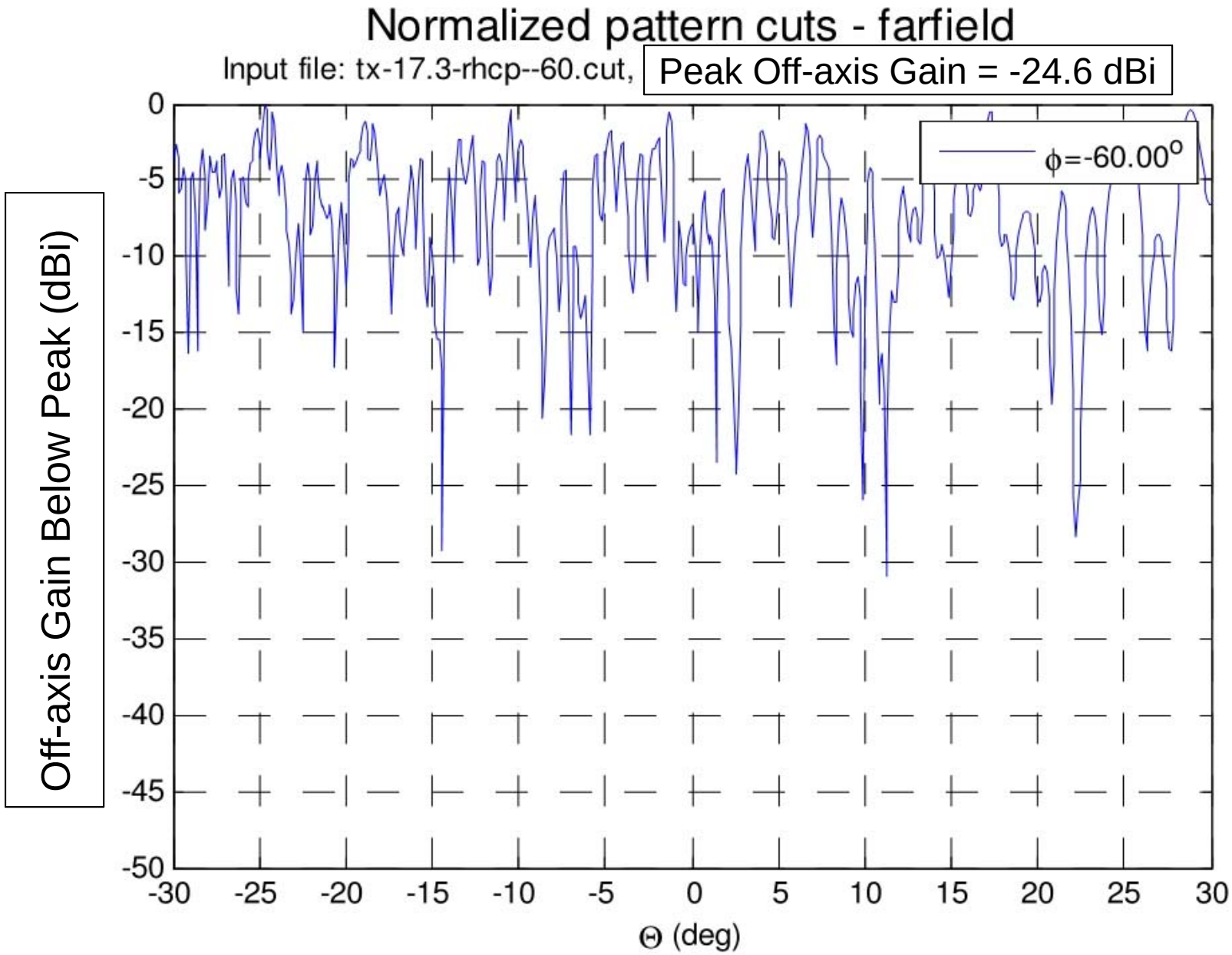


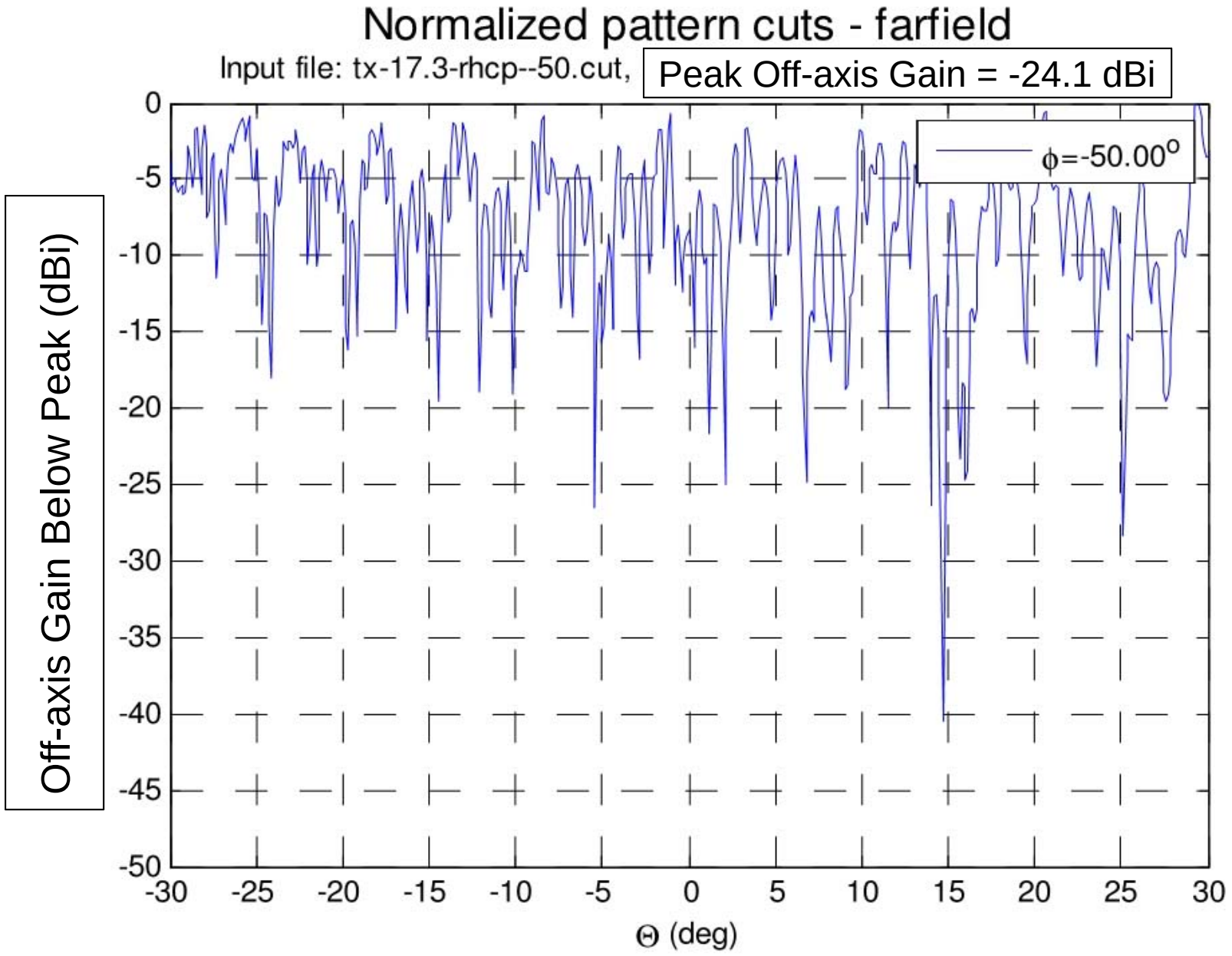
CONUS Beam, +X Axis Plots

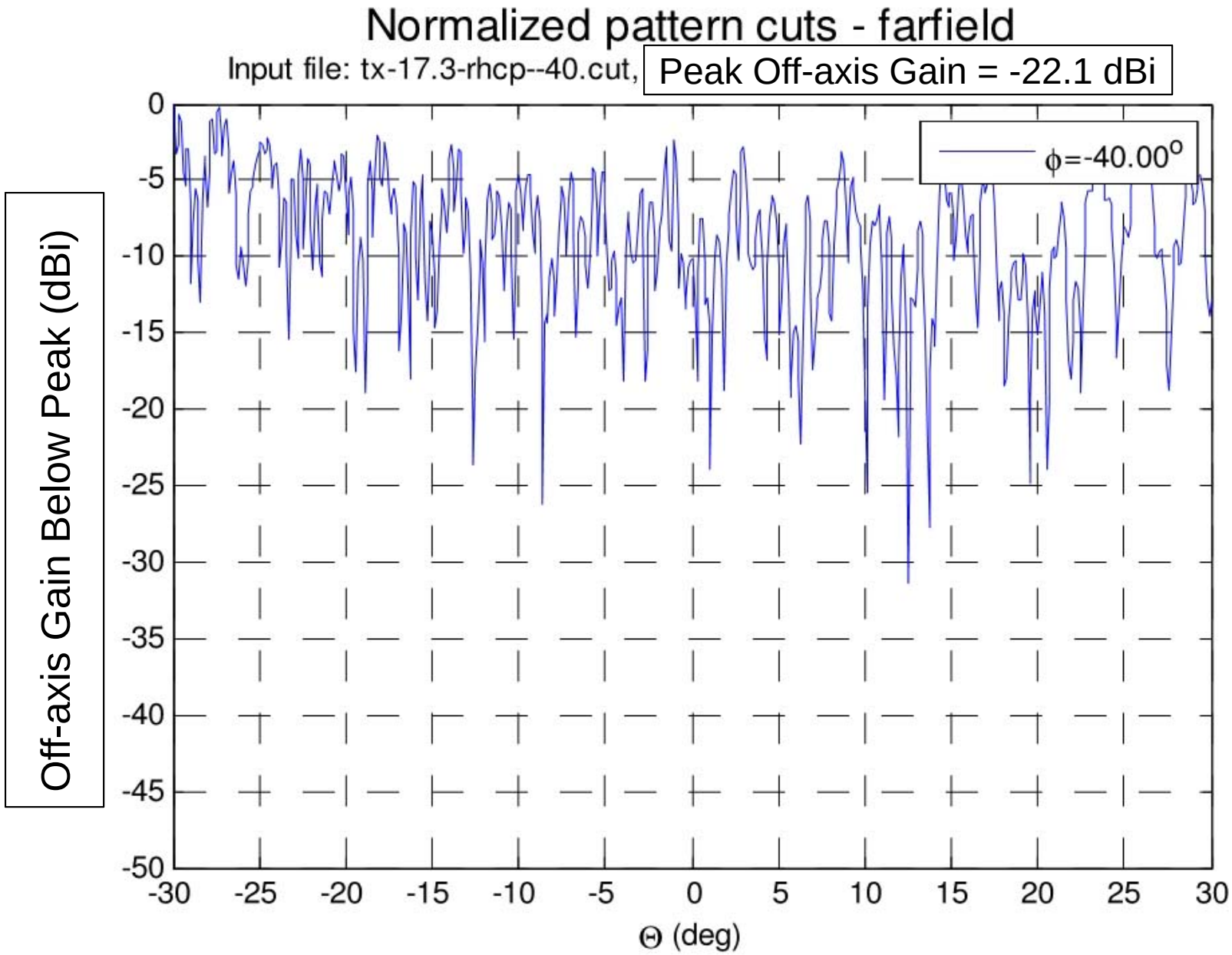
- Both polarizations; RHCP; LHC)
- $-30 < \Theta < 30$ (Θ=0: +X-axis)
- $-60 < \phi < 60$
- Freqs = 17.305, 17.5 and 17.695 GHZ

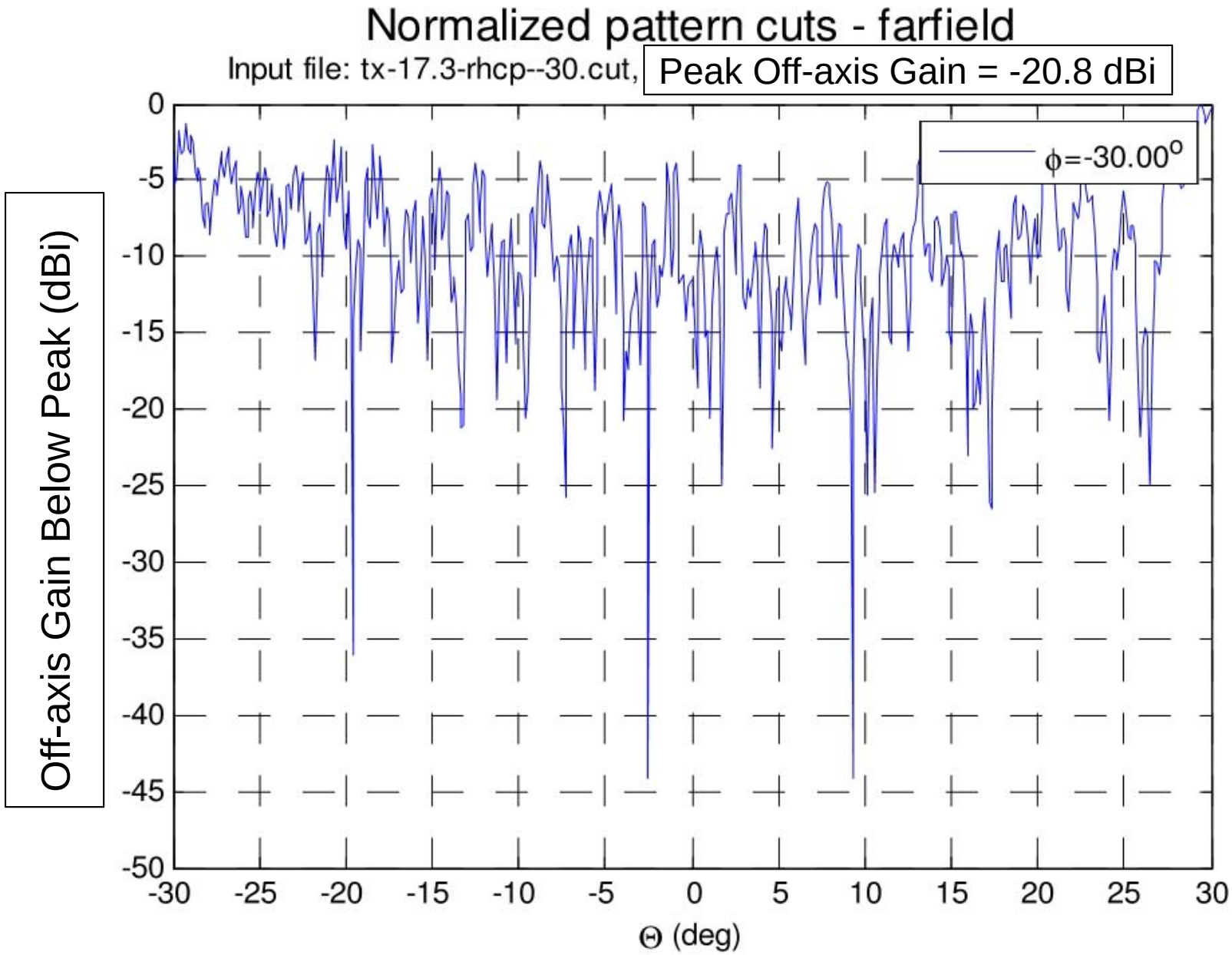
- The zero reference line on each plot is the peak off-axis gain in the title of the chart
- All off-axis gain levels are well below the 23.7 dBi level at 3.7^{o} separation (>41 dB margin)

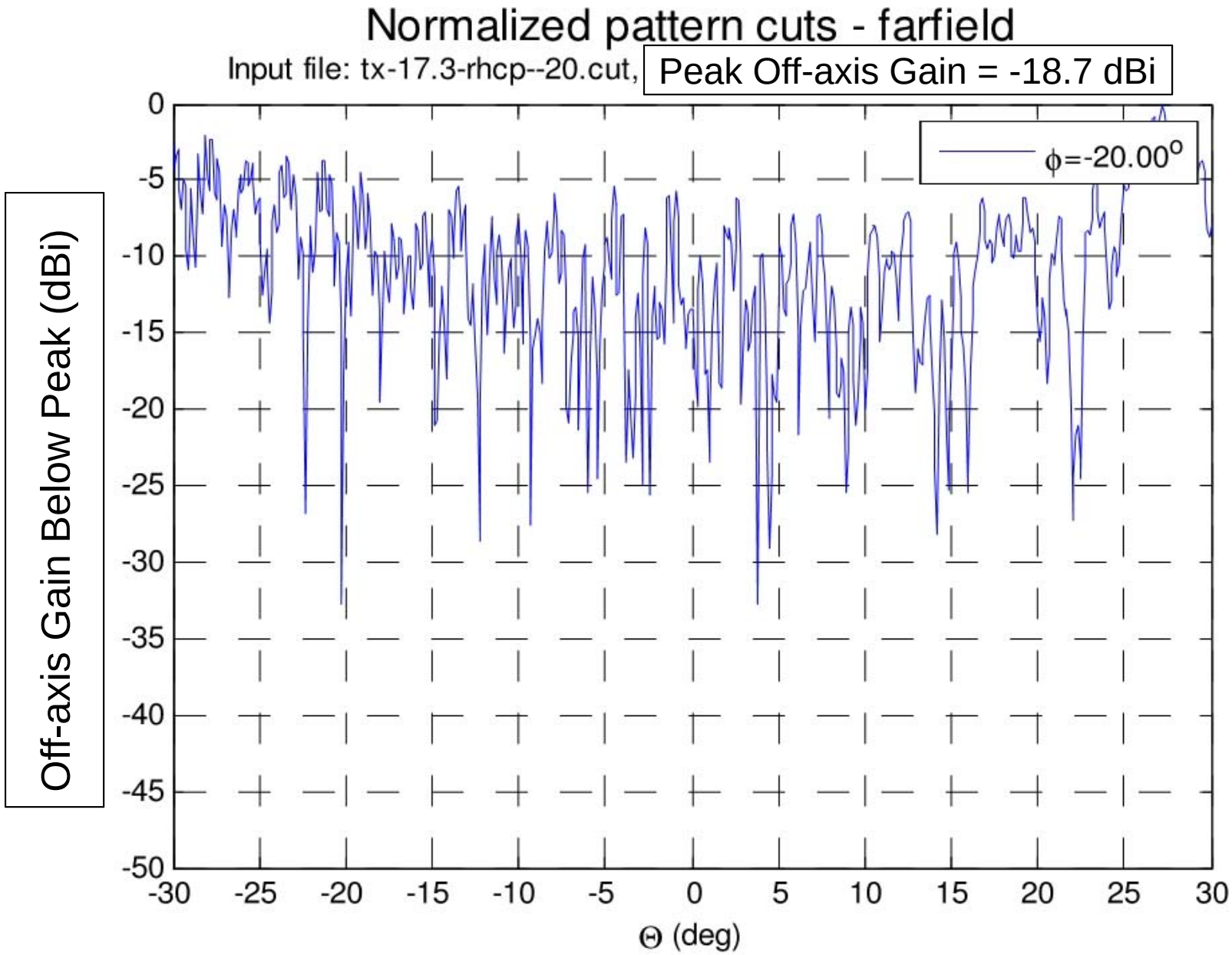
RHCP = 17.305 GHz


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp--60.cut,
Peak Off-axis Gain = -24.6 dBi
Off-axis Gain Below Peak (dBi)
φ=-60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp--50.cut,
Peak Off-axis Gain = -24.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp--40.cut,
Peak Off-axis Gain = -22.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp--30.cut,
Peak Off-axis Gain = -20.8 dBi
Off-axis Gain Below Peak (dBi)
φ=-30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp--20.cut,
Peak Off-axis Gain = -18.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
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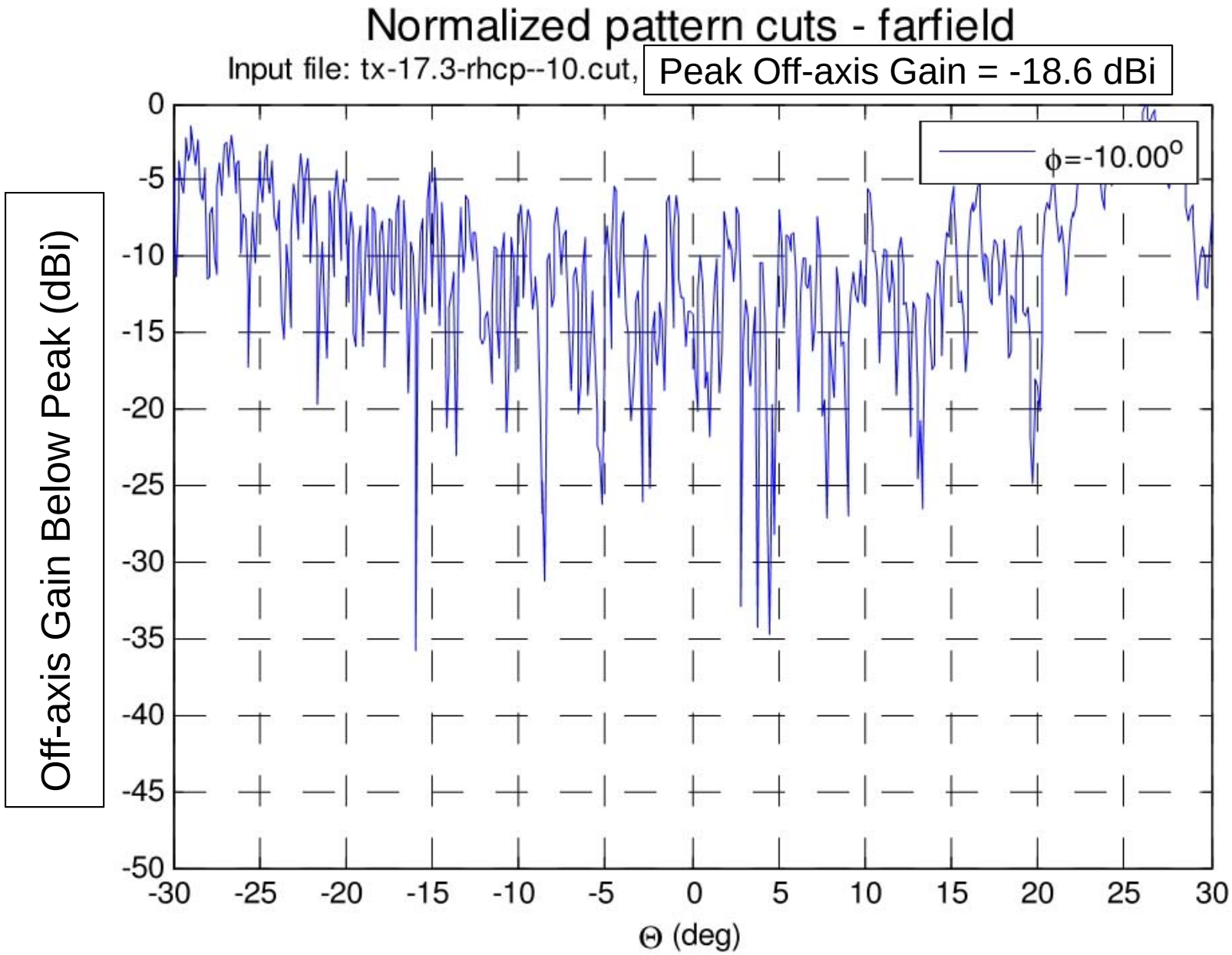
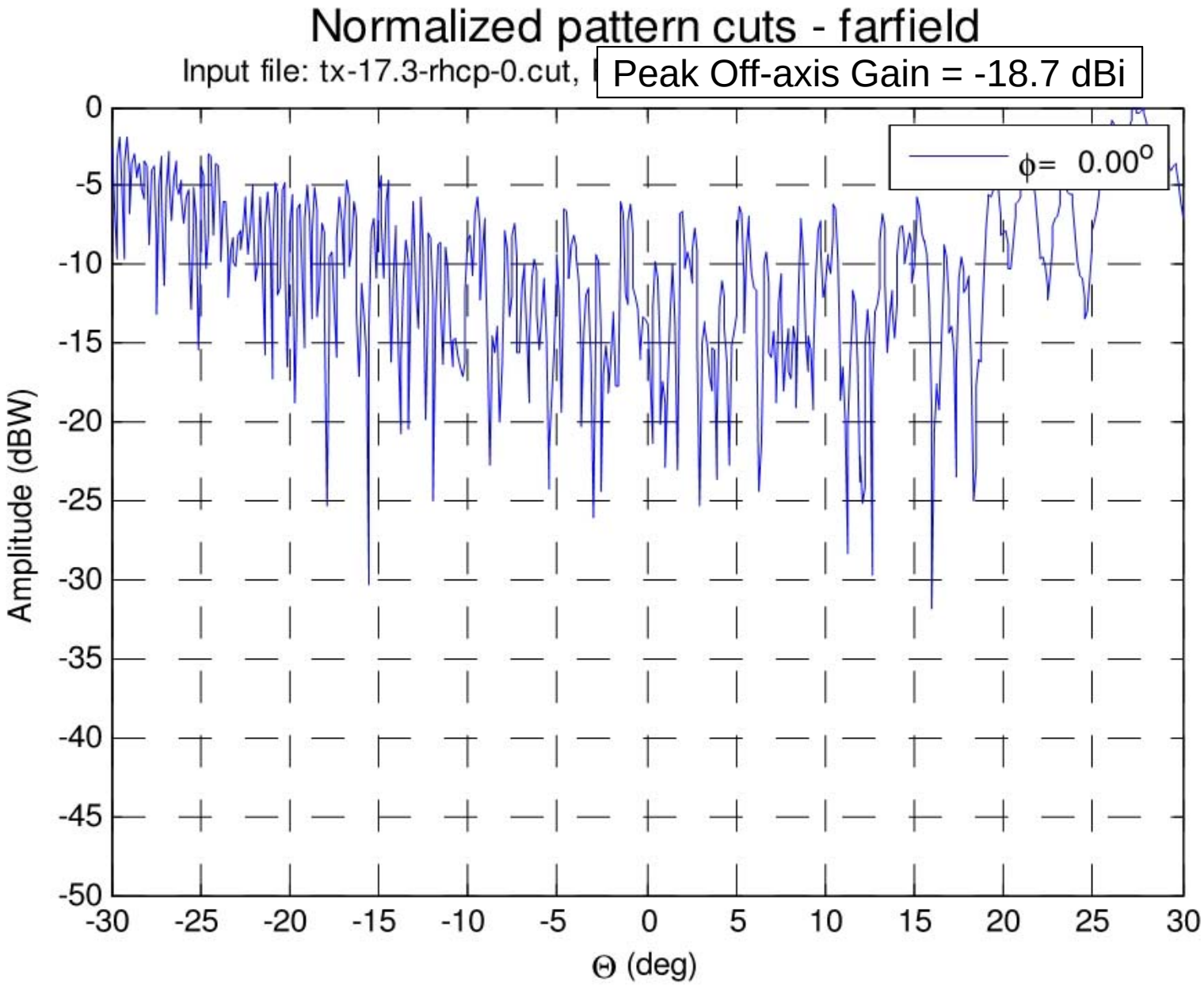
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp--10.cut,
Peak Off-axis Gain = -18.6 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp-0.cut,
Peak Off-axis Gain = -18.7 dBi
ϕ= 0.00°
Amplitude (dBW)
Θ (deg)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
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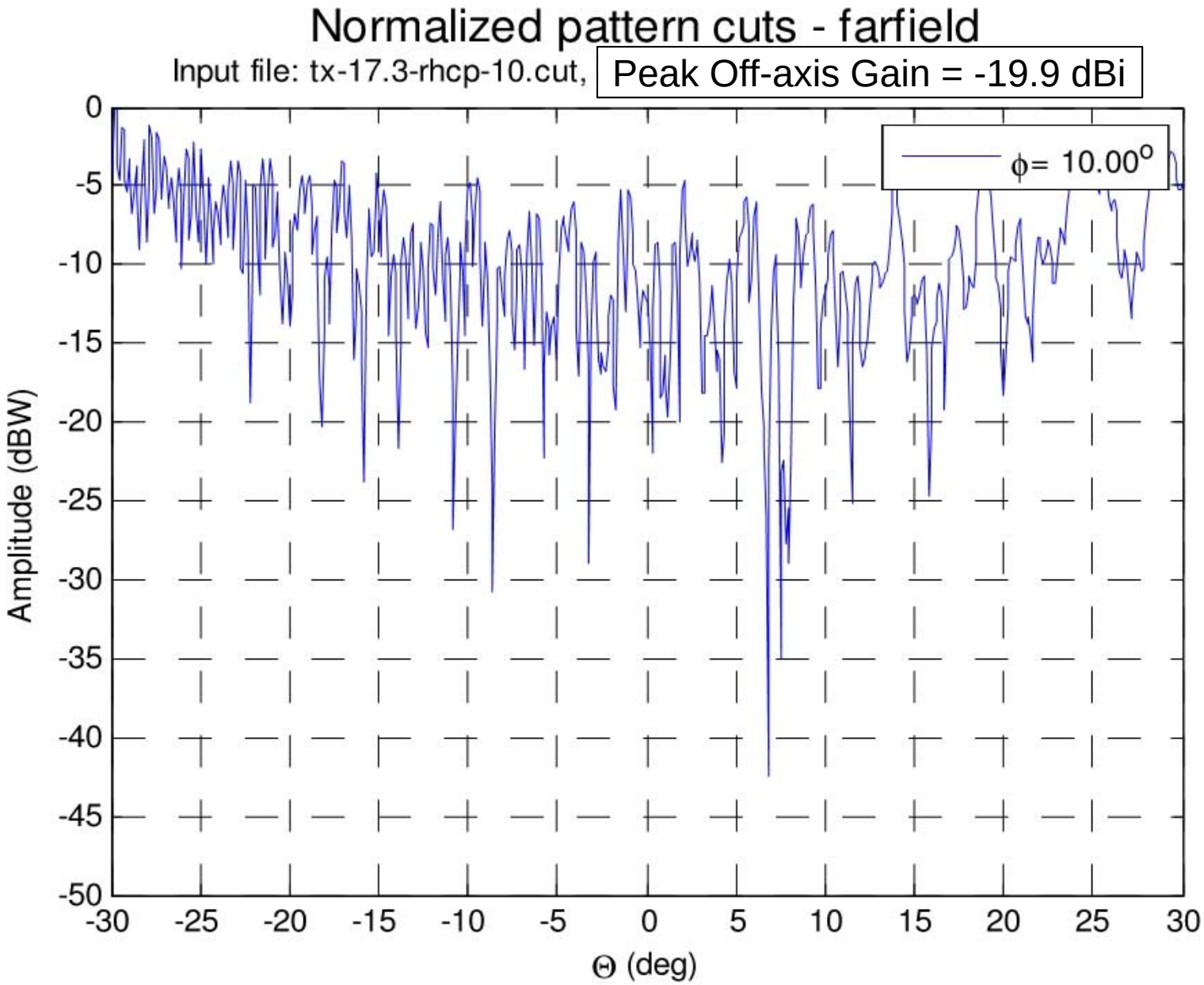
10
15
20
25
30


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp-10.cut,
Peak Off-axis Gain = -19.9 dBi
ϕ= 10.00°
Amplitude (dBW)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
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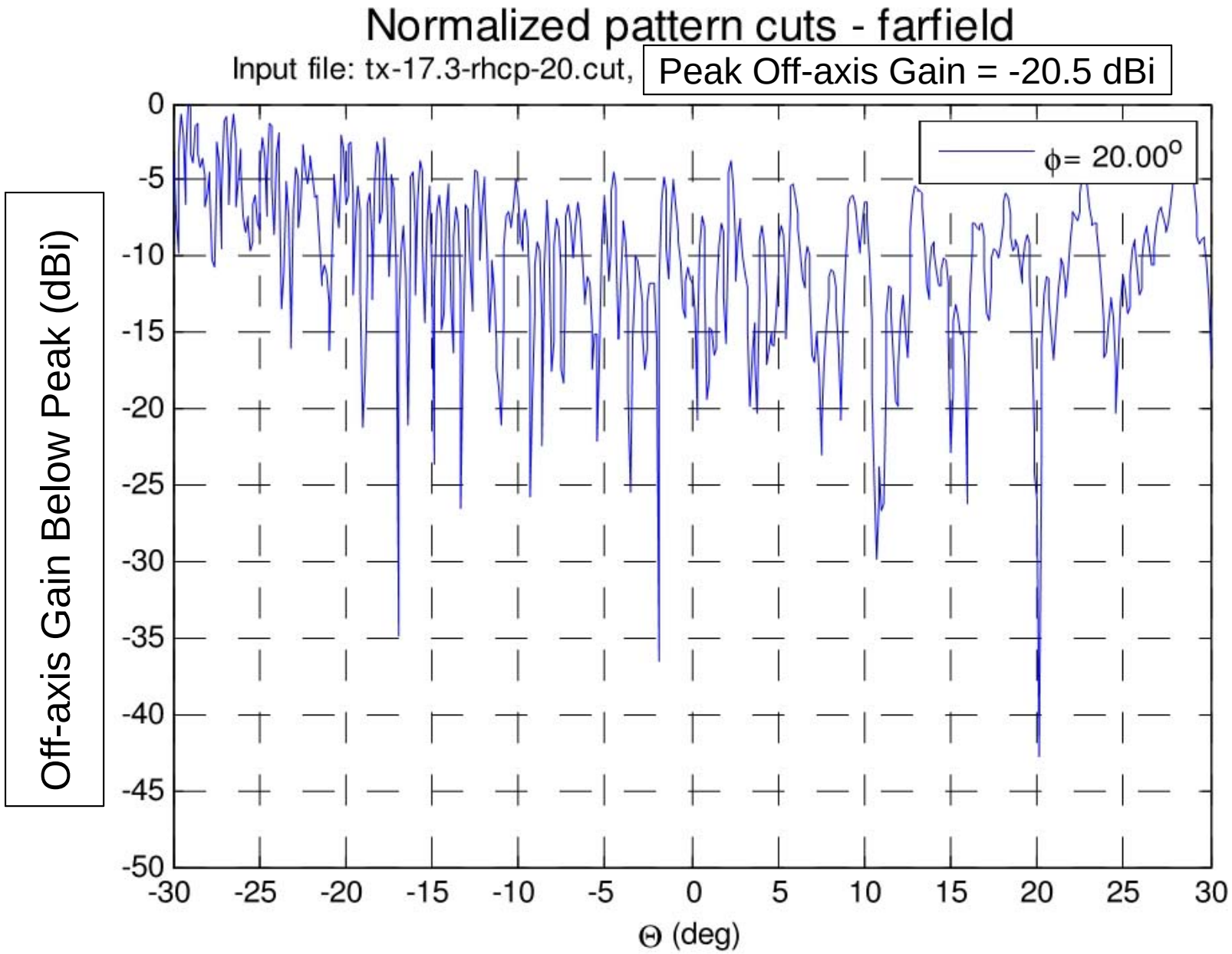
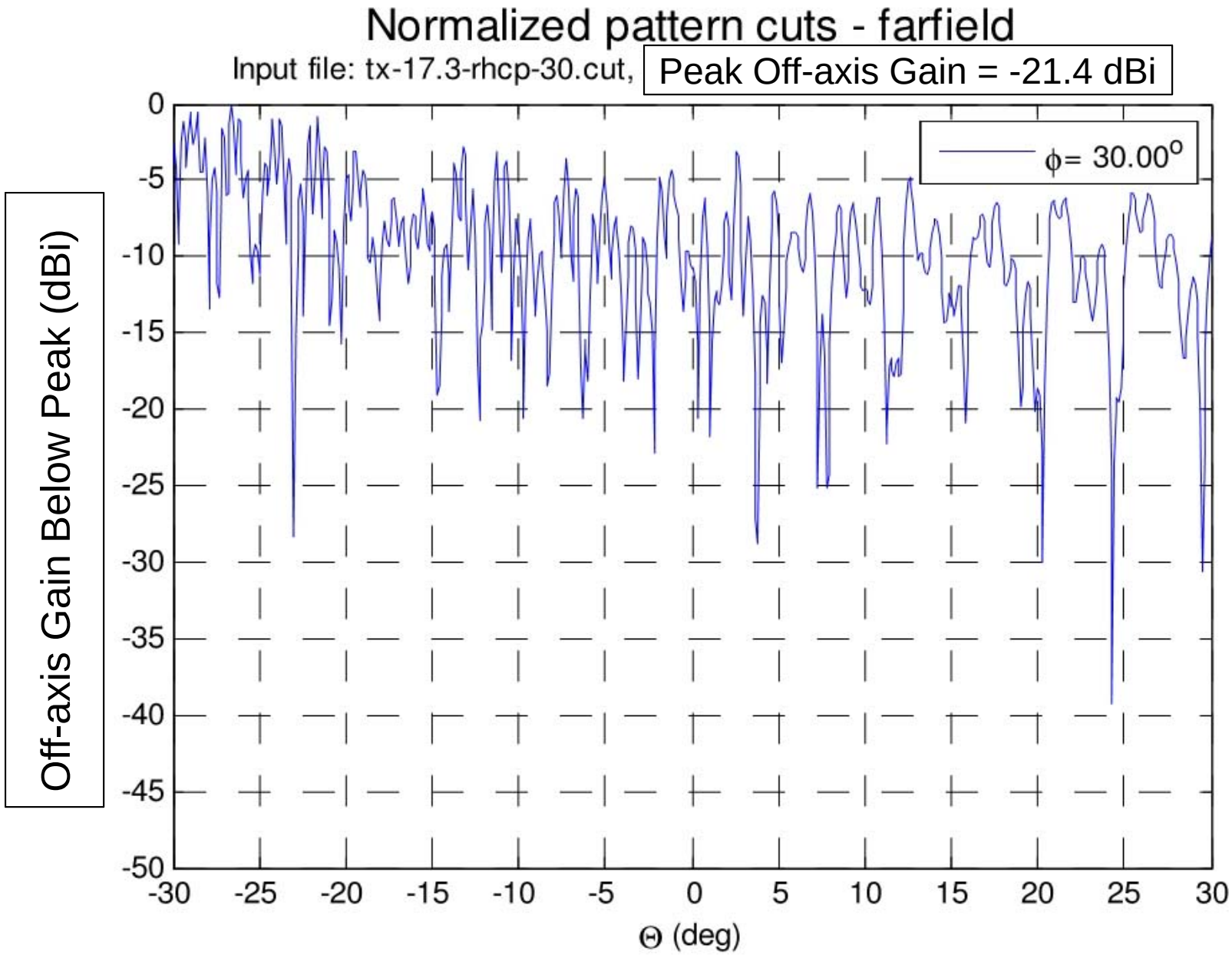
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp-20.cut,
Peak Off-axis Gain = -20.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp-30.cut,
Peak Off-axis Gain = -21.4 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
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-25
-20
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-10
-5
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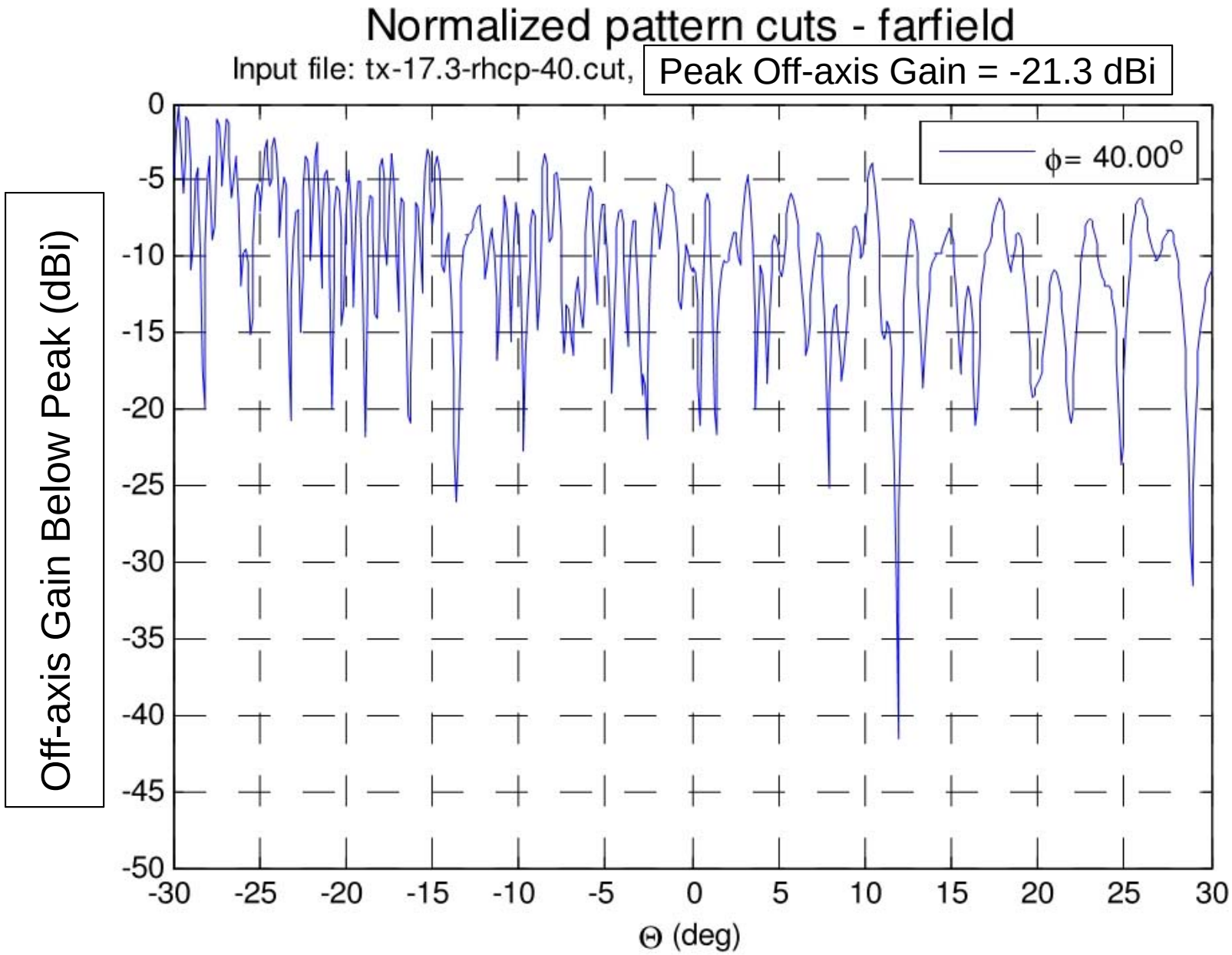
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp-40.cut,
Peak Off-axis Gain = -21.3 dBi
ϕ= 40.00°
Off-axis Gain Below Peak (dBi)
0
-5
-10
-15
-20
-25
-30
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-50
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-5
0
5
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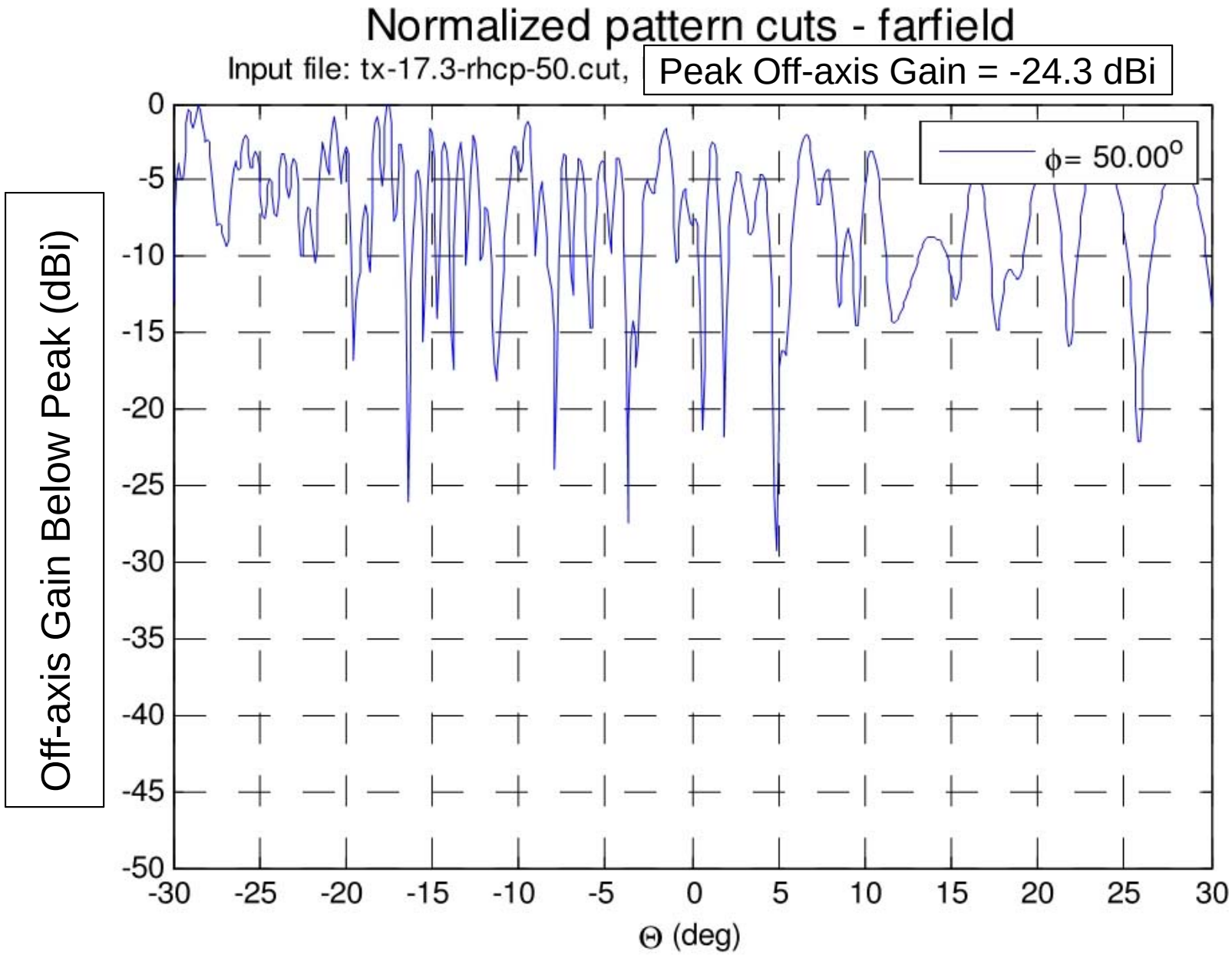
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp-50.cut,
Peak Off-axis Gain = -24.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
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-25
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-5
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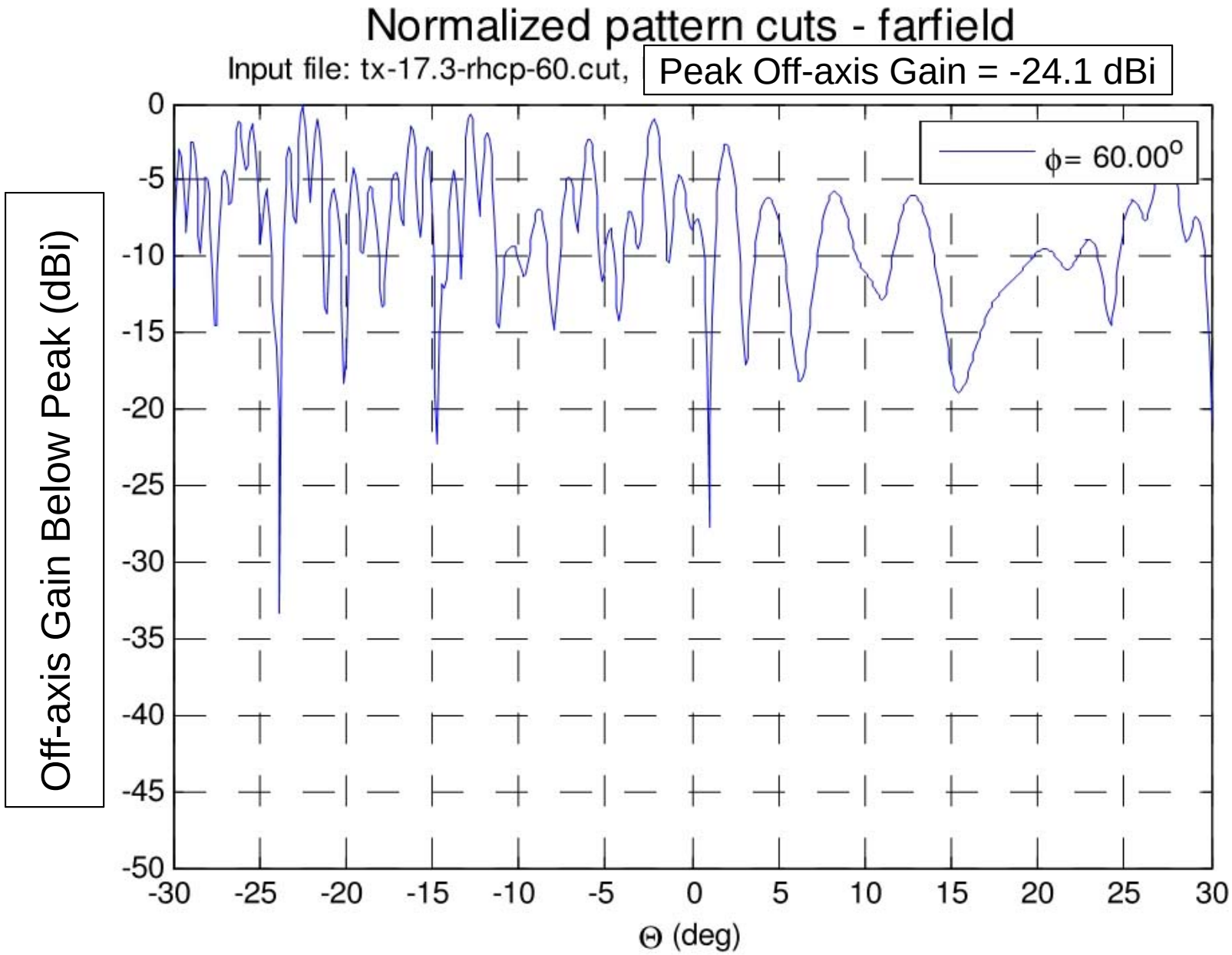
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-rhcp-60.cut,
Peak Off-axis Gain = -24.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 60.00°
0
-5
-10
-15
-20
-25
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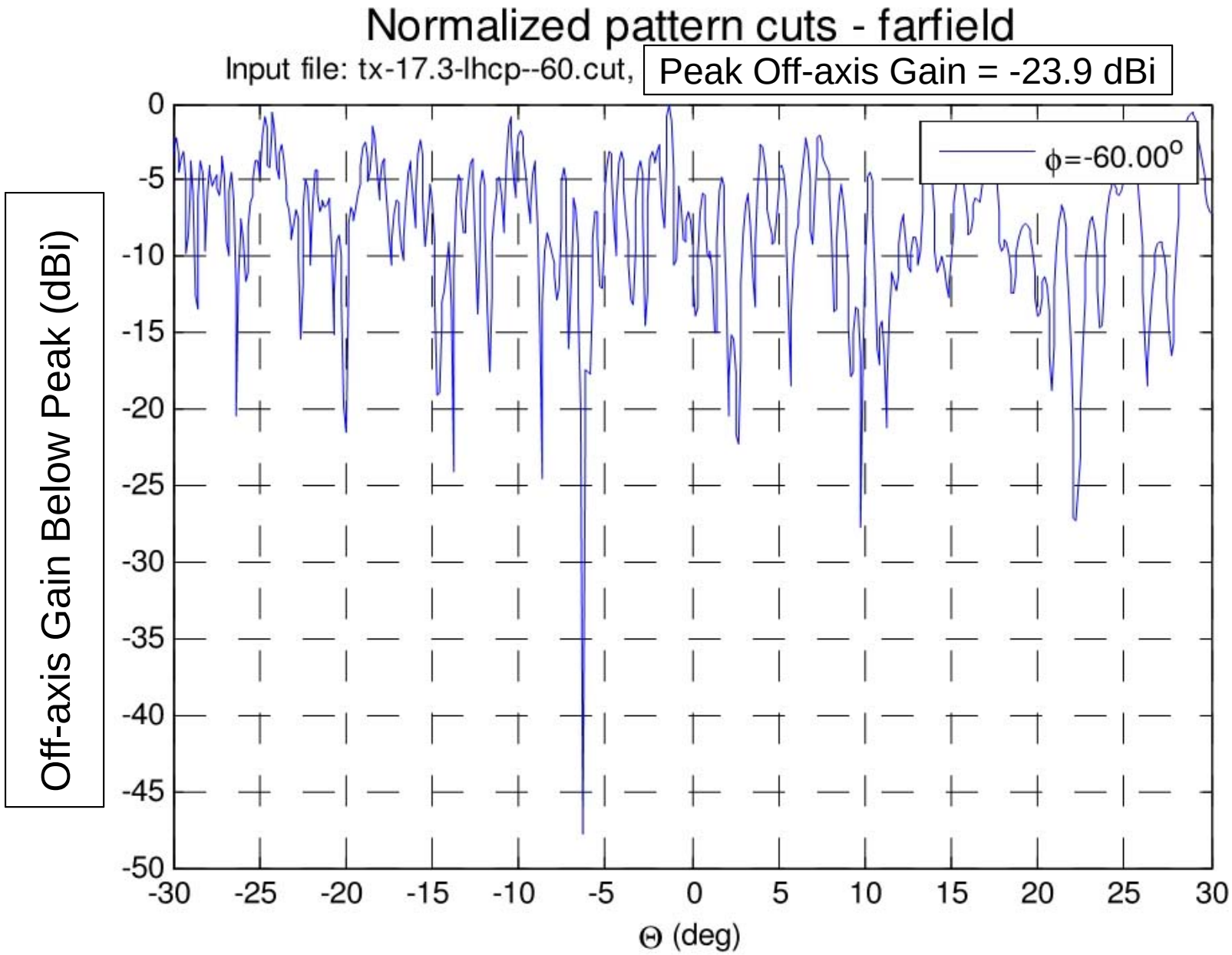
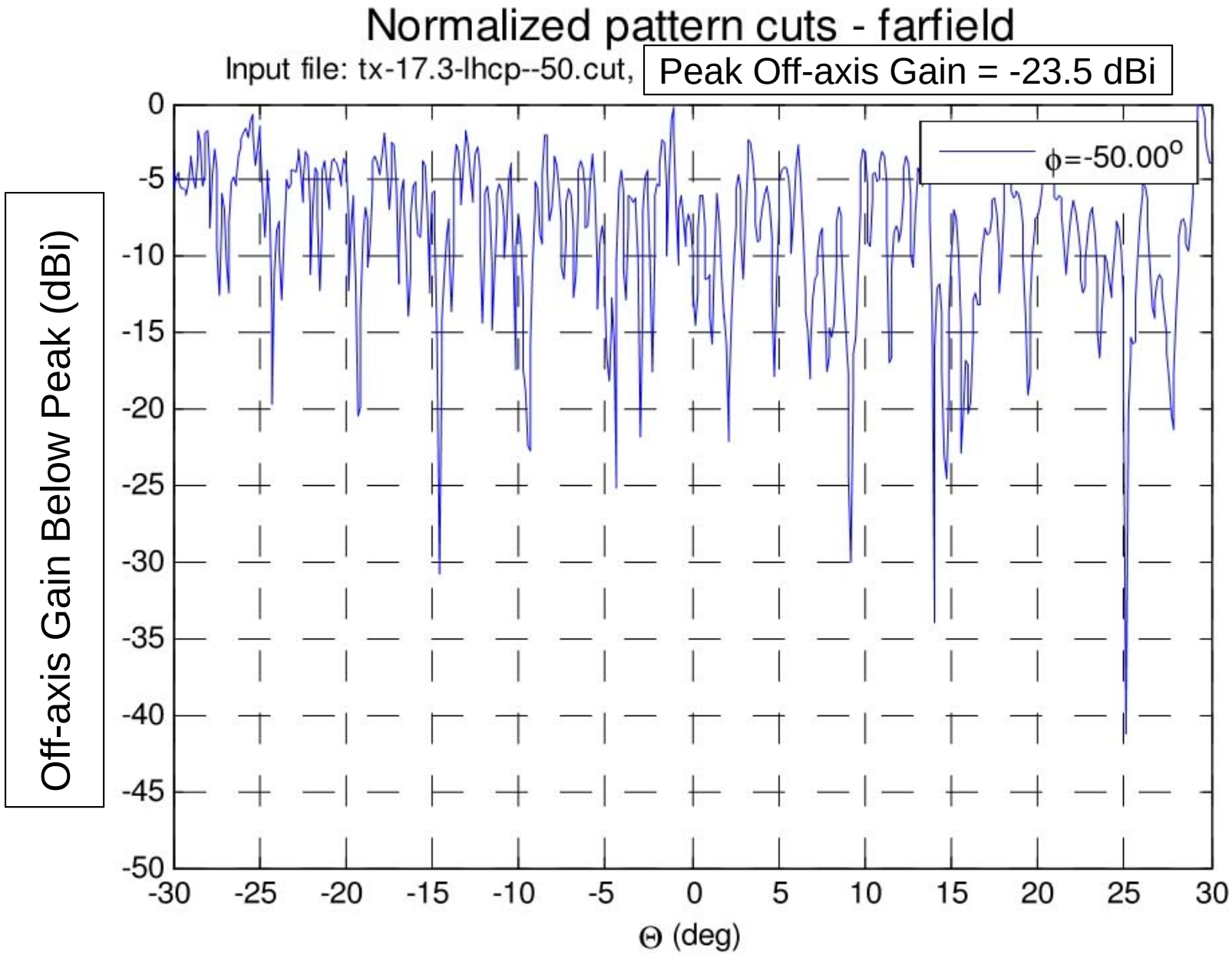
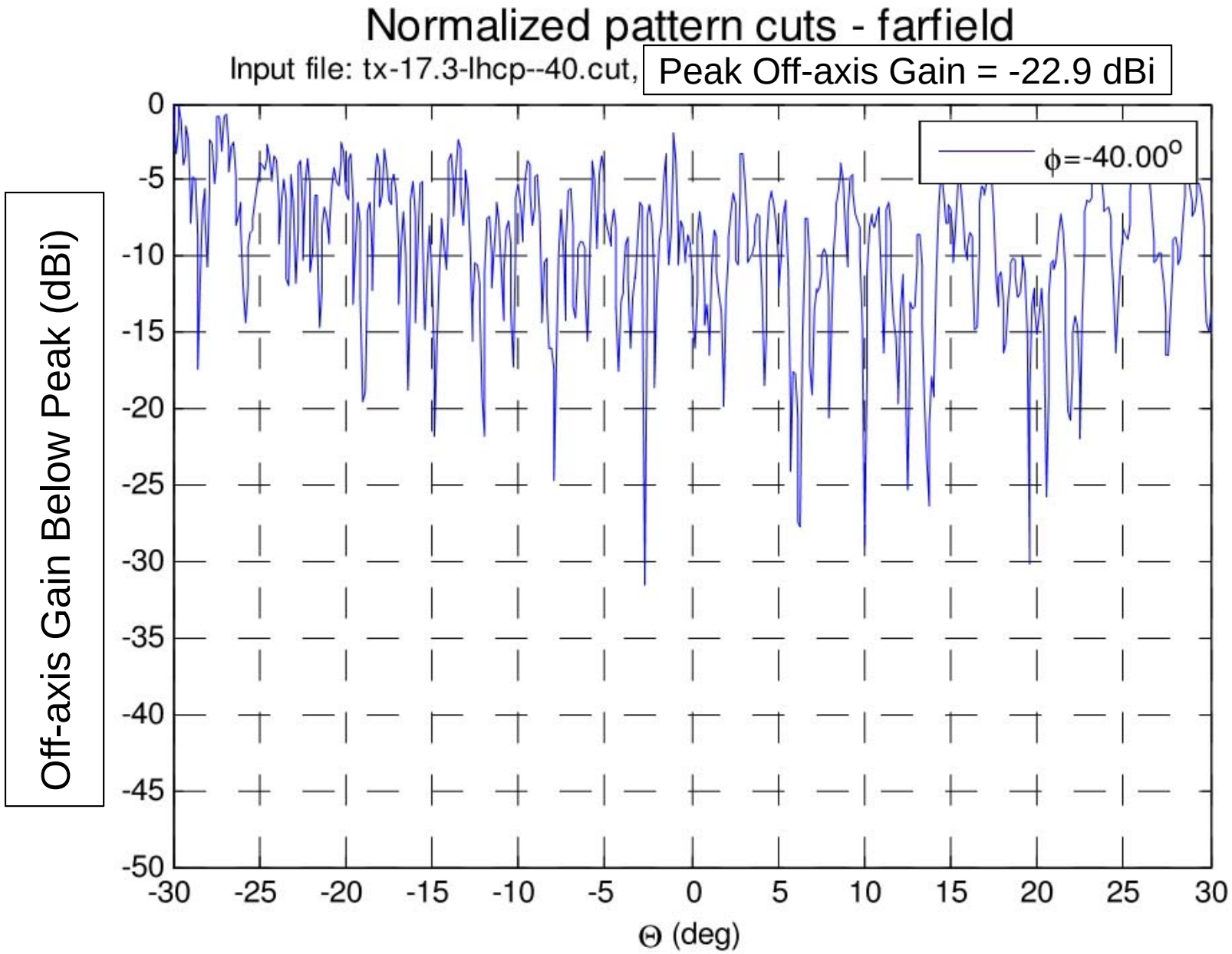
Θ (deg)

LHCP = 17.305 GHz


Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp--60.cut,
Peak Off-axis Gain = -23.9 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp--50.cut,
Peak Off-axis Gain = -23.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp--40.cut,
Peak Off-axis Gain = -22.9 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
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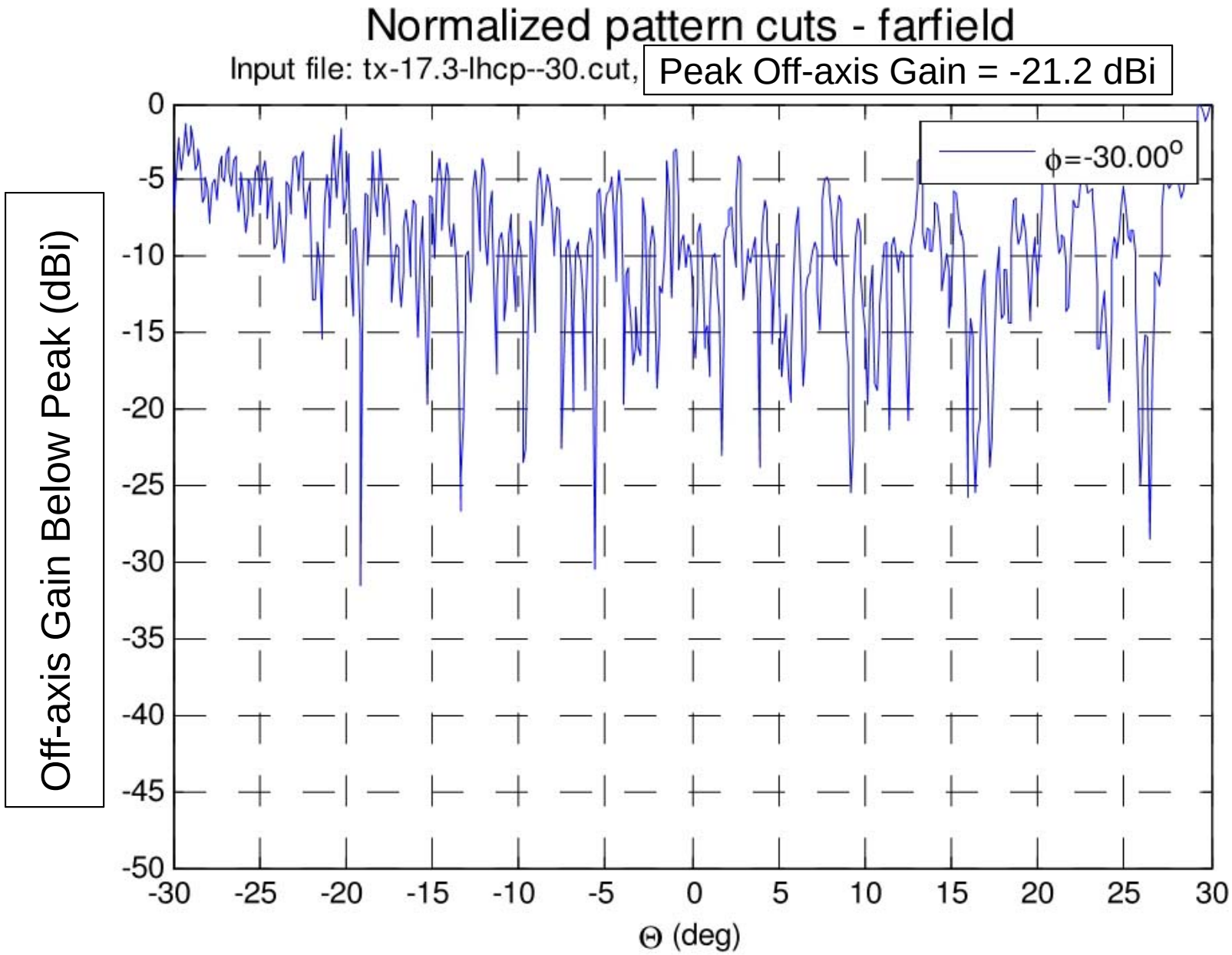
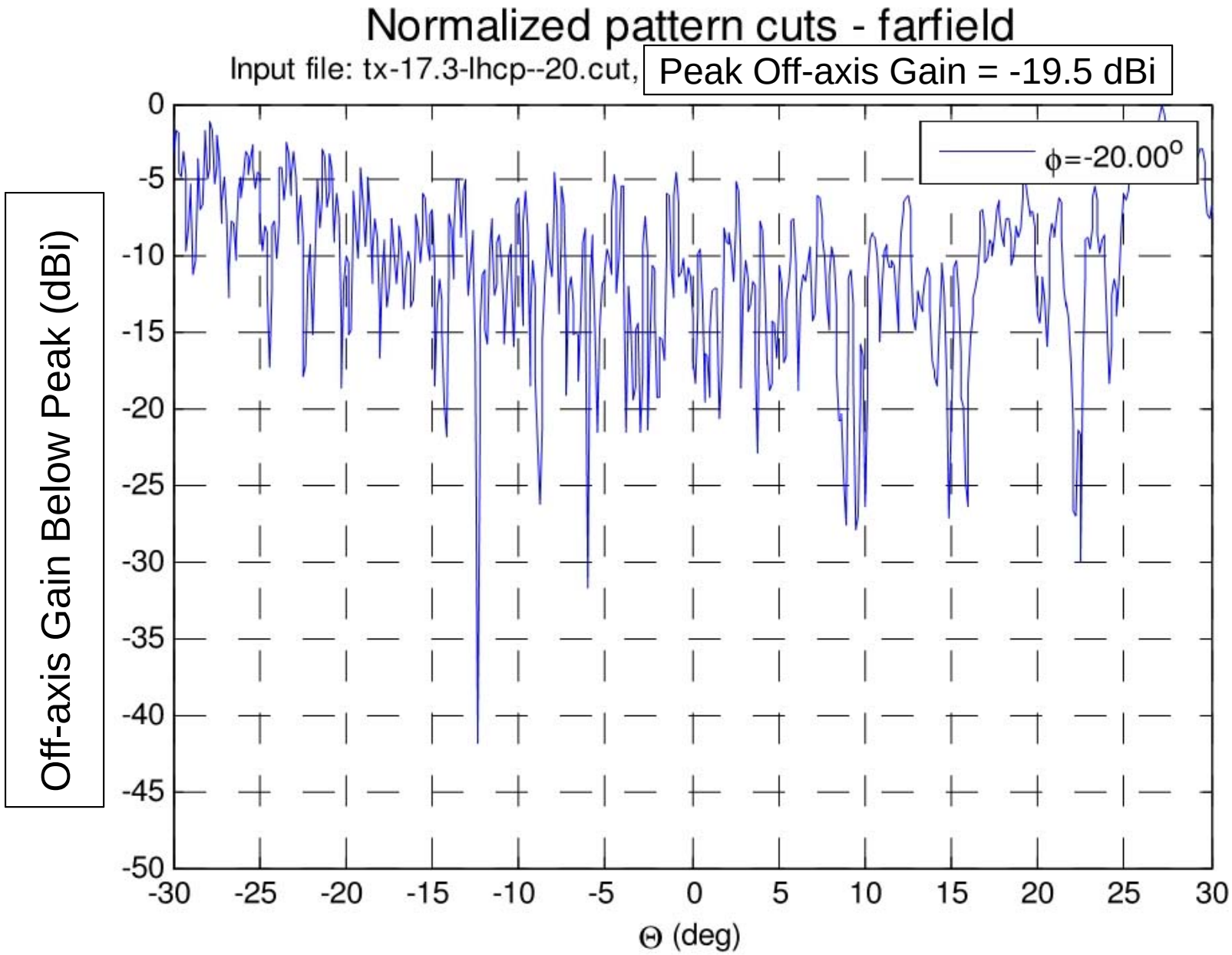
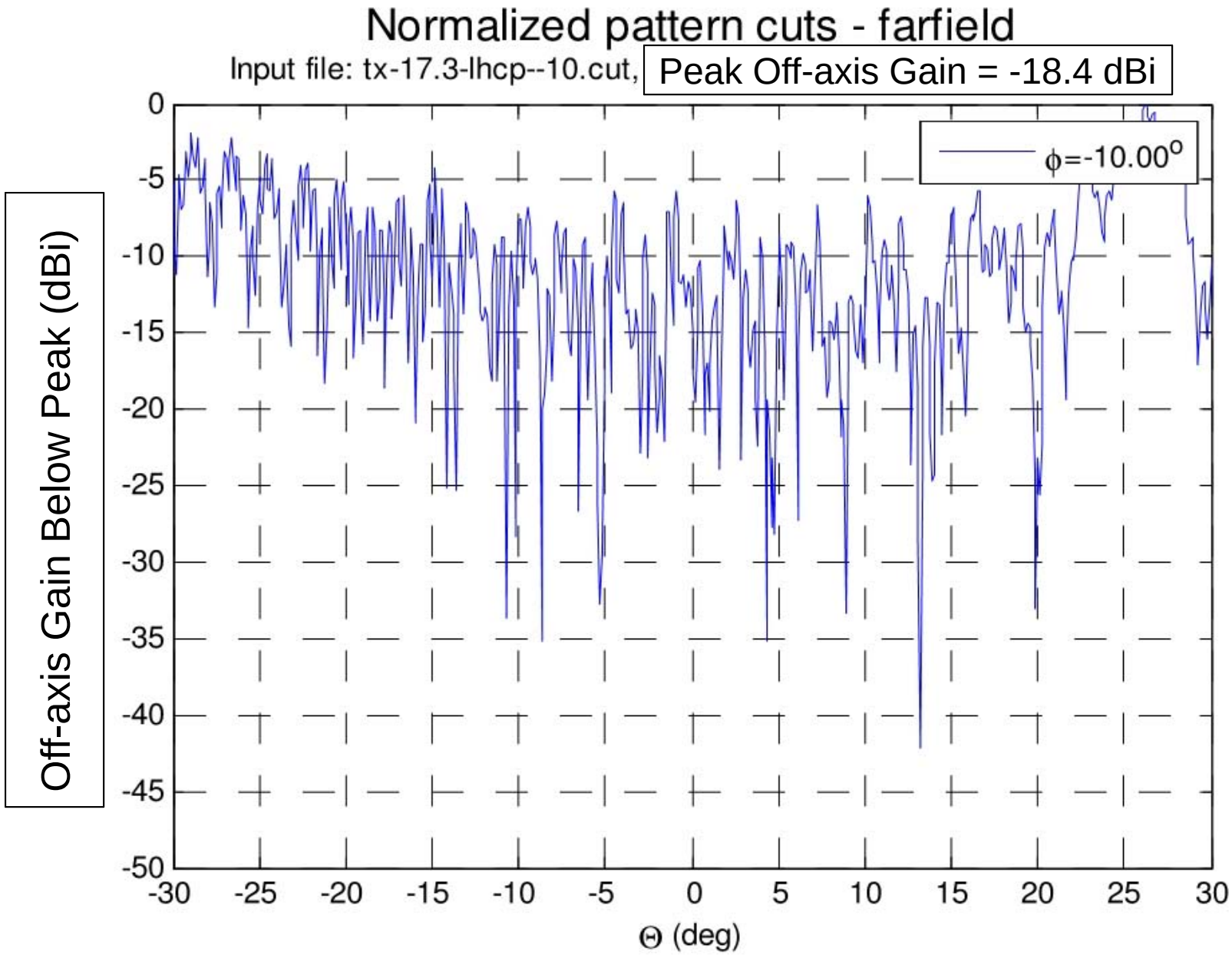
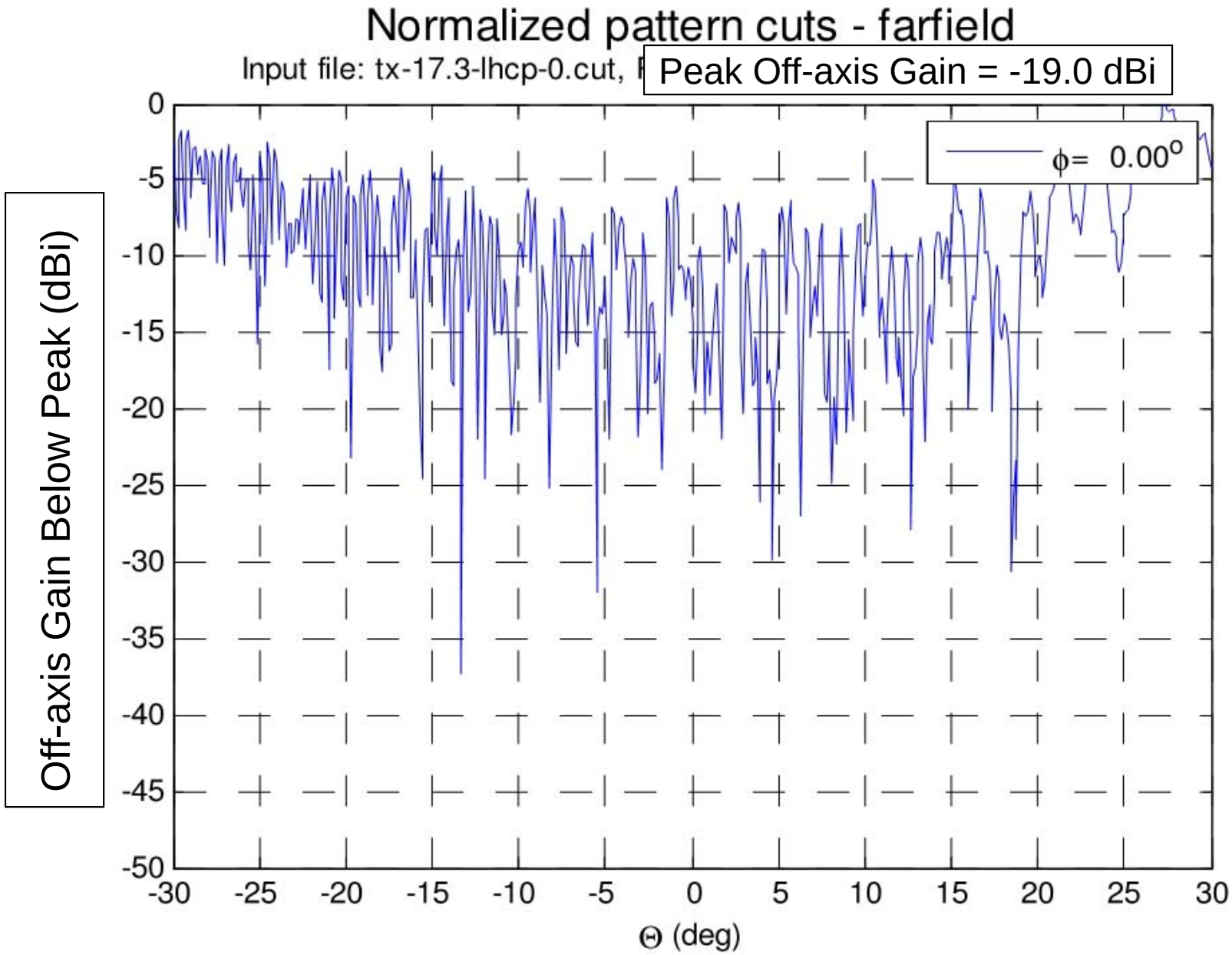
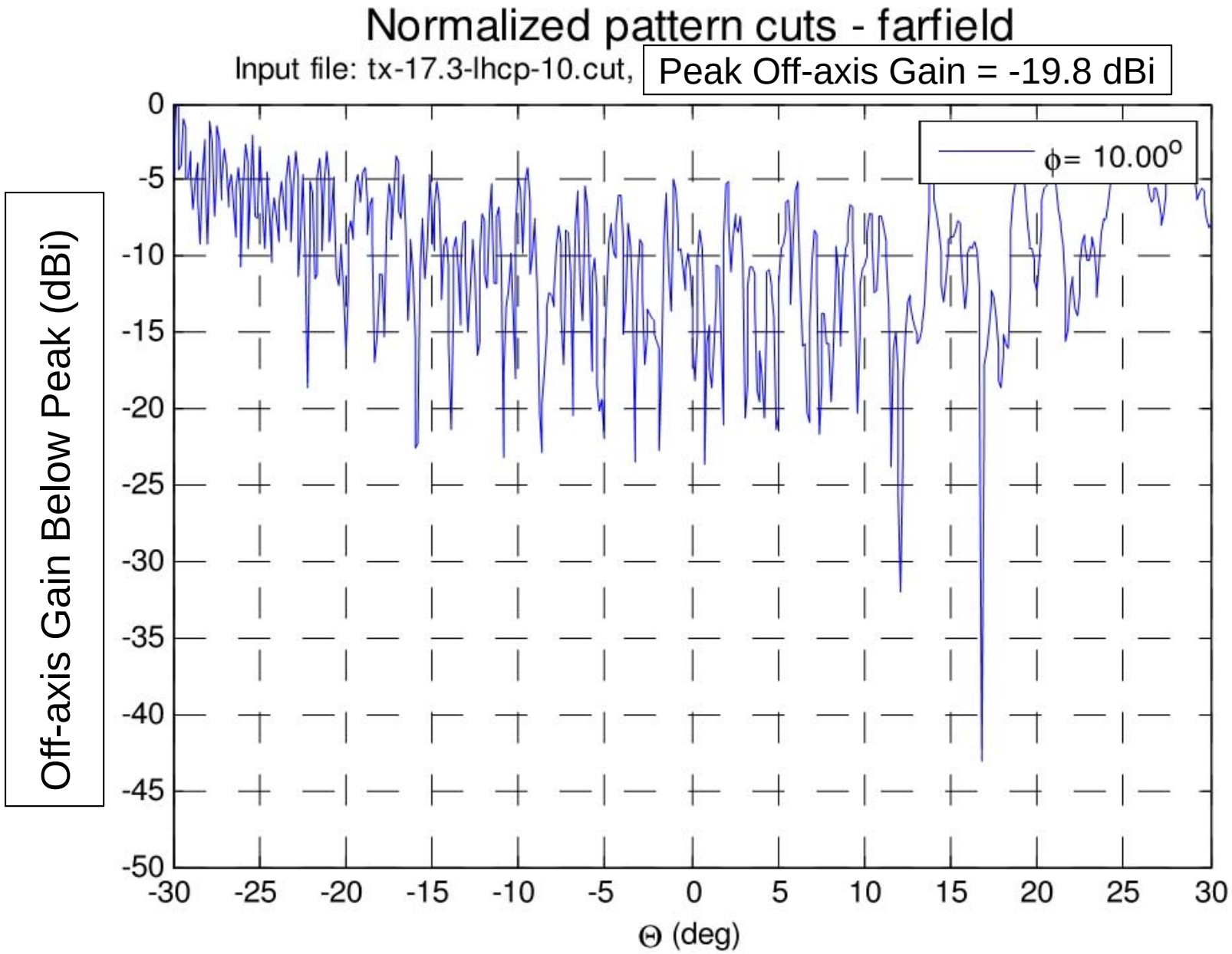
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

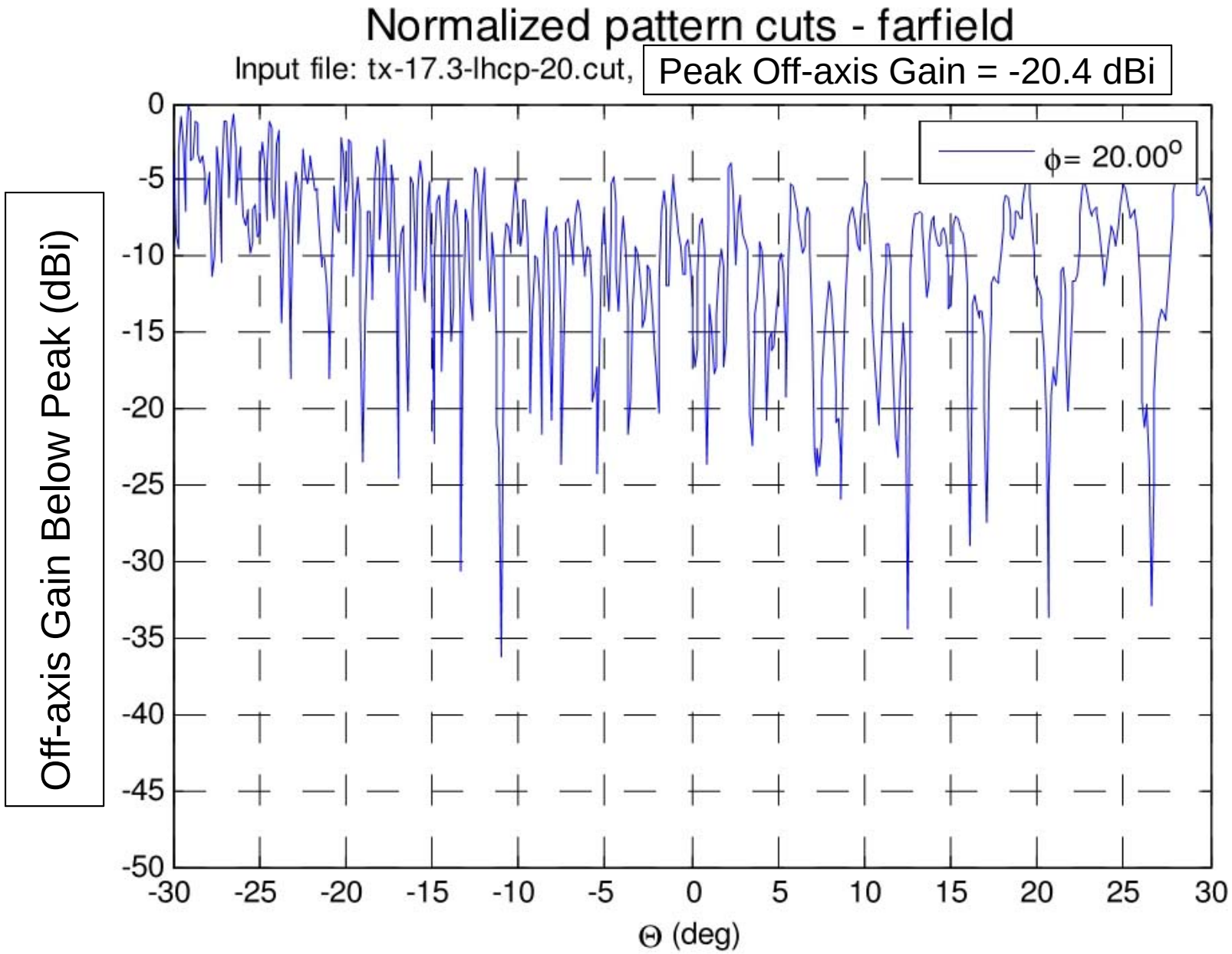

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp--30.cut,
Peak Off-axis Gain = -21.2 dBi
Off-axis Gain Below Peak (dBi)
φ=-30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

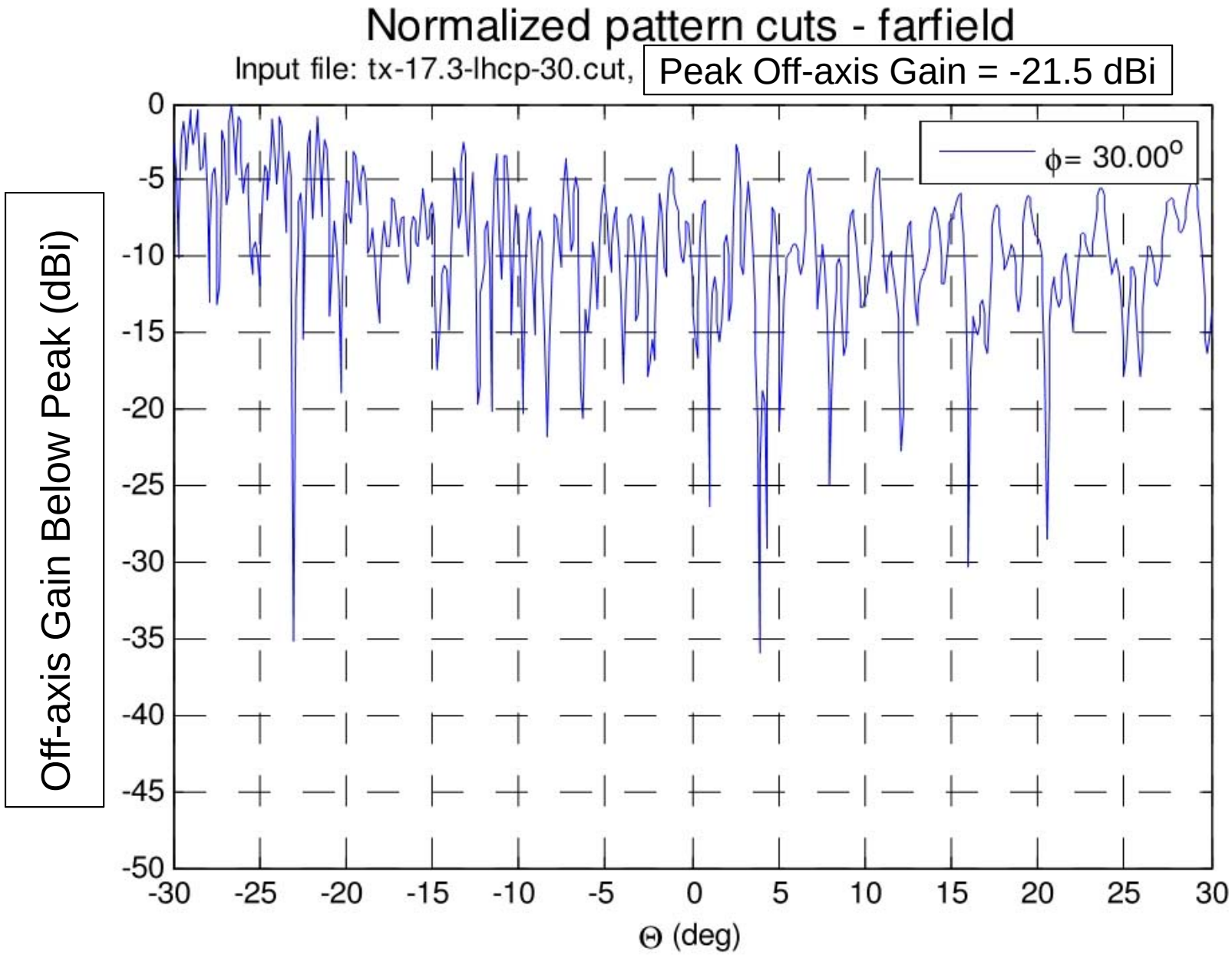

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp--20.cut,
Peak Off-axis Gain = -19.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

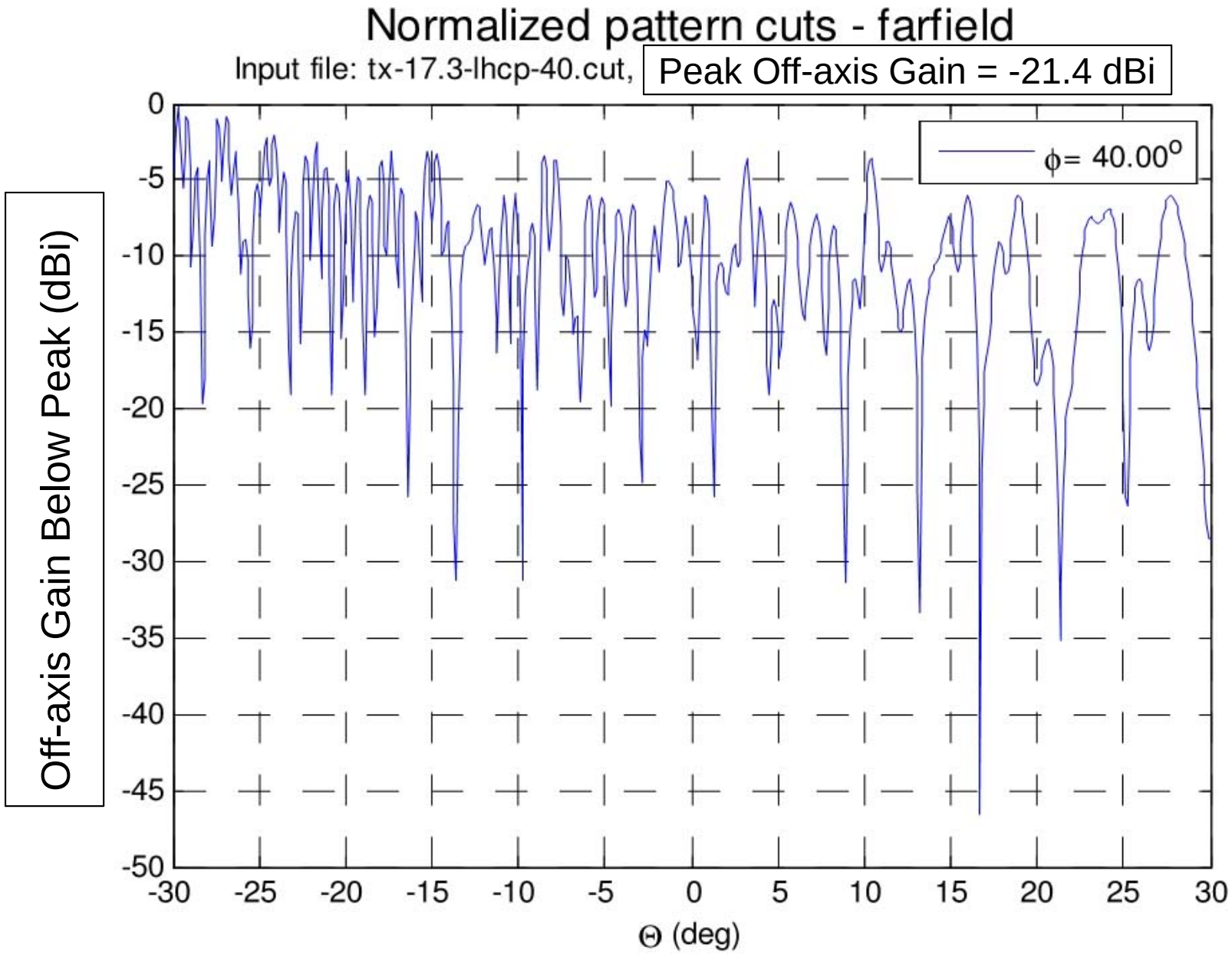

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp--10.cut,
Peak Off-axis Gain = -18.4 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

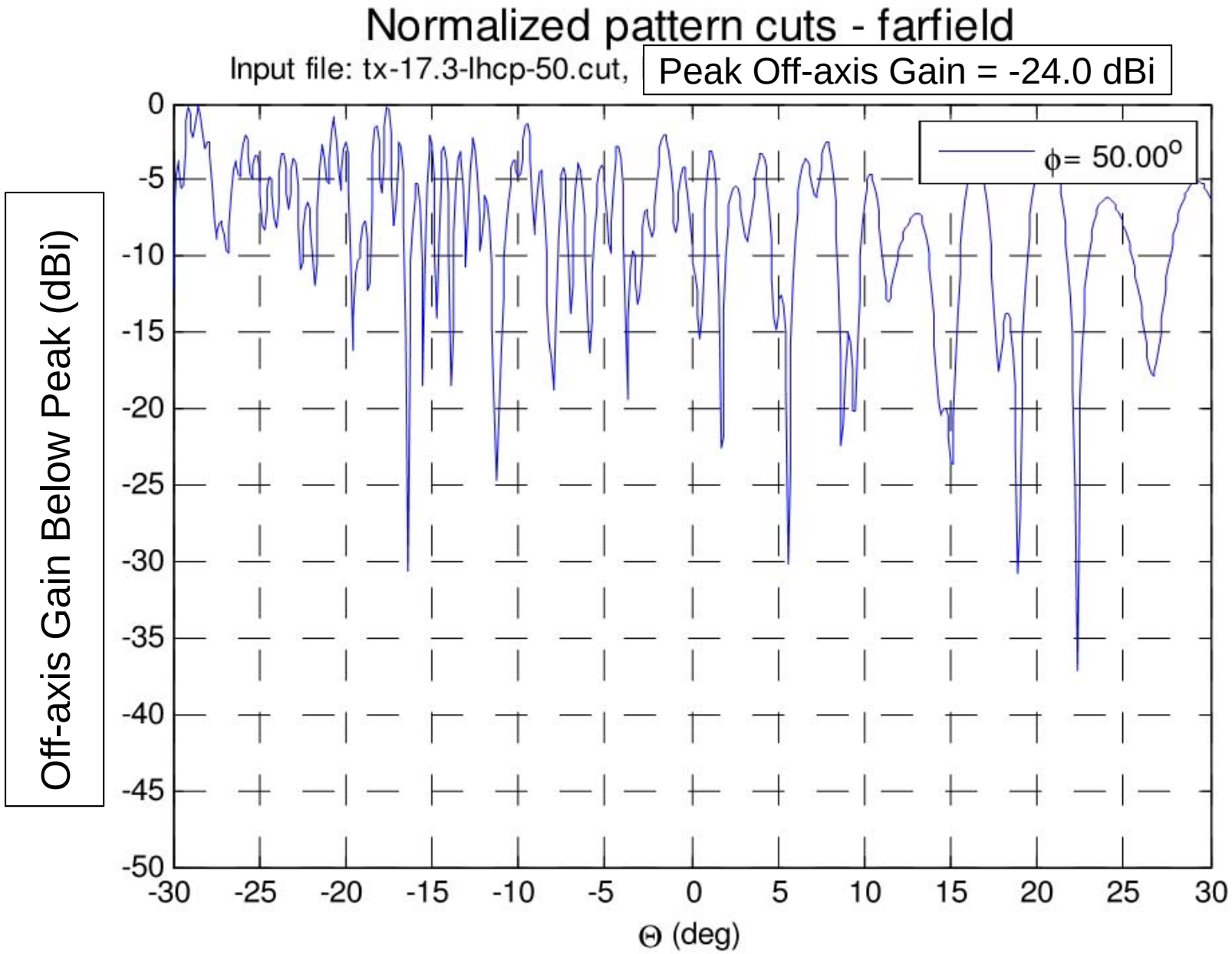

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp-0.cut,
Peak Off-axis Gain = -19.0 dBi
ϕ= 0.00°
Off-axis Gain Below Peak (dBi)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

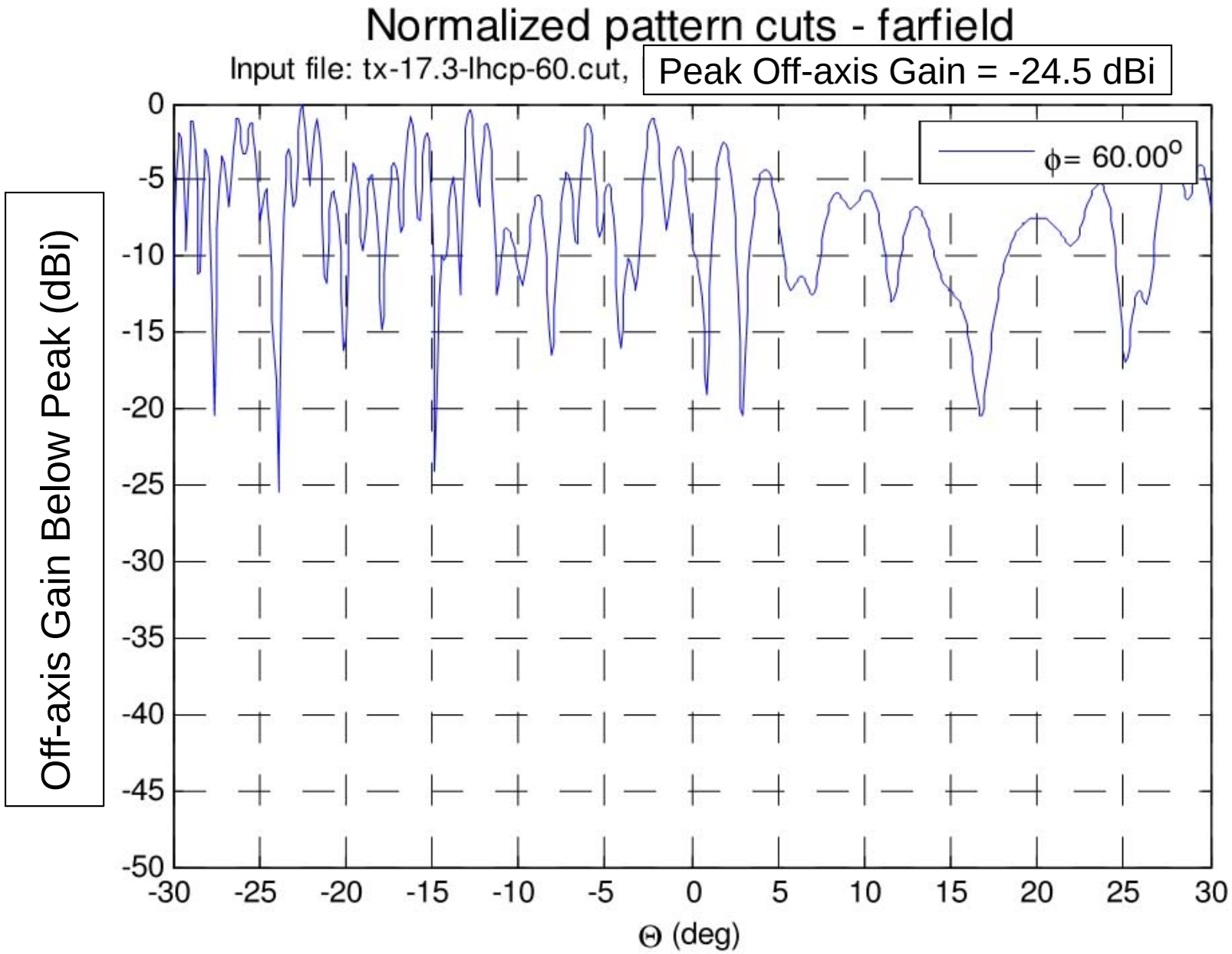

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp-10.cut,
Peak Off-axis Gain = -19.8 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp-20.cut,
Peak Off-axis Gain = -20.4 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

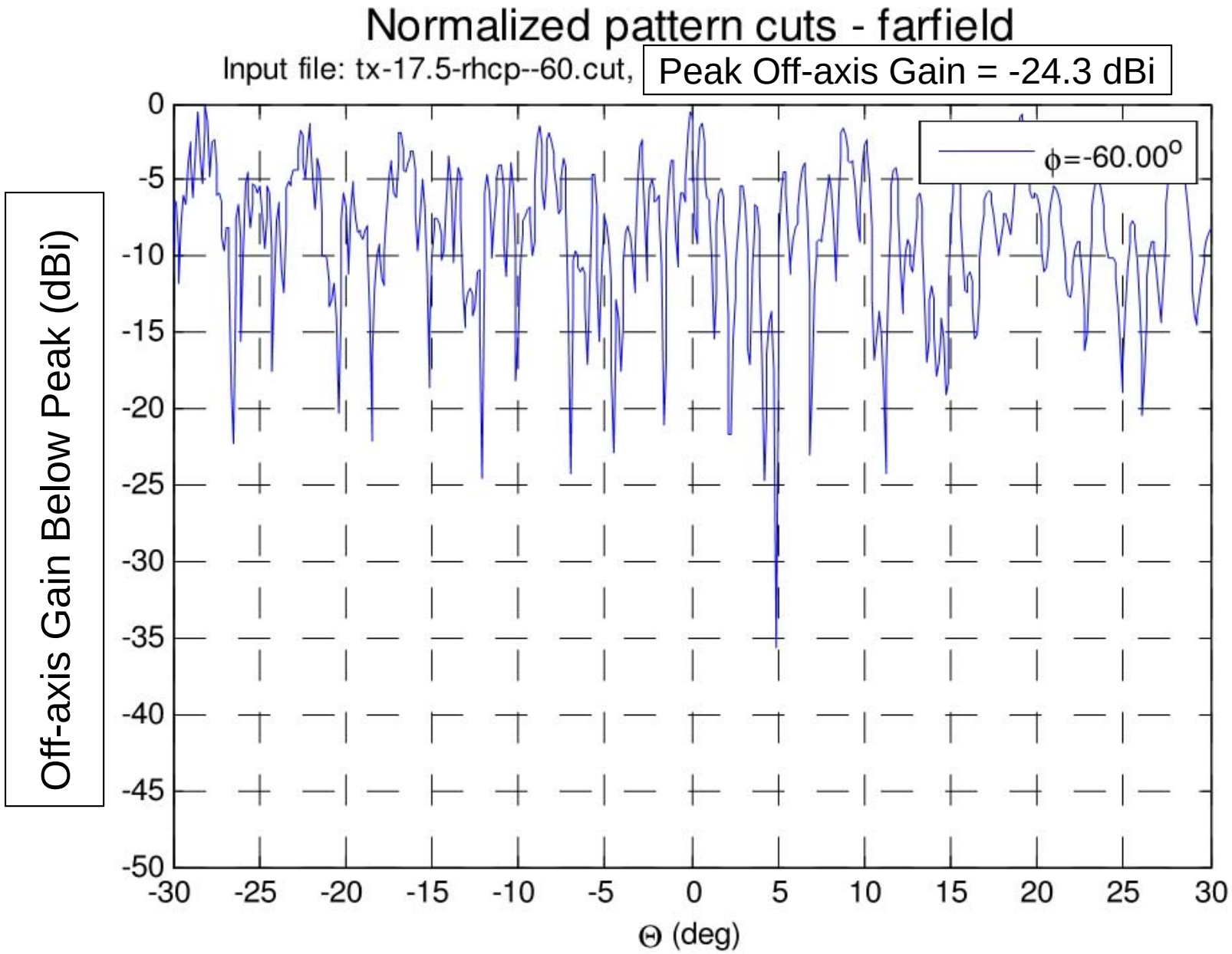

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp-30.cut,
Peak Off-axis Gain = -21.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

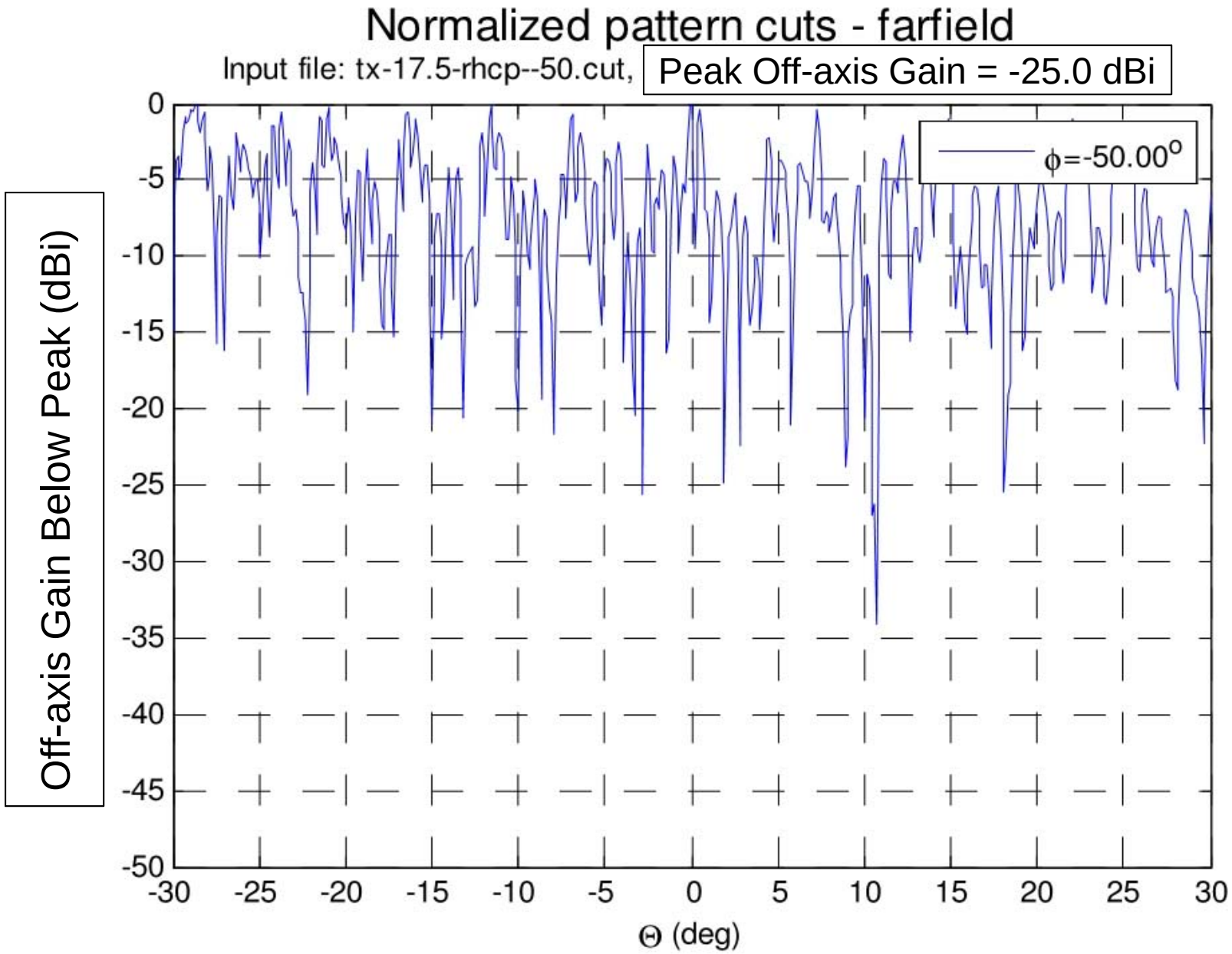

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp-40.cut,
Peak Off-axis Gain = -21.4 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

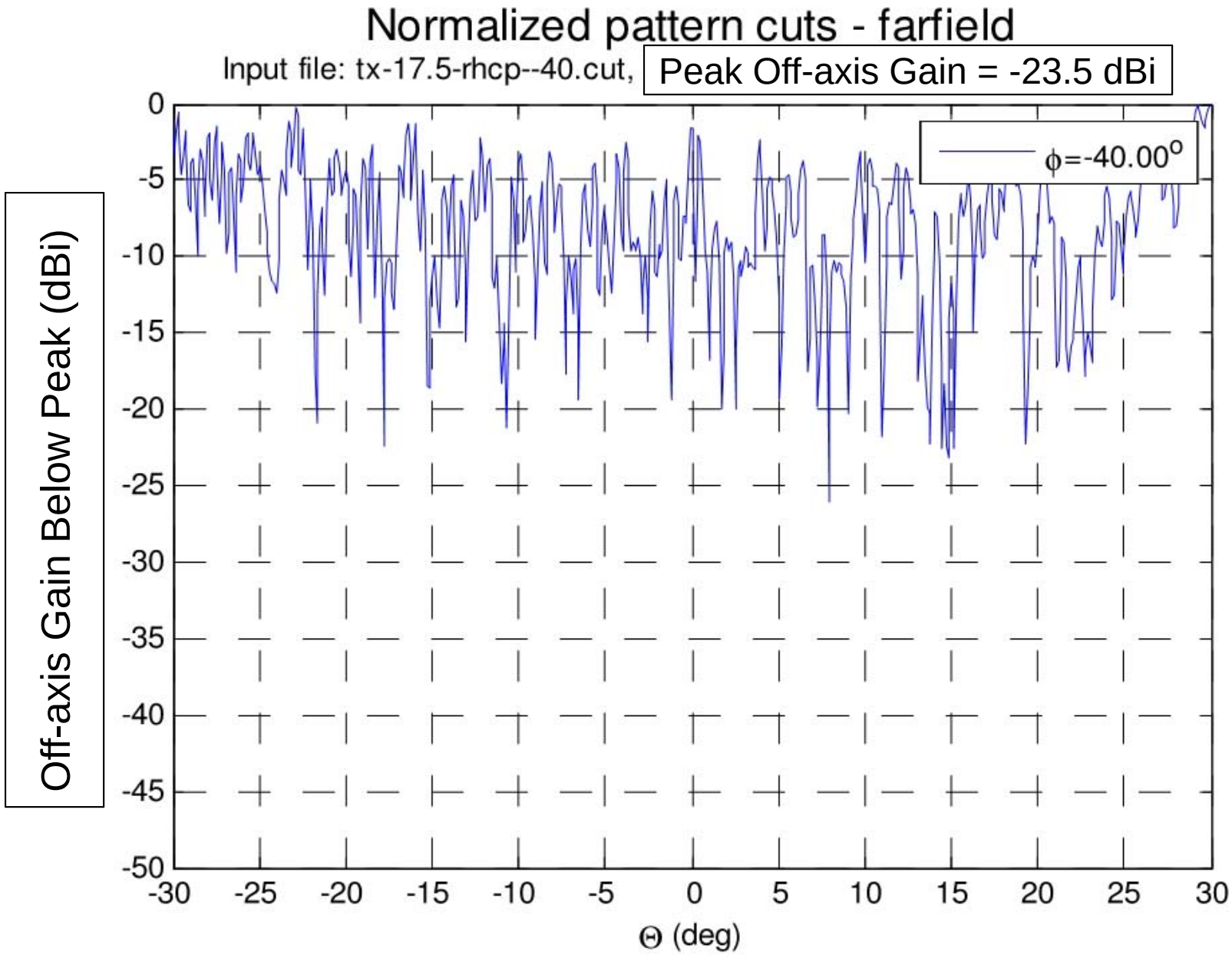

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp-50.cut,
Peak Off-axis Gain = -24.0 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

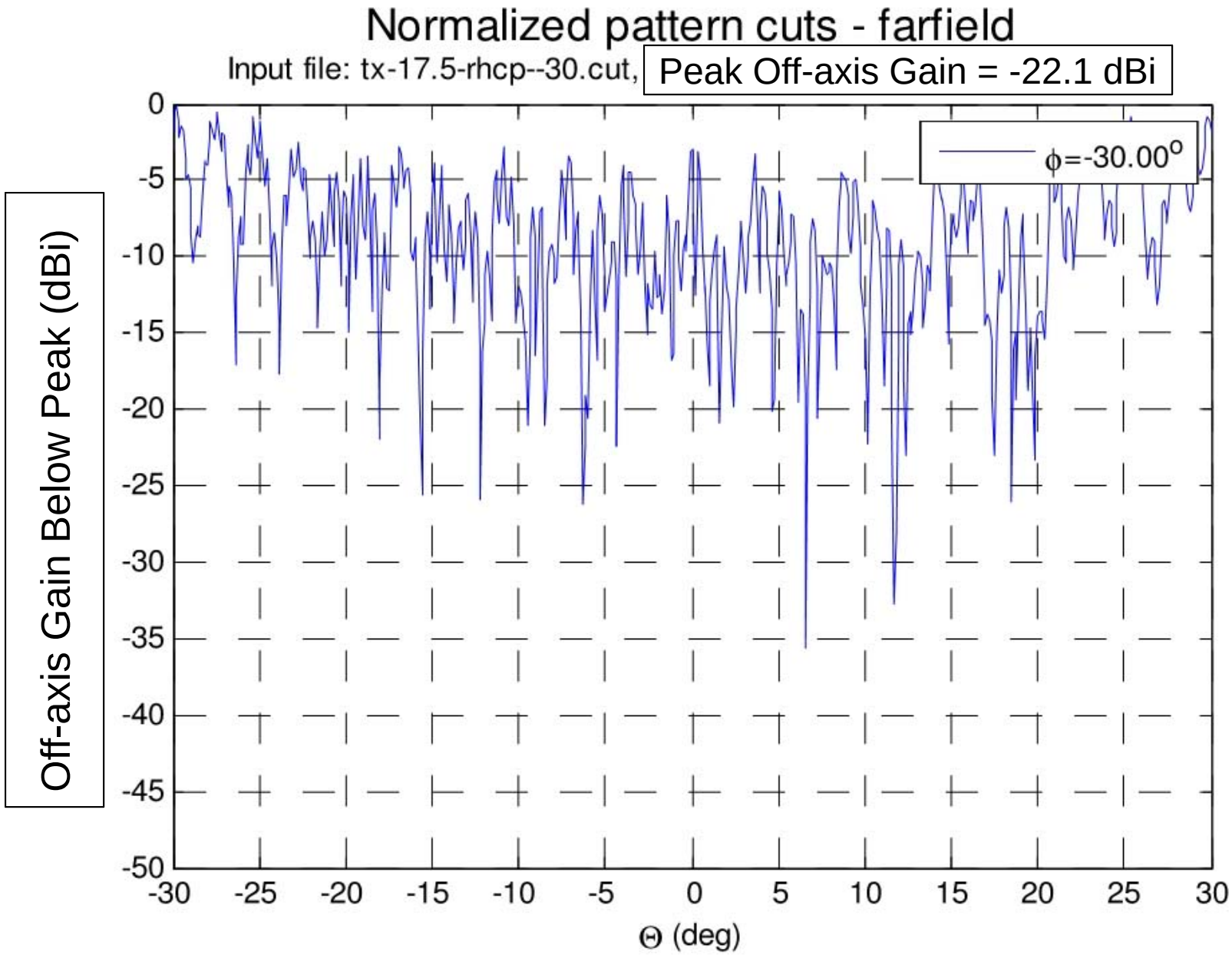

Normalized pattern cuts - farfield
Input file: tx-17.3-lhcp-60.cut,
Peak Off-axis Gain = -24.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

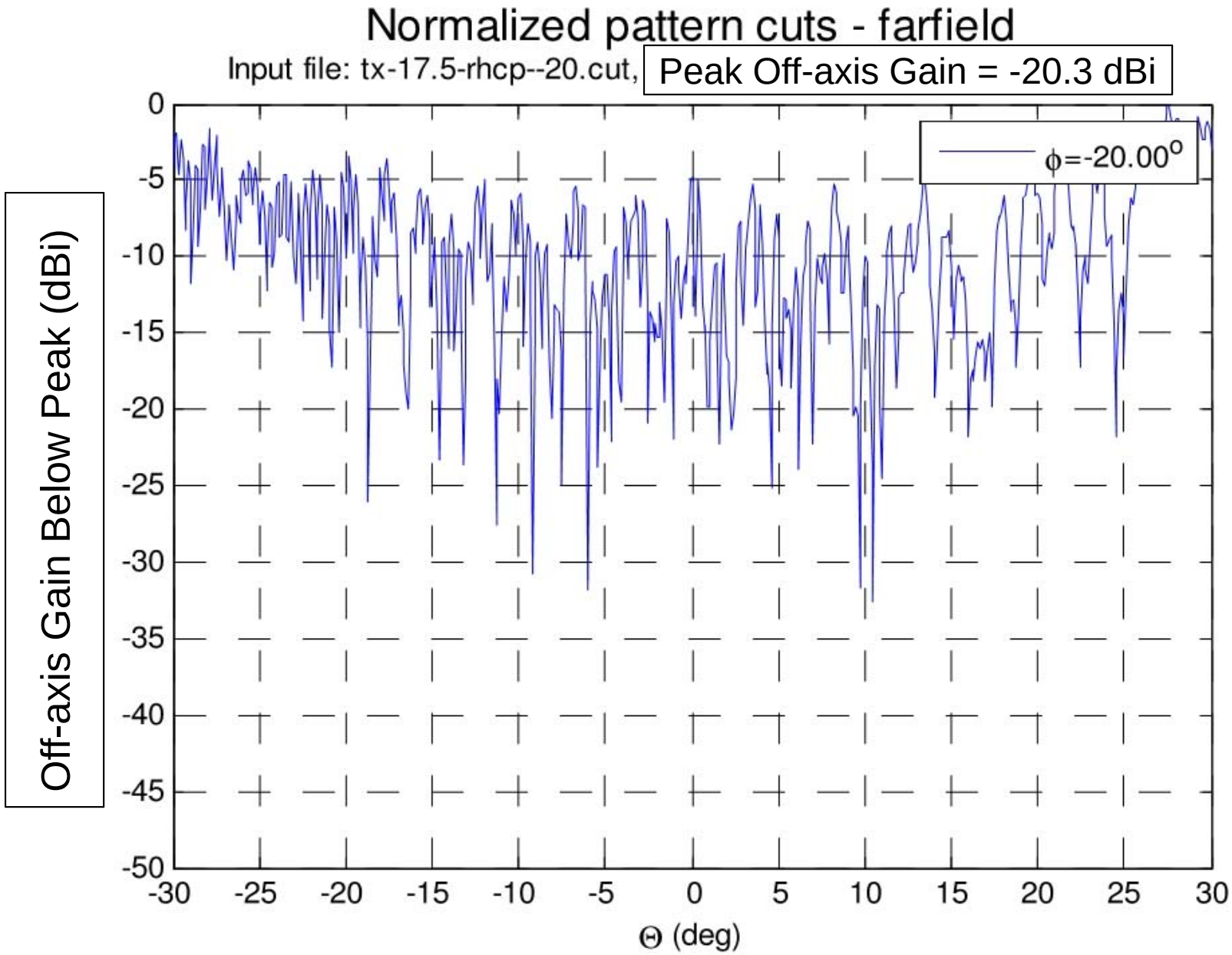
RHCP = 17.5 GHz

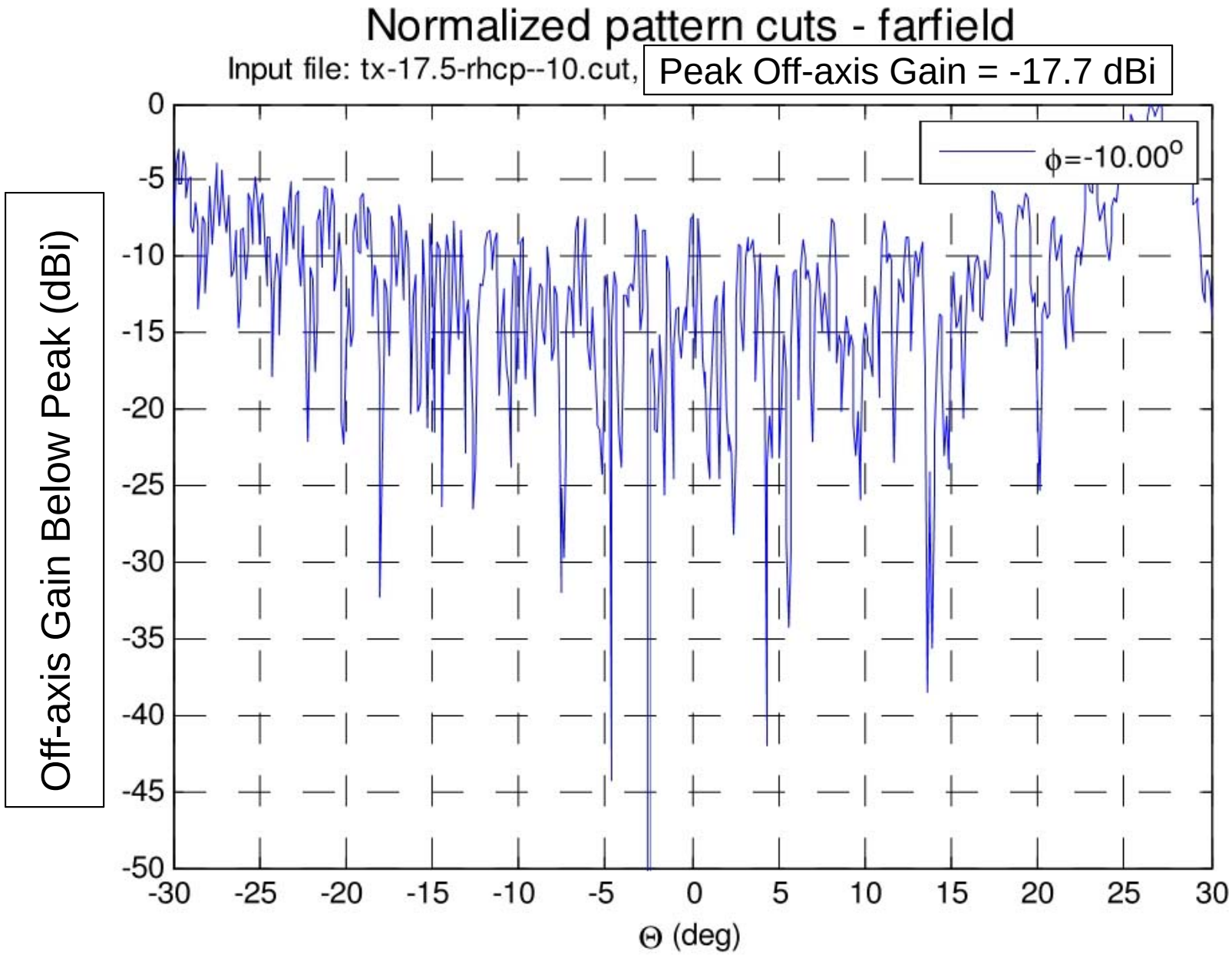

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp--60.cut,
Peak Off-axis Gain = -24.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

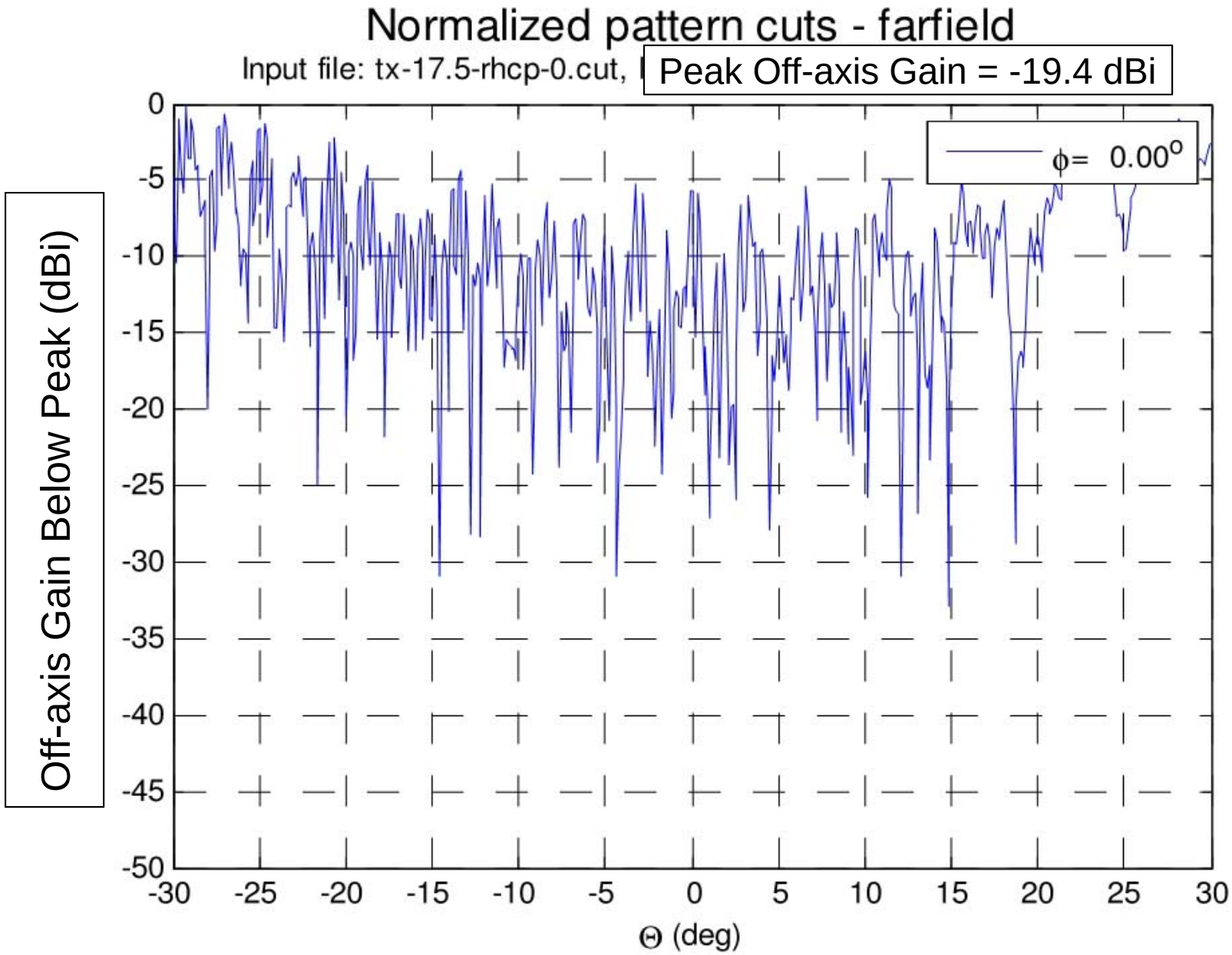

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp--50.cut,
Peak Off-axis Gain = -25.0 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

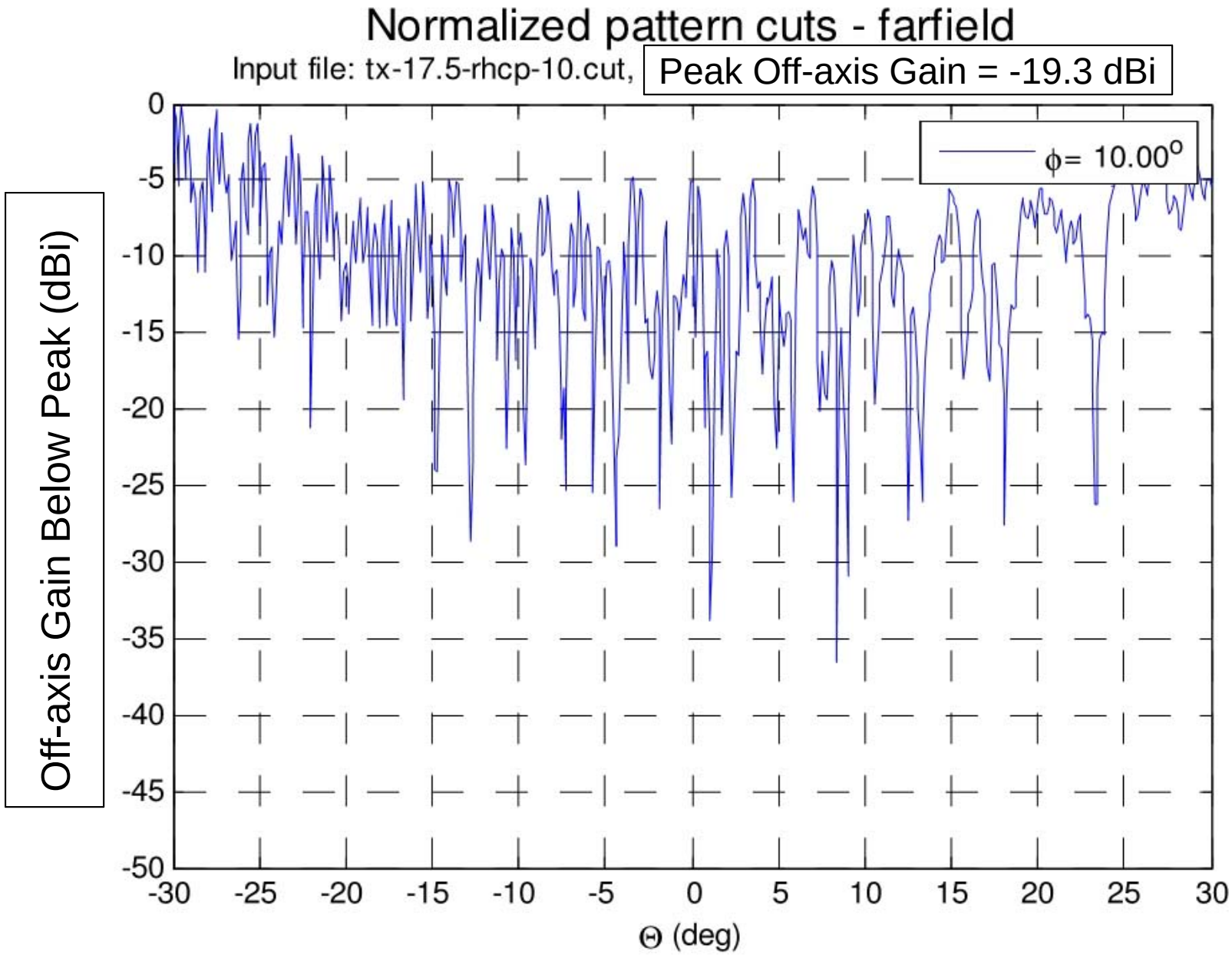

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp--40.cut,
Peak Off-axis Gain = -23.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

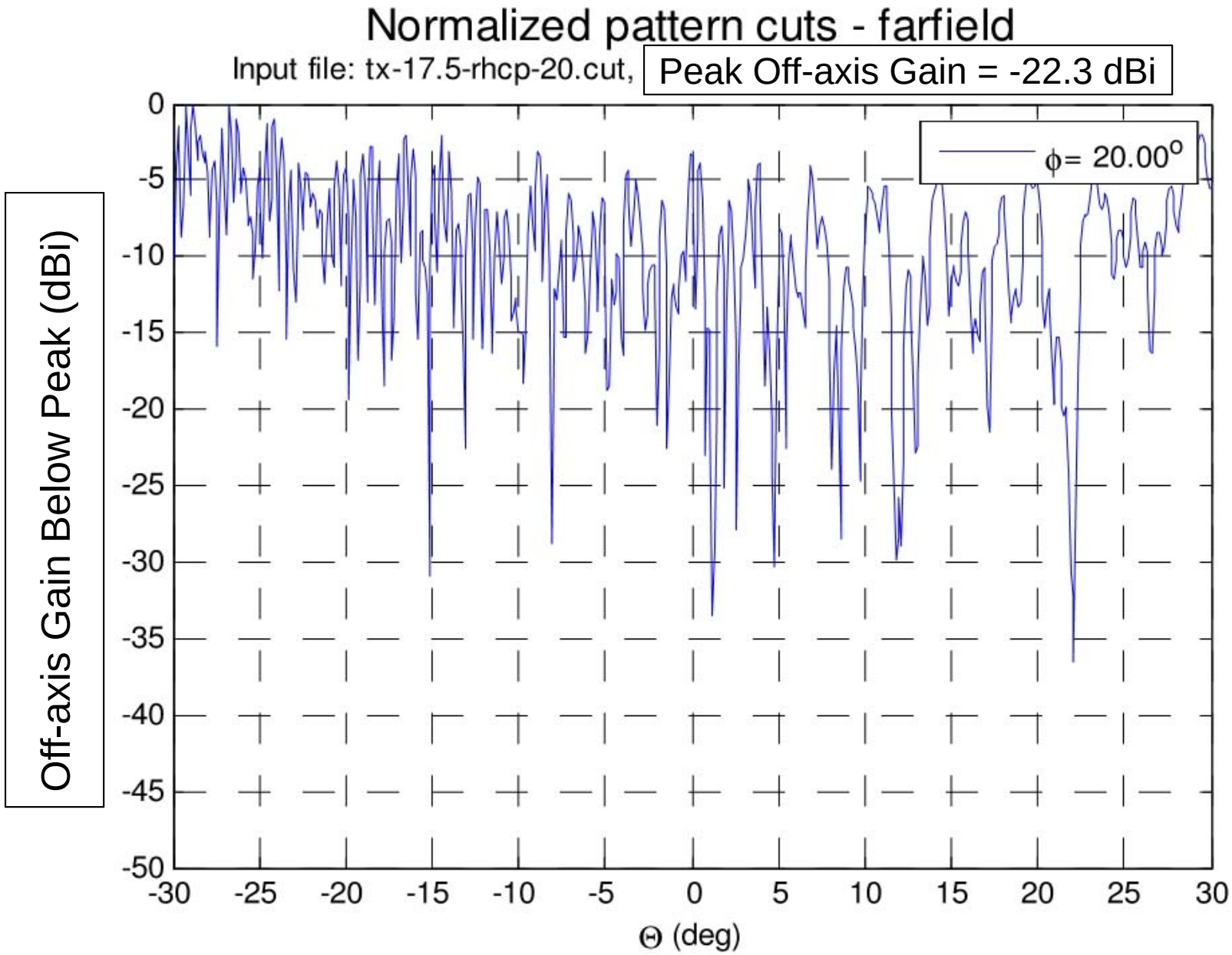

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp--30.cut,
Peak Off-axis Gain = -22.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

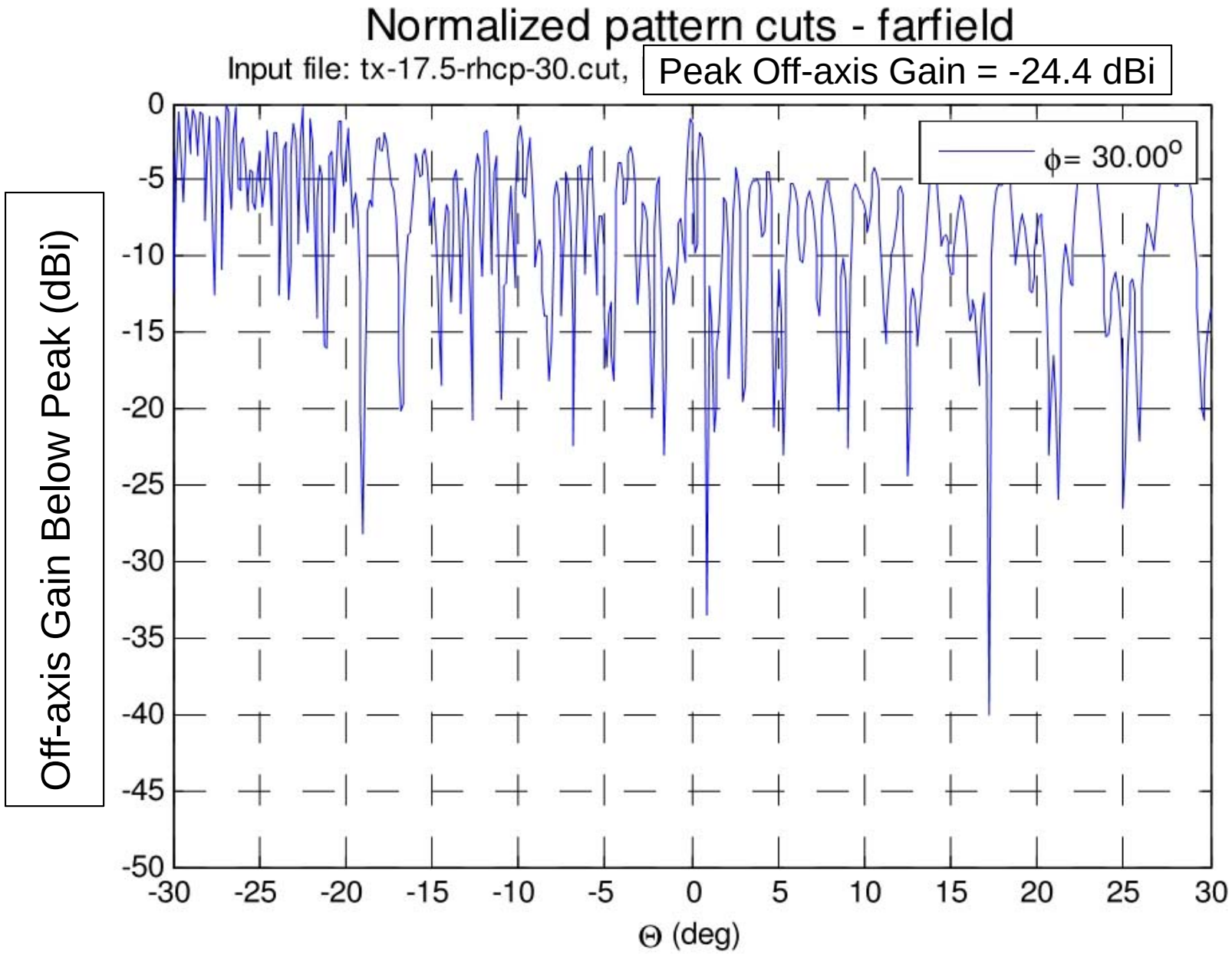

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp--20.cut,
Peak Off-axis Gain = -20.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

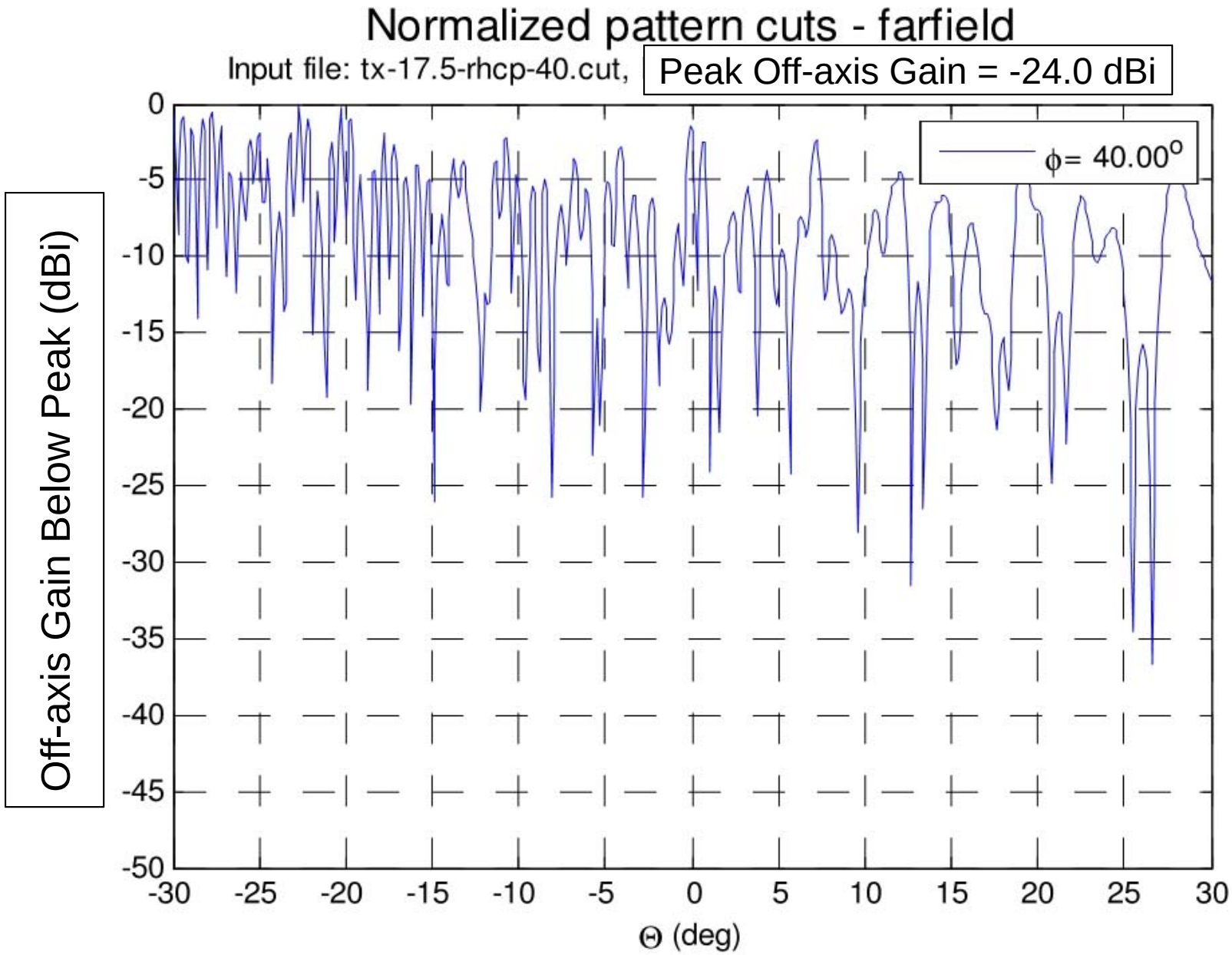

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp--10.cut,
Peak Off-axis Gain = -17.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

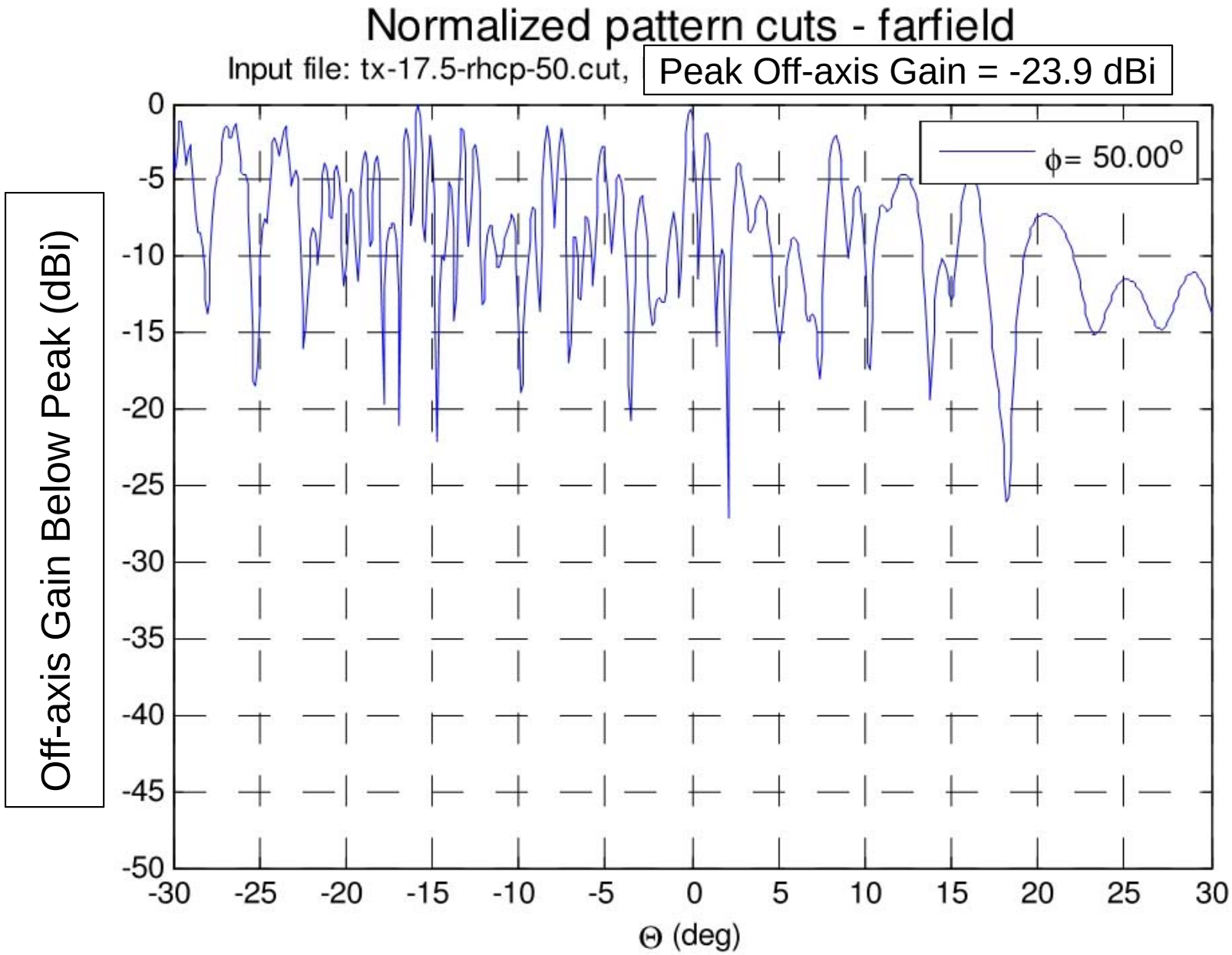

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp-0.cut,
Peak Off-axis Gain = -19.4 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 0.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

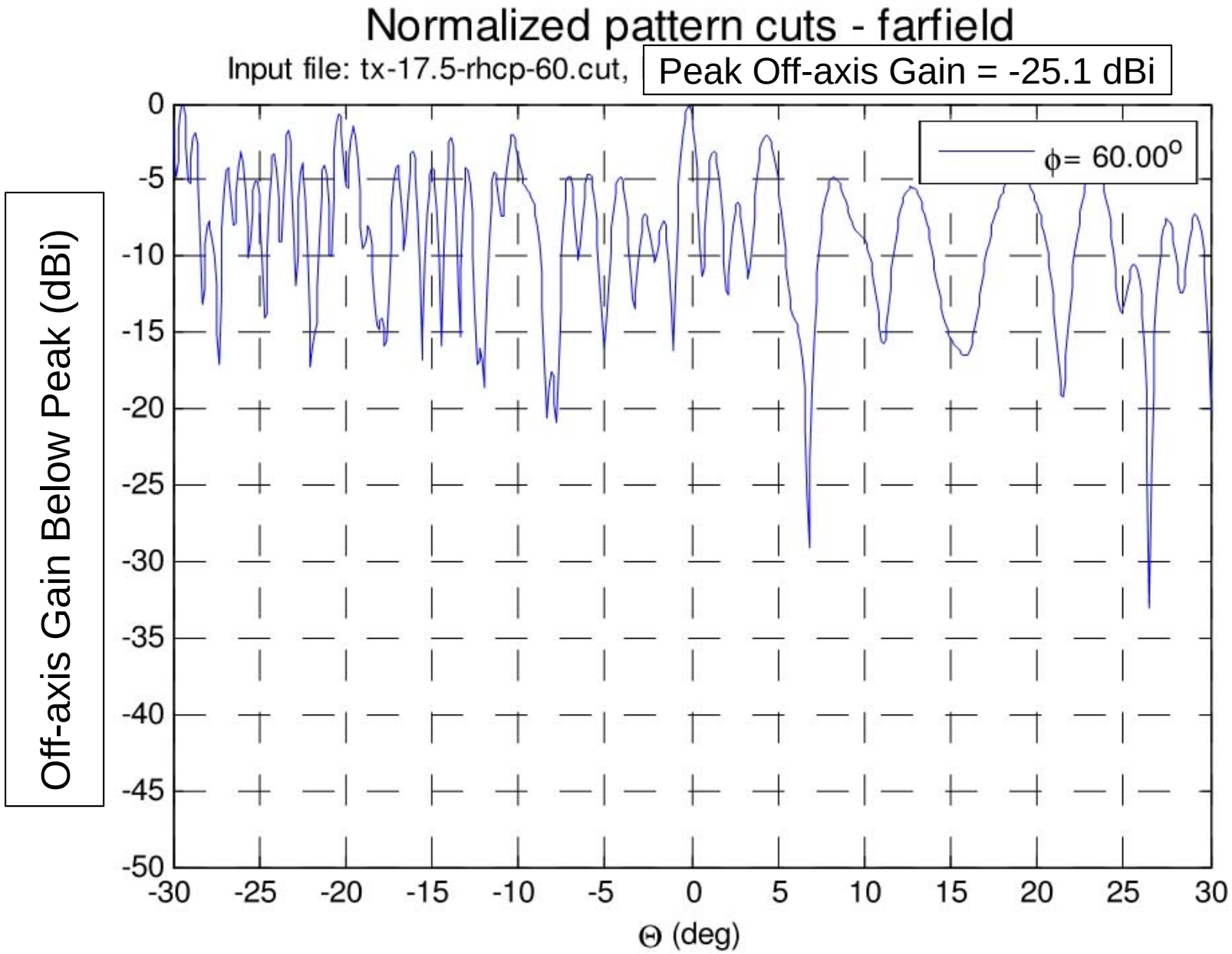

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp-10.cut,
Peak Off-axis Gain = -19.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp-20.cut,
Peak Off-axis Gain = -22.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

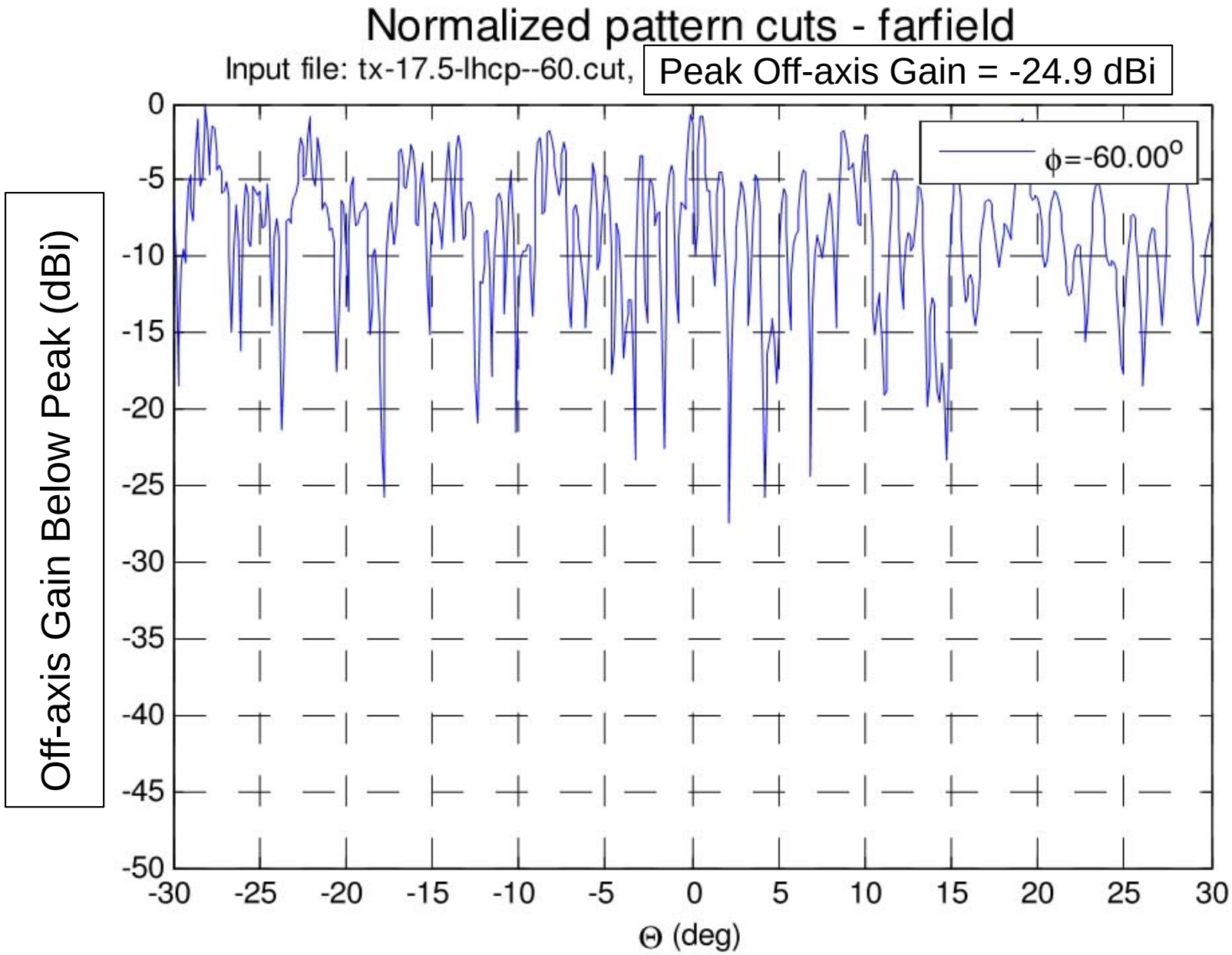

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp-30.cut,
Peak Off-axis Gain = -24.4 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

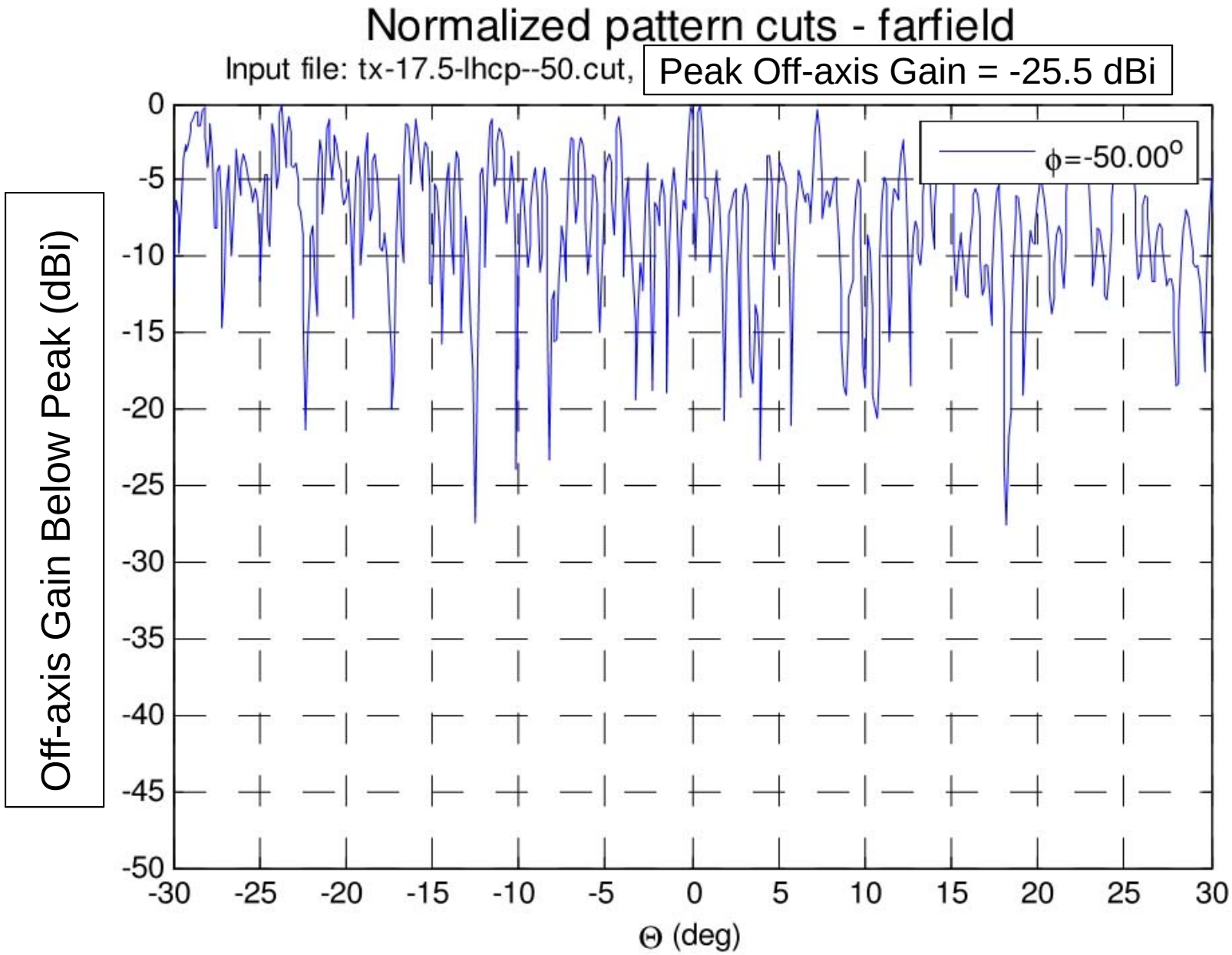

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp-40.cut,
Peak Off-axis Gain = -24.0 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

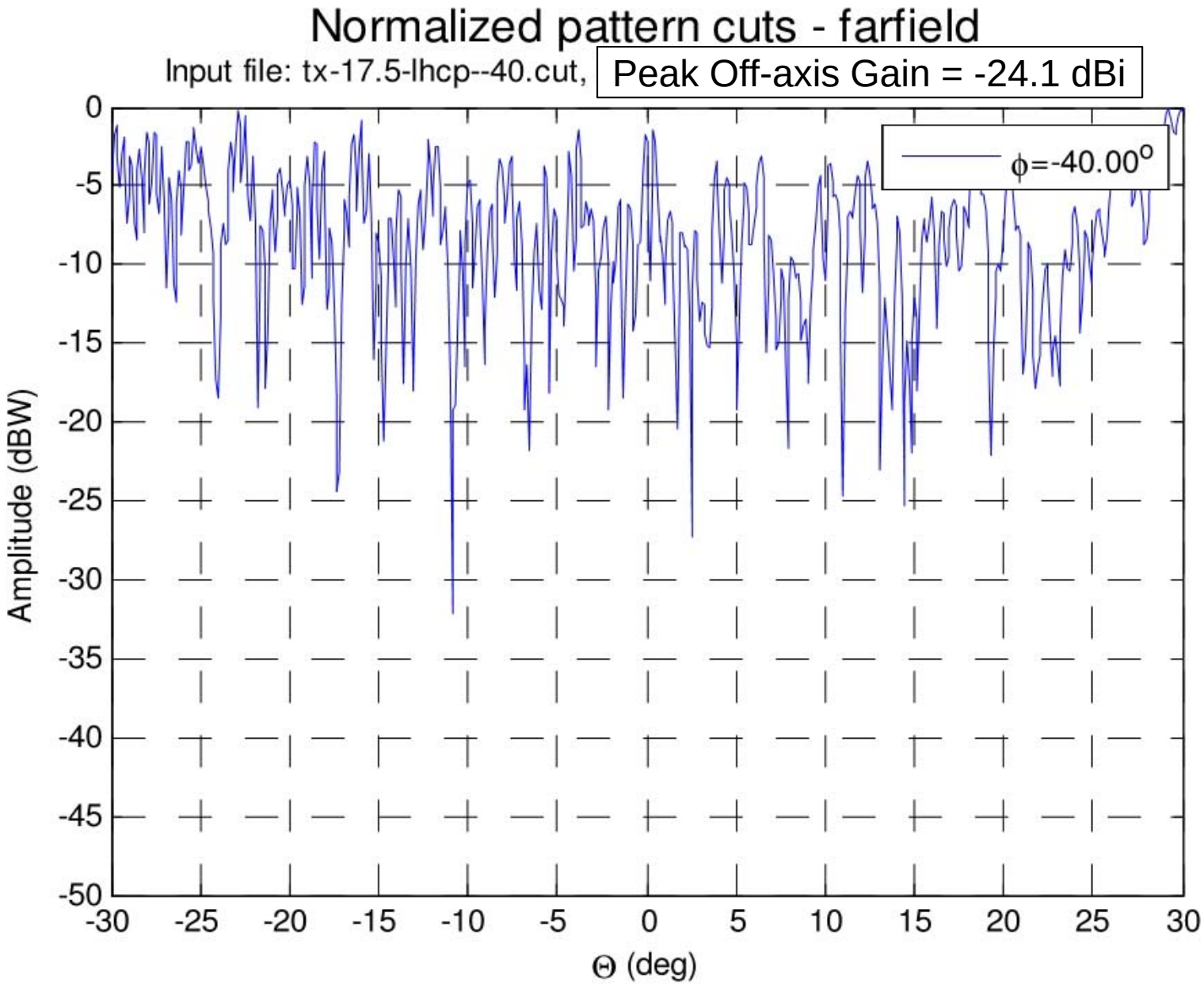

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp-50.cut,
Peak Off-axis Gain = -23.9 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

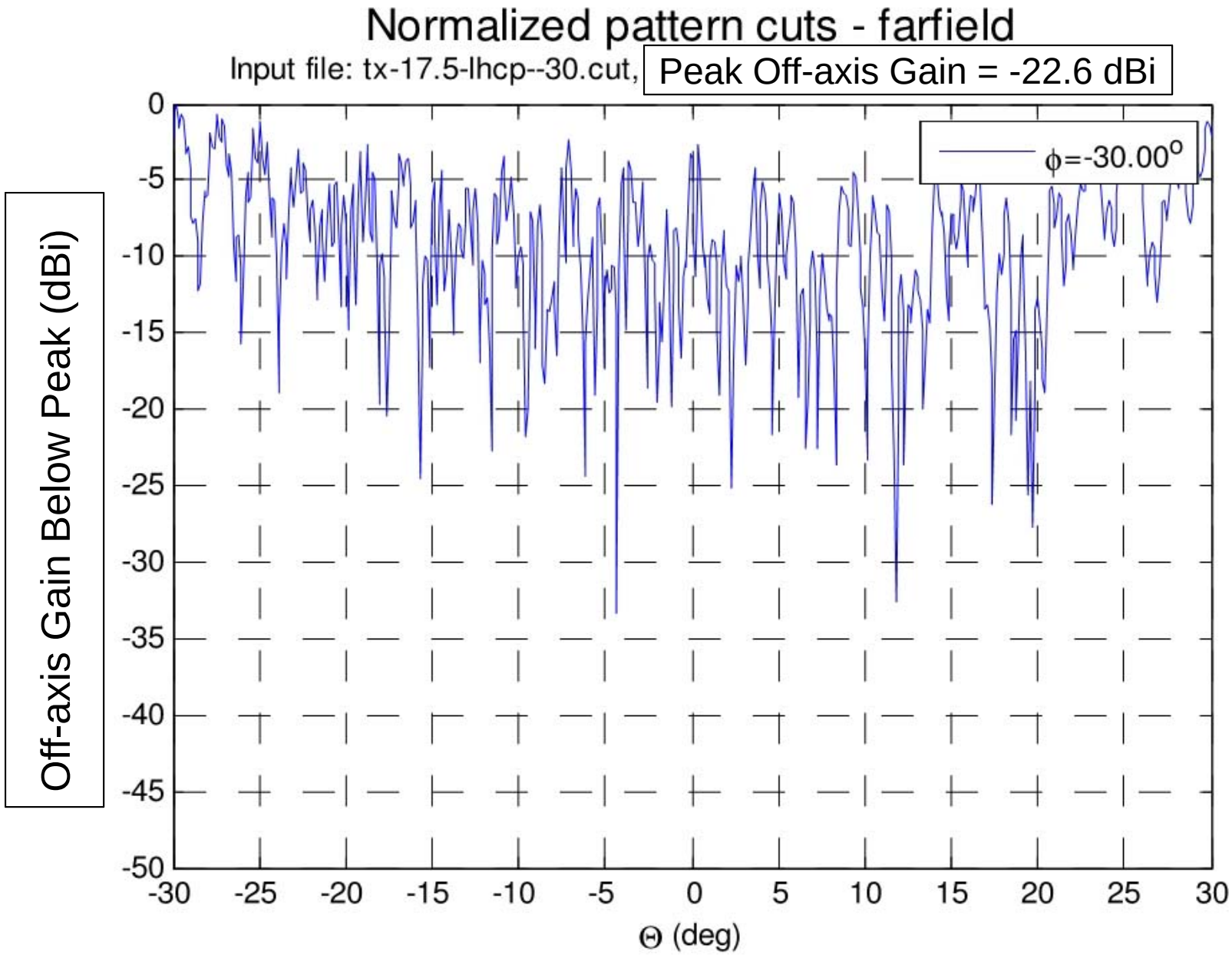

Normalized pattern cuts - farfield
Input file: tx-17.5-rhcp-60.cut,
Peak Off-axis Gain = -25.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

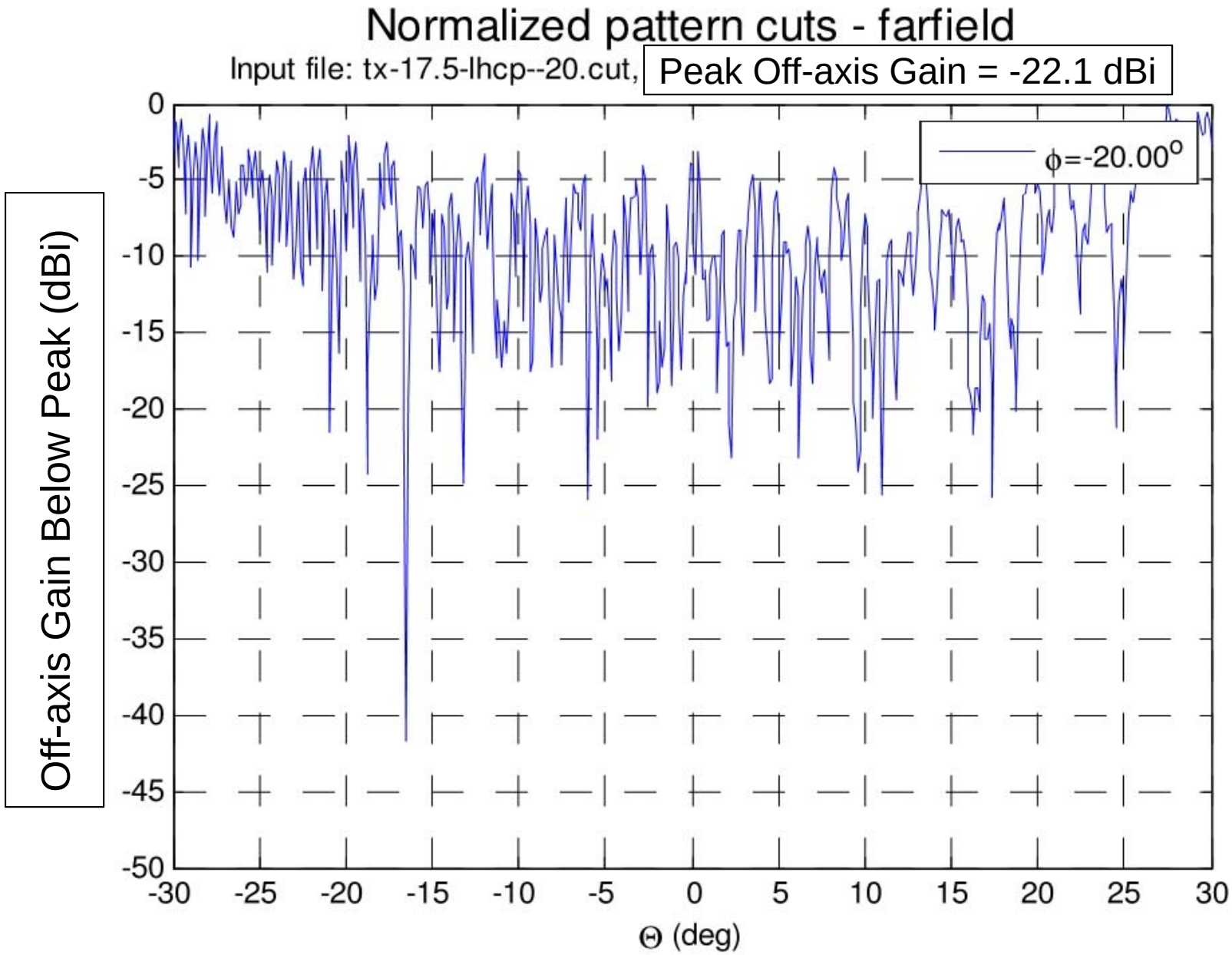
LHCP = 17.5 GHz

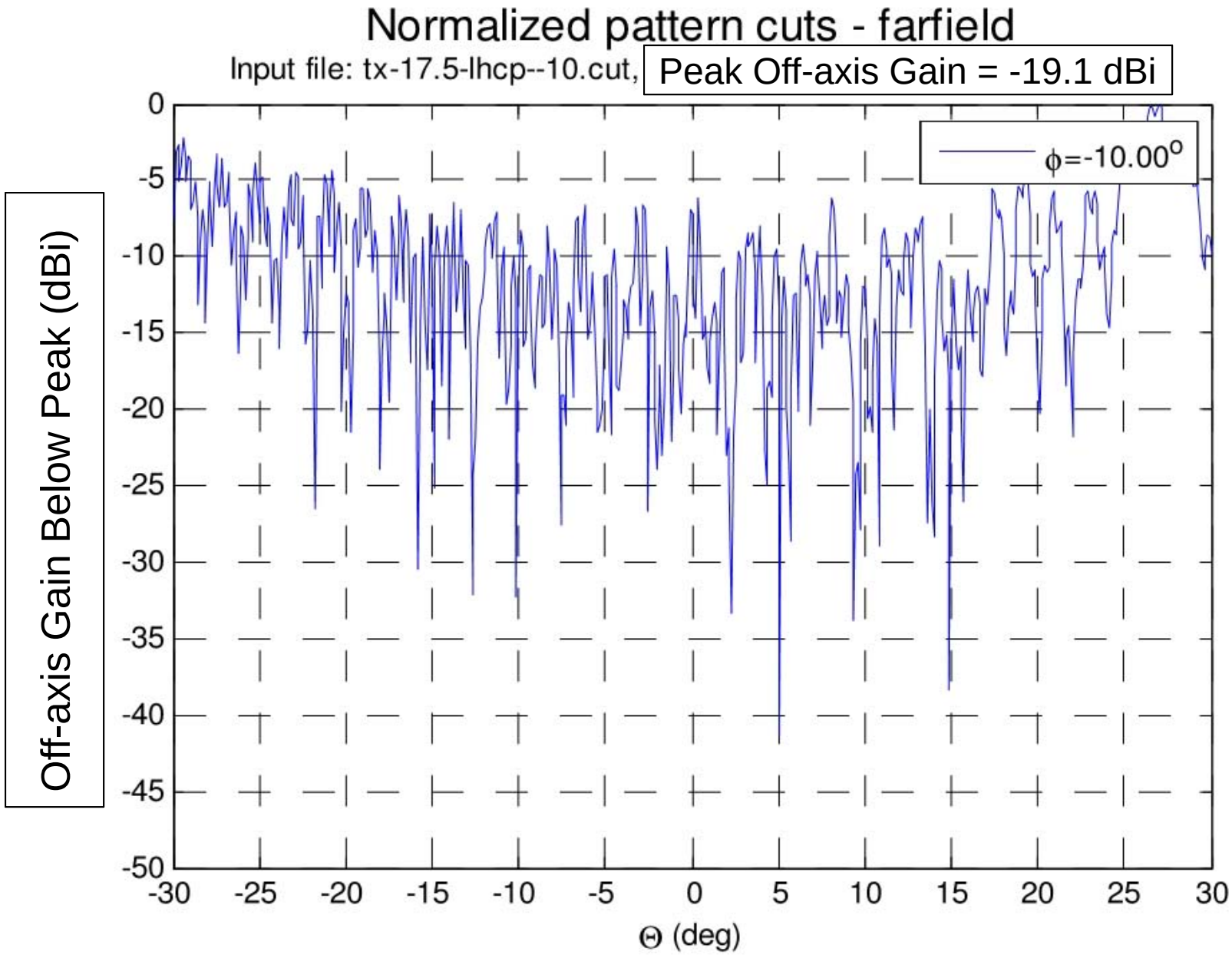

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp--60.cut,
Peak Off-axis Gain = -24.9 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

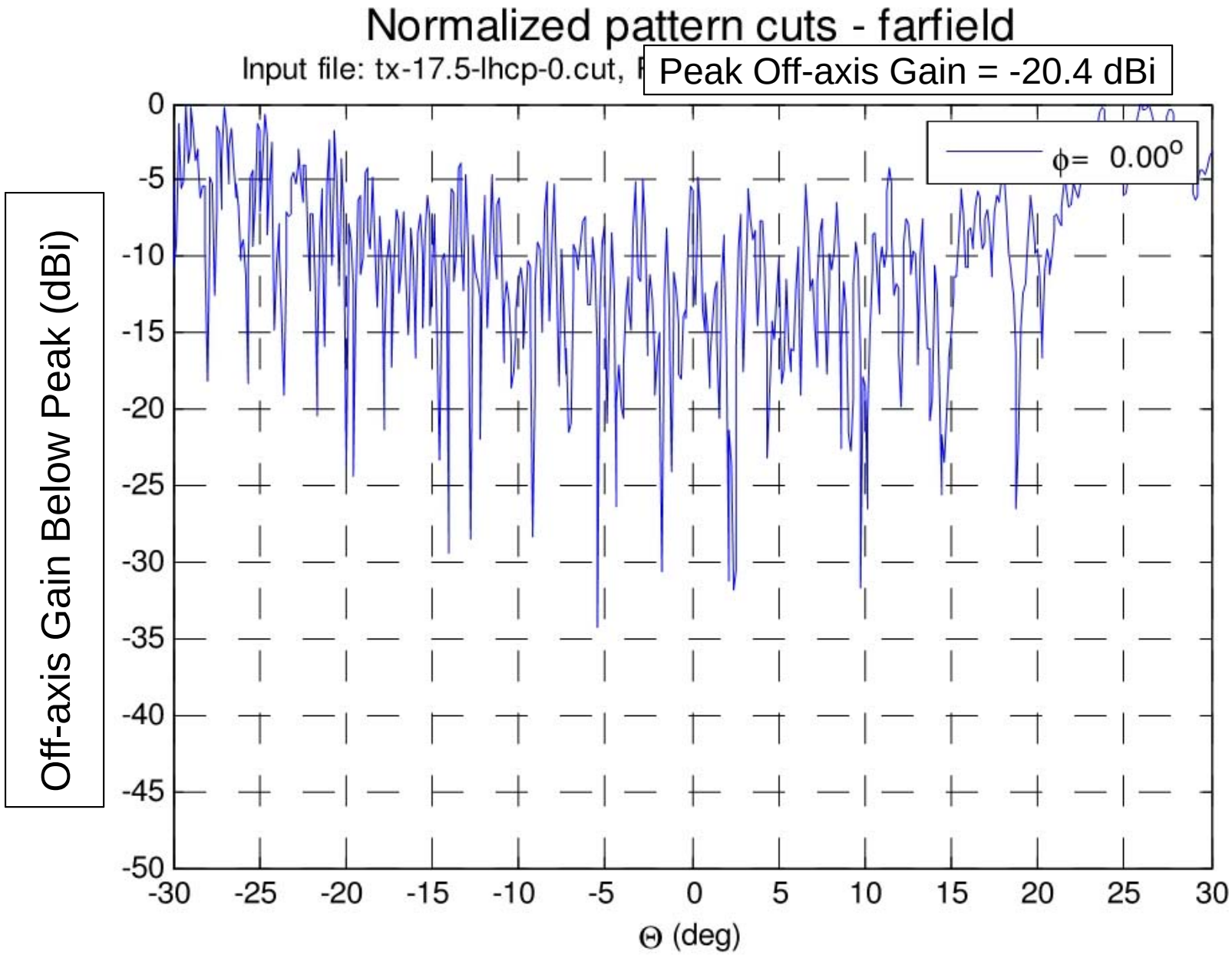

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp--50.cut,
Peak Off-axis Gain = -25.5 dBi
Off-axis Gain Below Peak (dBi)
φ=-50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

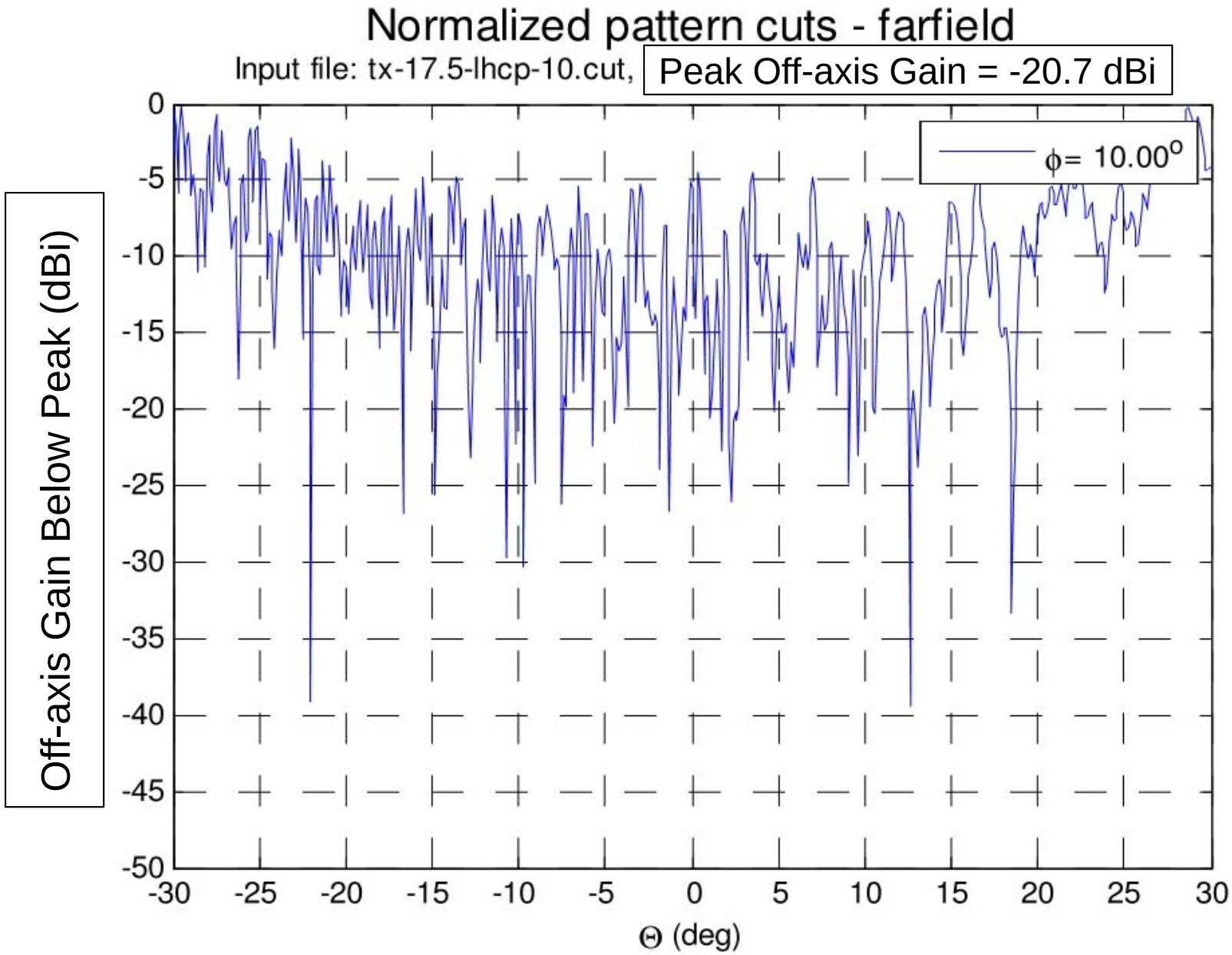

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp--40.cut,
Peak Off-axis Gain = -24.1 dBi
ϕ=-40.00°
Amplitude (dBW)
Θ (deg)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30

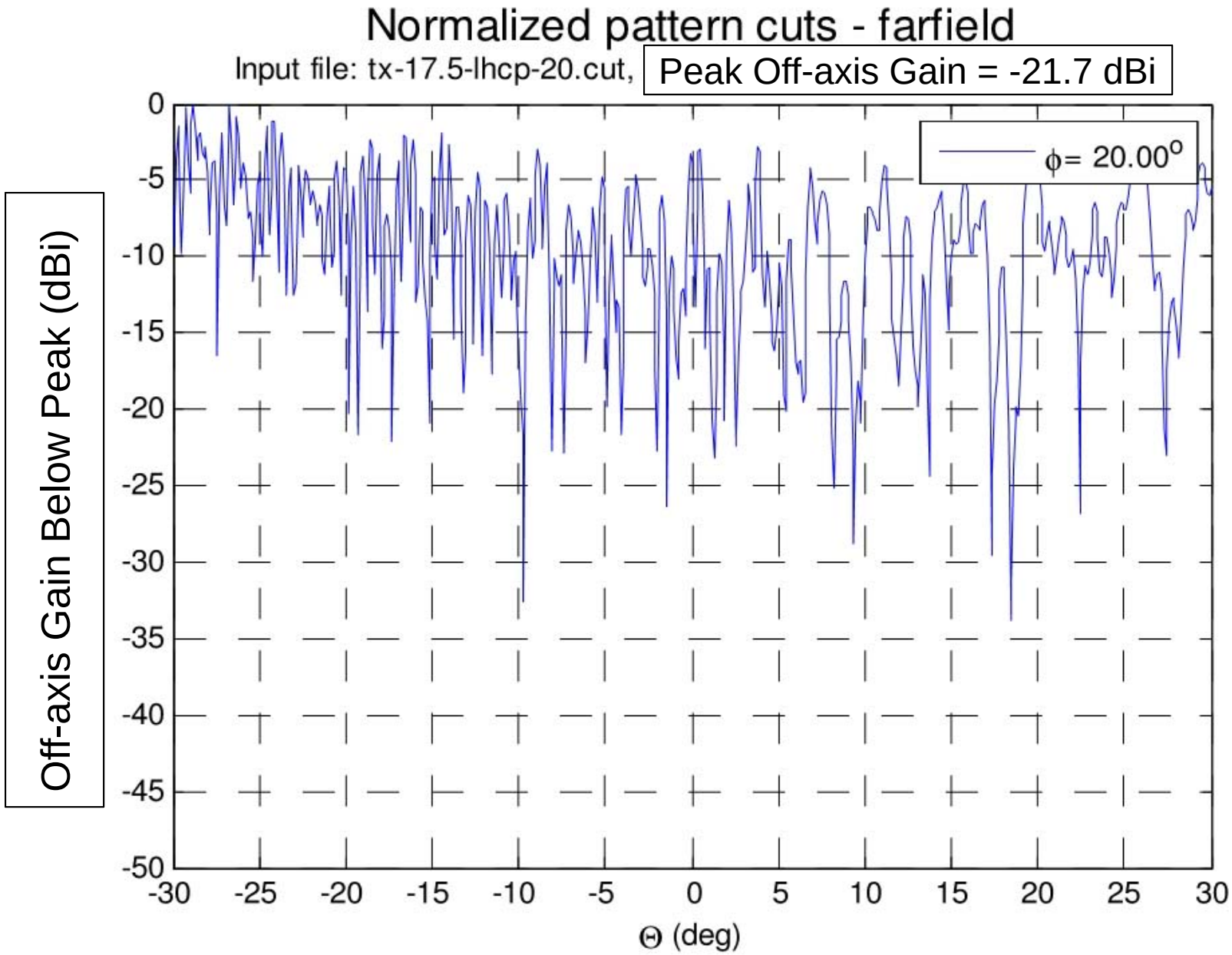

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp--30.cut,
Peak Off-axis Gain = -22.6 dBi
Off-axis Gain Below Peak (dBi)
φ=-30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

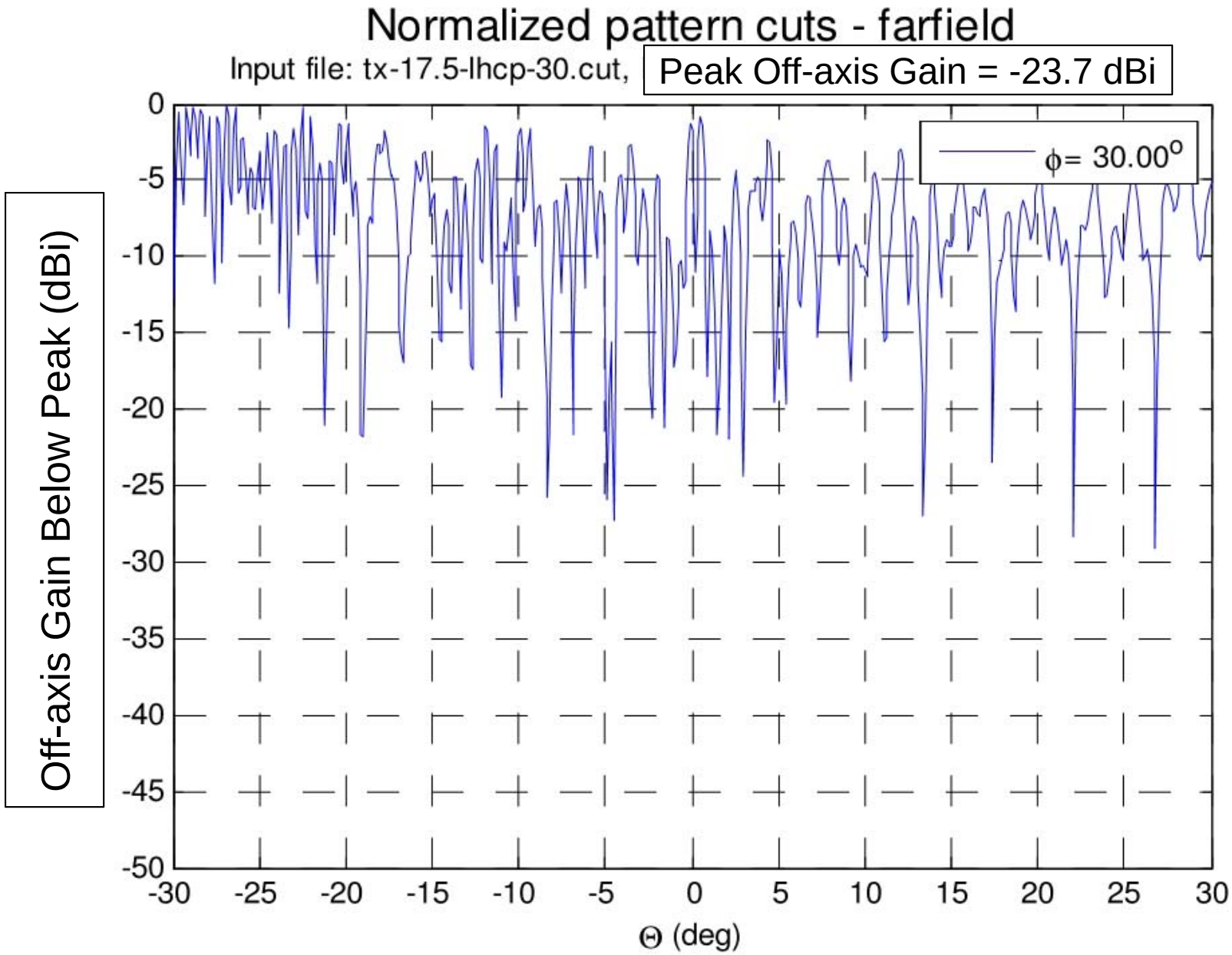

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp--20.cut,
Peak Off-axis Gain = -22.1 dBi
Off-axis Gain Below Peak (dBi)
φ=-20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

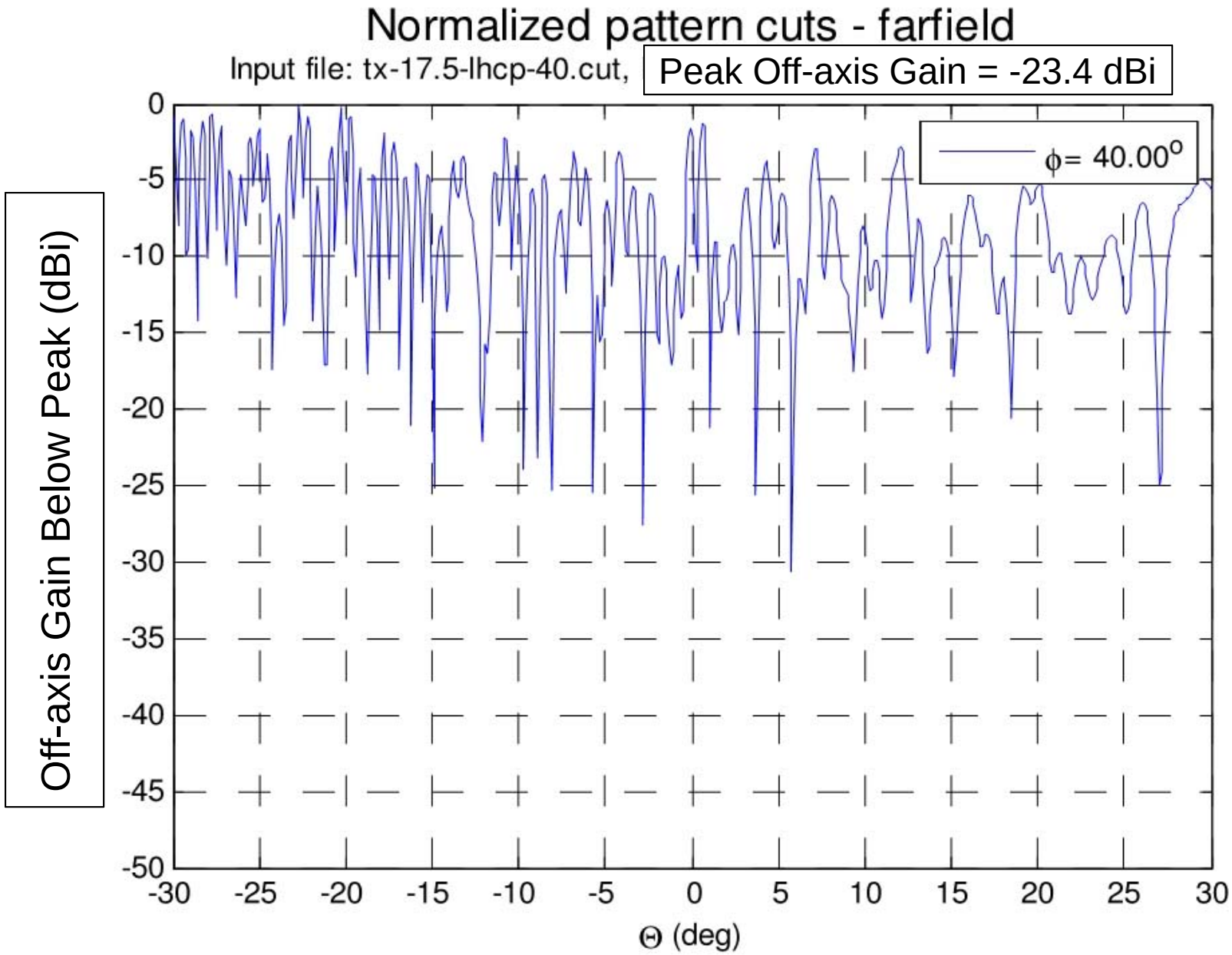

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp--10.cut,
Peak Off-axis Gain = -19.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

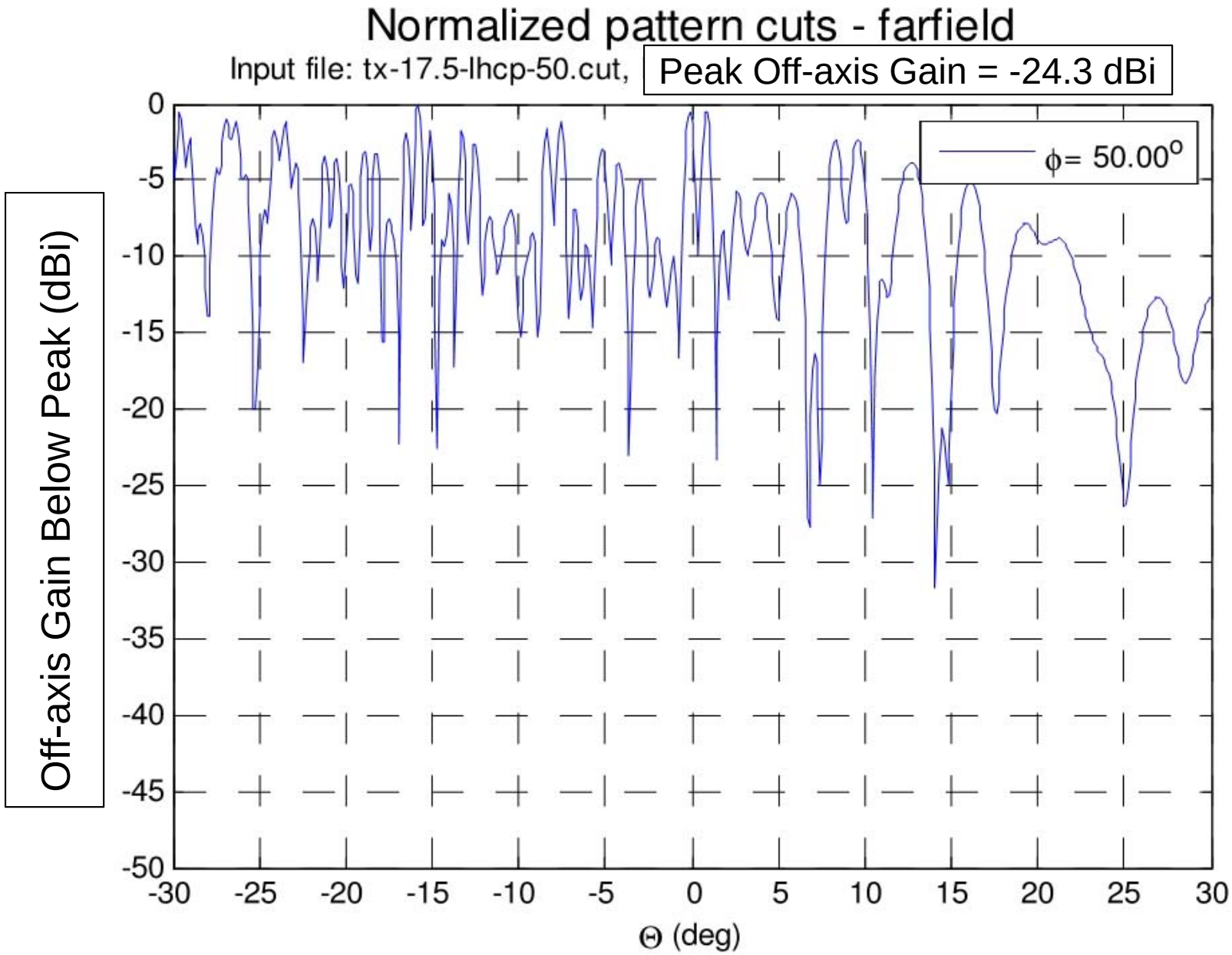

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp-0.cut,
Peak Off-axis Gain = -20.4 dBi
ϕ= 0.00°
Off-axis Gain Below Peak (dBi)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

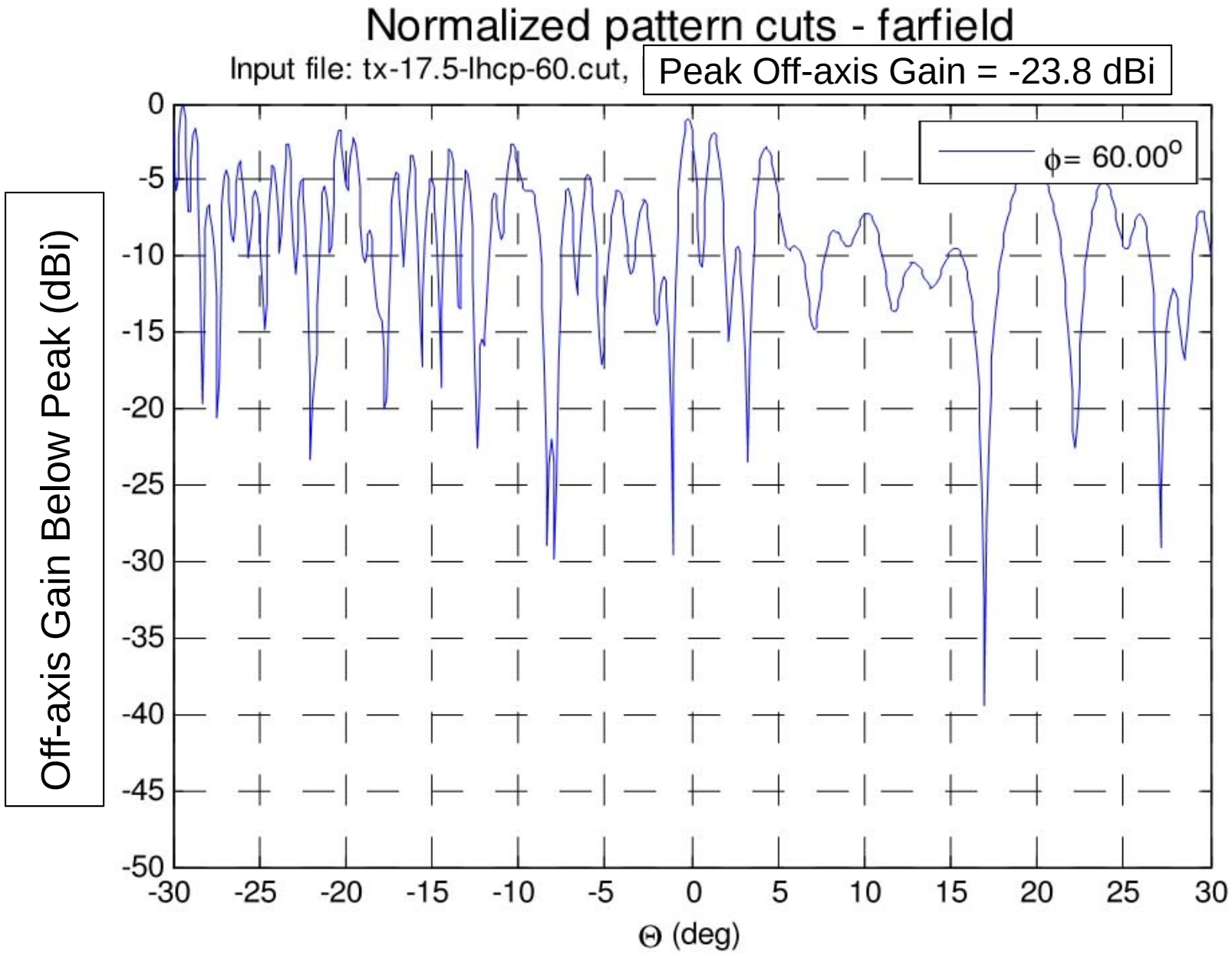

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp-10.cut,
Peak Off-axis Gain = -20.7 dBi
ϕ= 10.00°
Off-axis Gain Below Peak (dBi)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp-20.cut,
Peak Off-axis Gain = -21.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

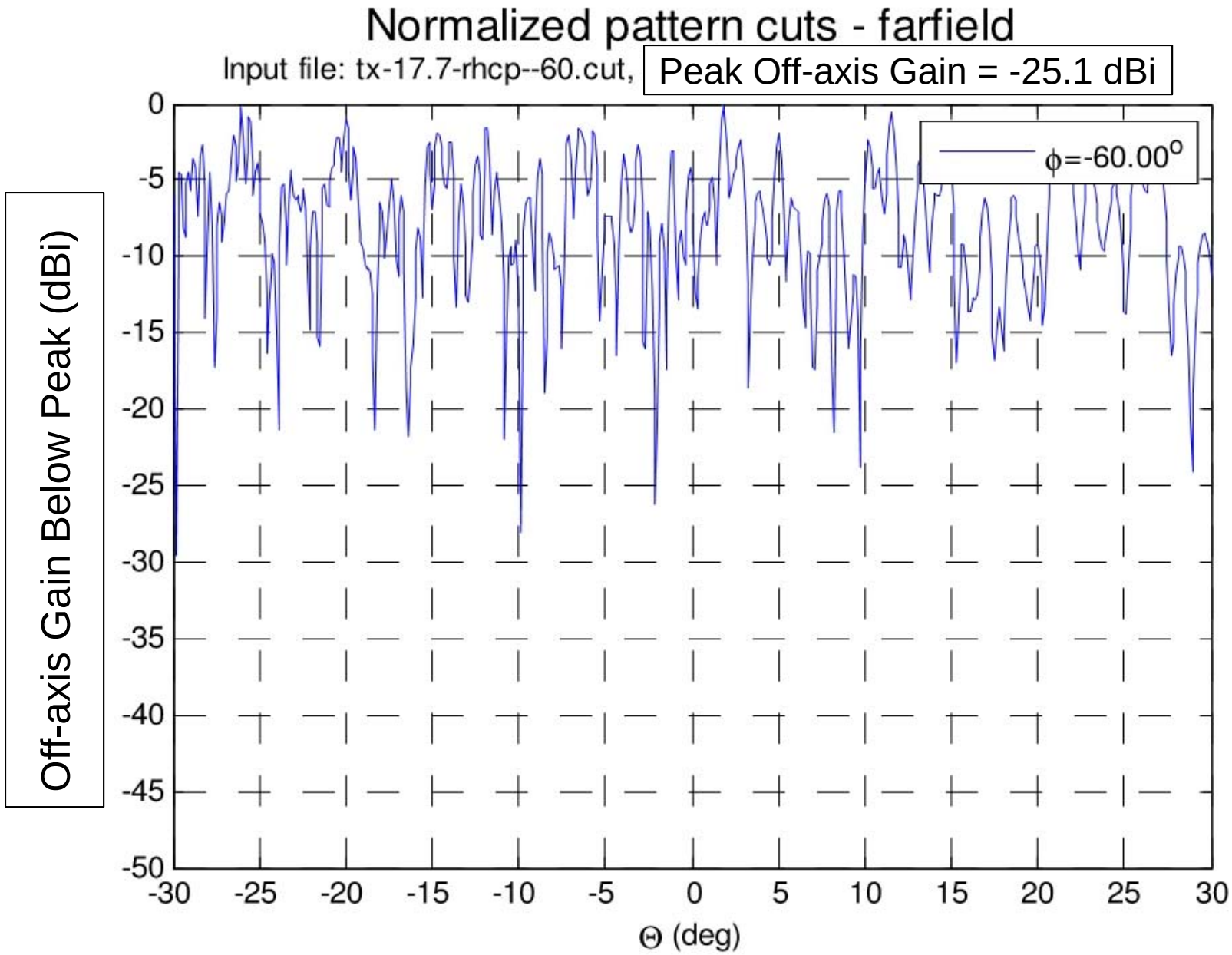

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp-30.cut,
Peak Off-axis Gain = -23.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

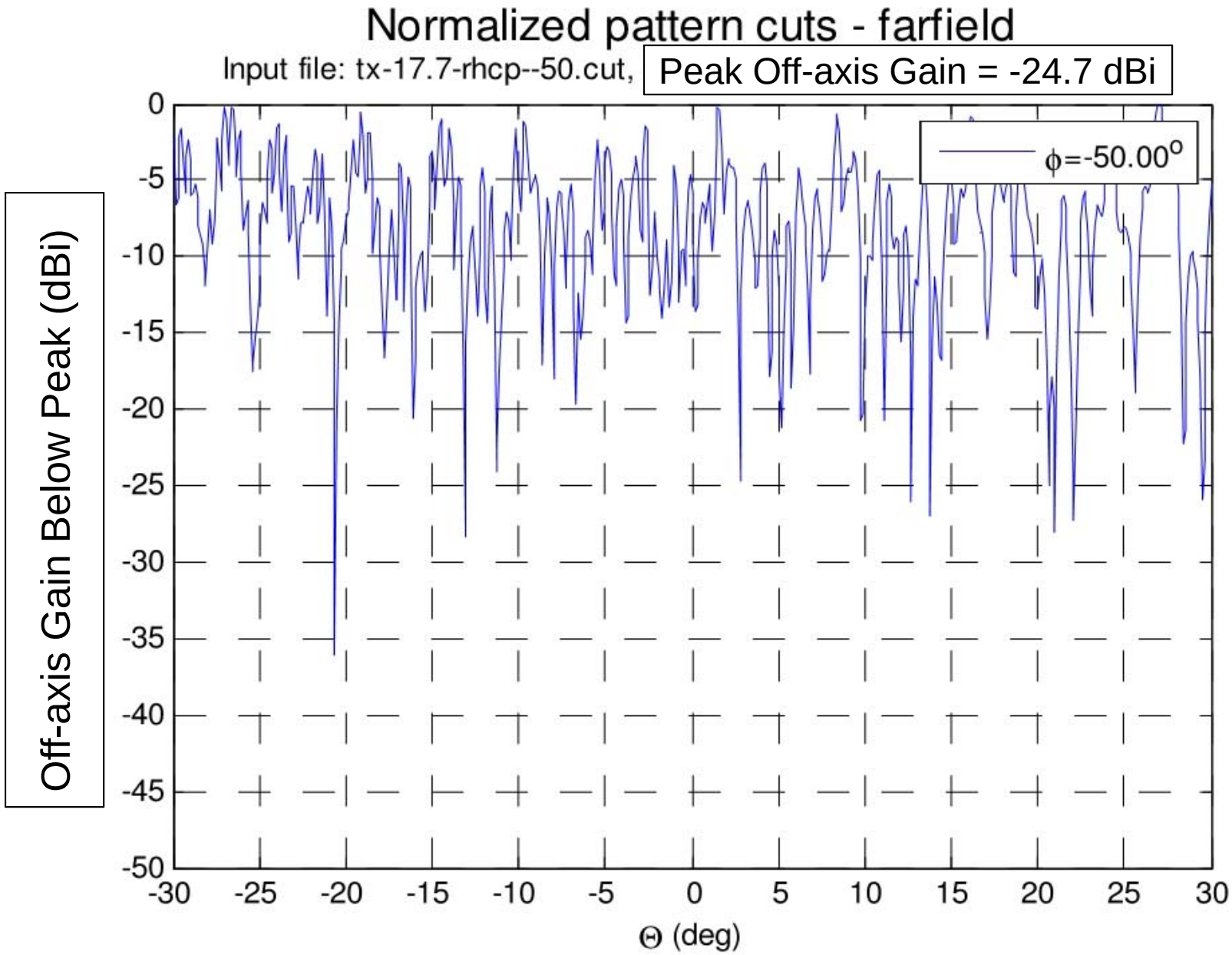

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp-40.cut,
Peak Off-axis Gain = -23.4 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

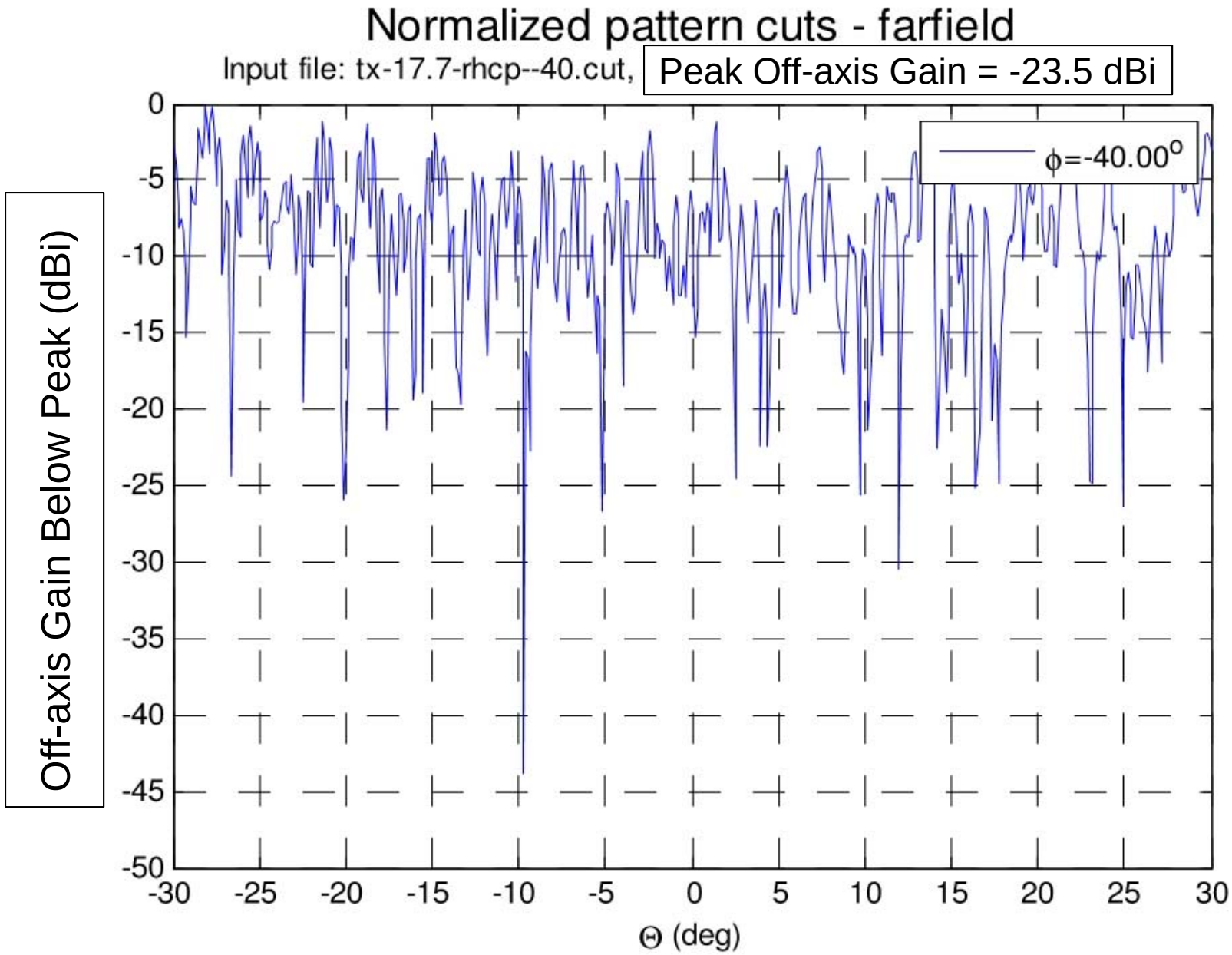

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp-50.cut,
Peak Off-axis Gain = -24.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

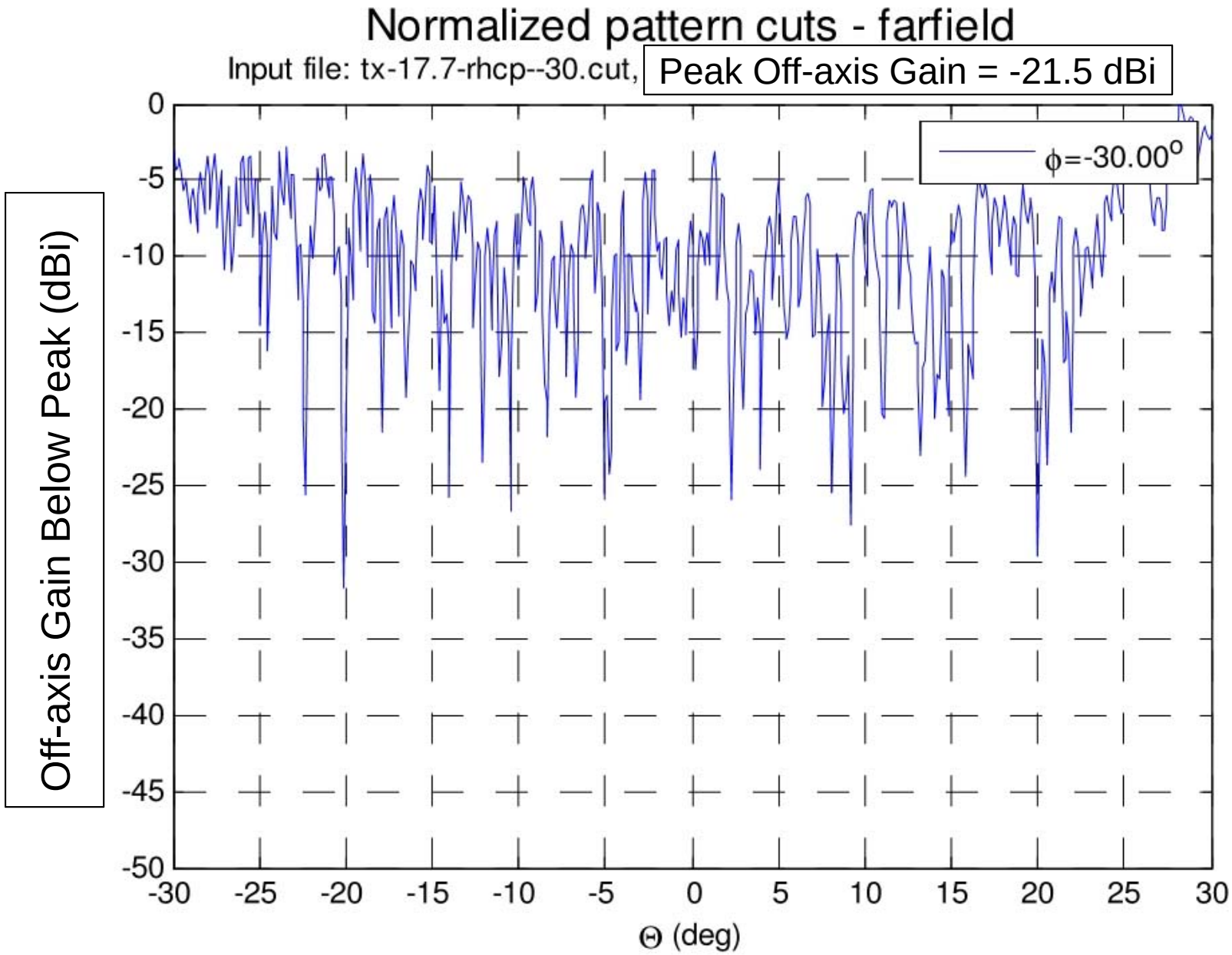

Normalized pattern cuts - farfield
Input file: tx-17.5-lhcp-60.cut,
Peak Off-axis Gain = -23.8 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

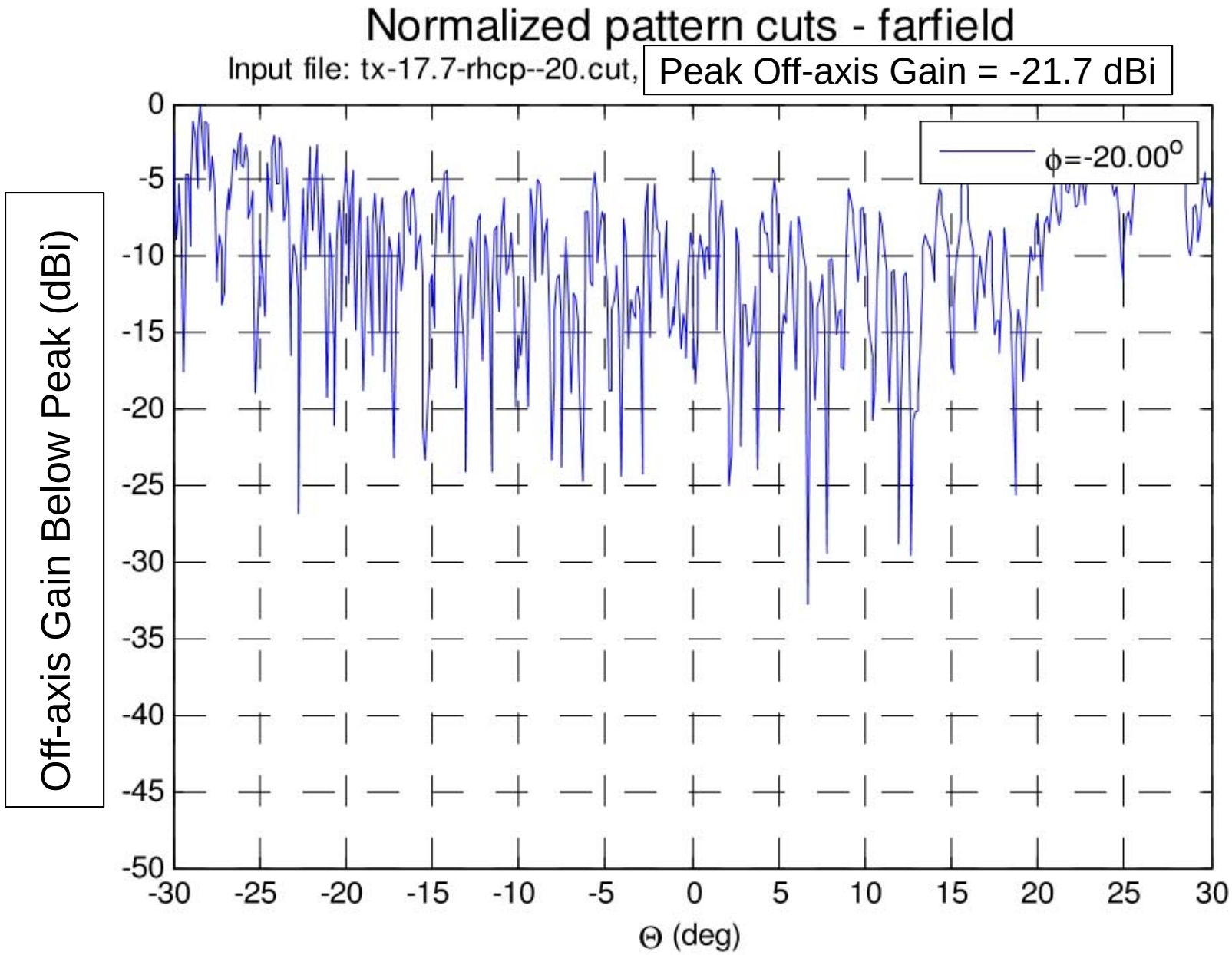
RHCP = 17.695 GHz

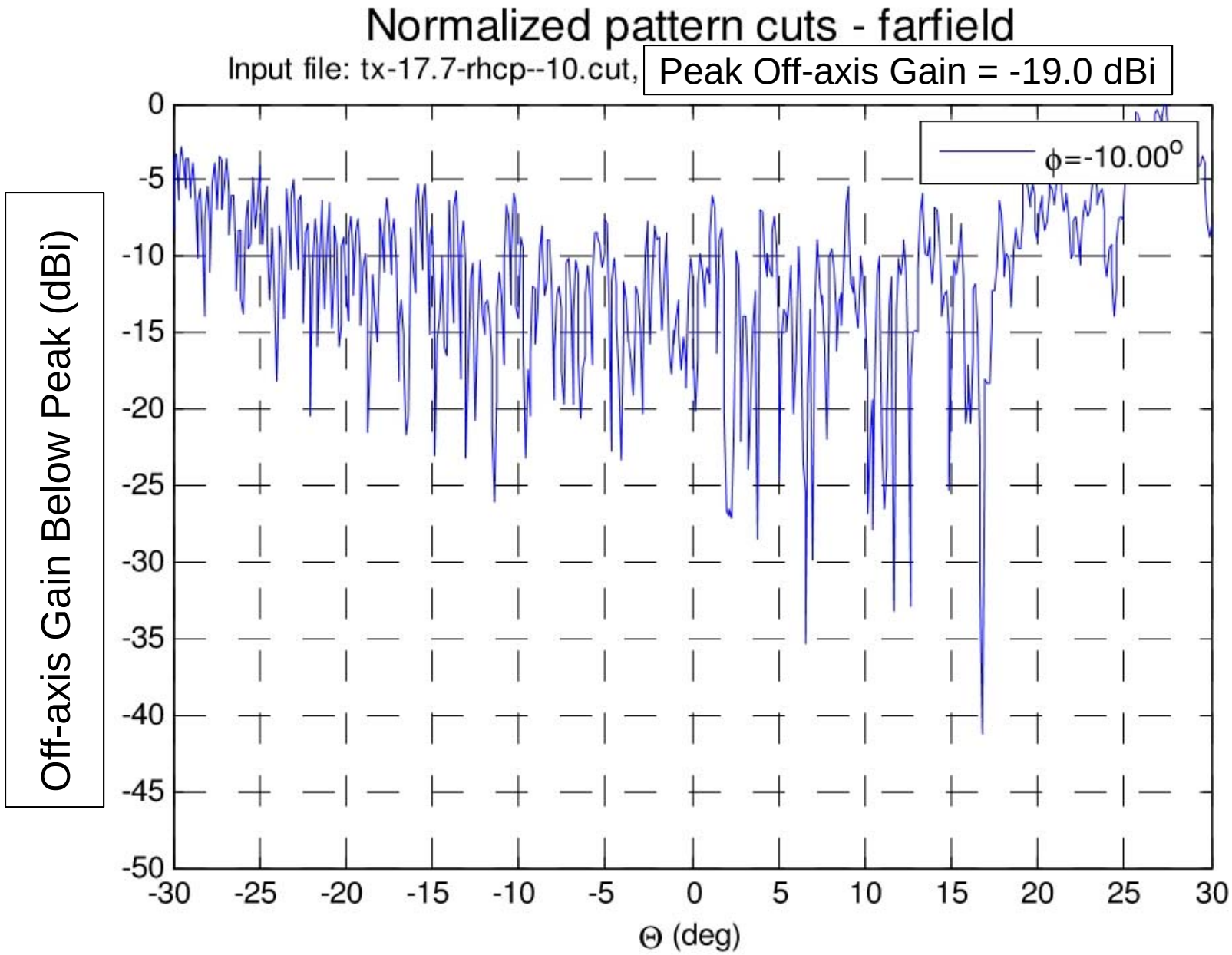

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp--60.cut,
Peak Off-axis Gain = -25.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

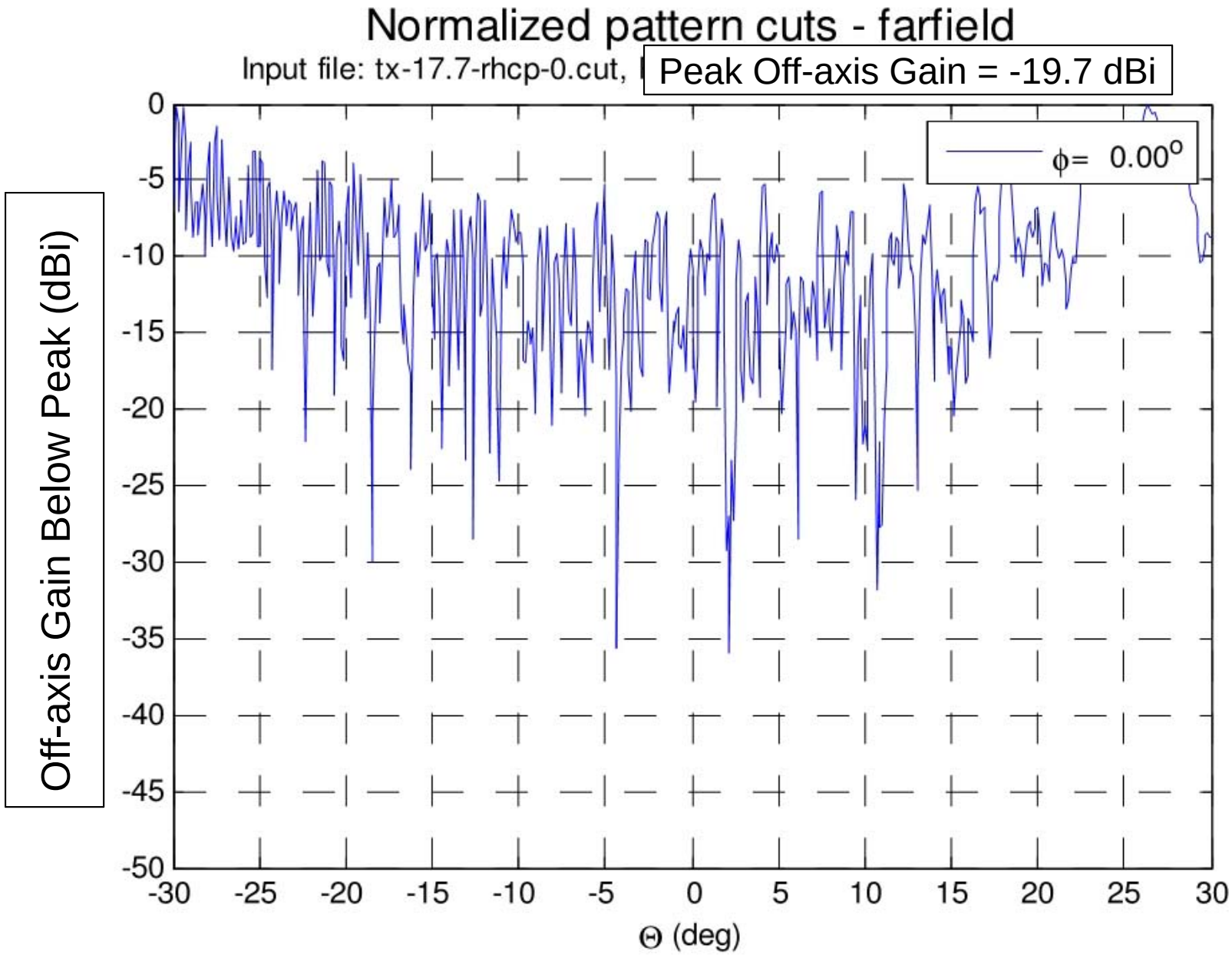

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp--50.cut,
Peak Off-axis Gain = -24.7 dBi
Off-axis Gain Below Peak (dBi)
φ=-50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

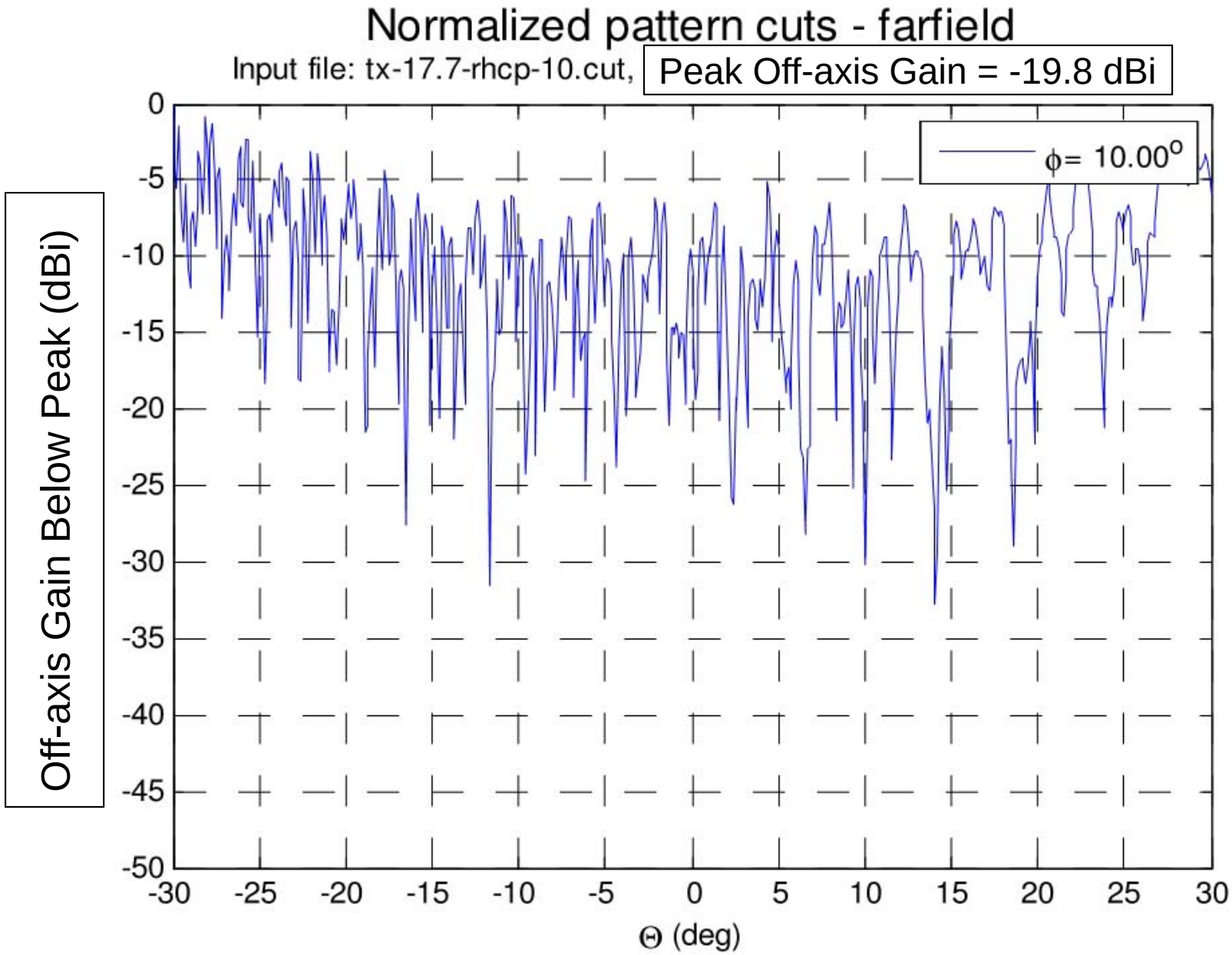

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp--40.cut,
Peak Off-axis Gain = -23.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

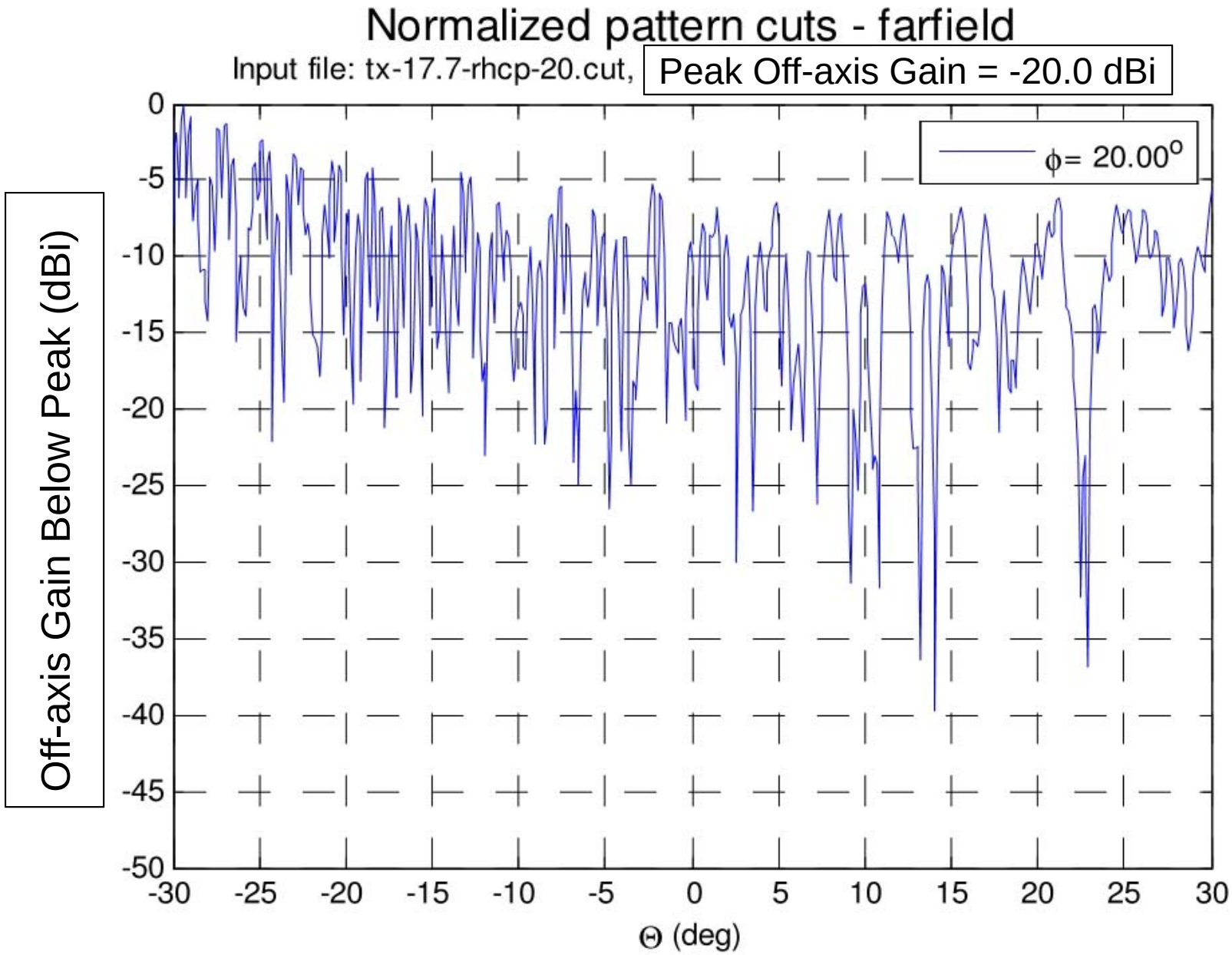

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp--30.cut,
Peak Off-axis Gain = -21.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

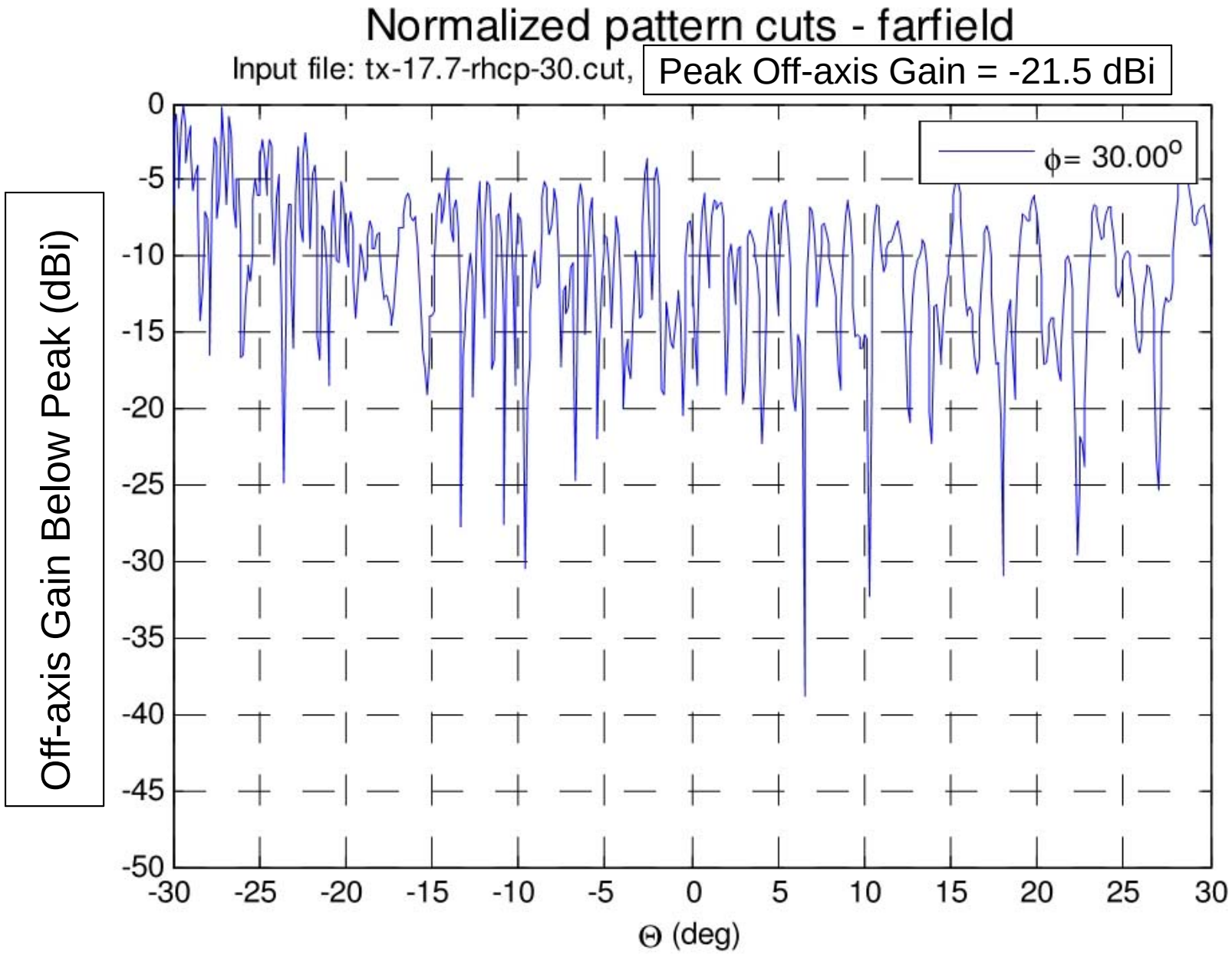

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp--20.cut,
Peak Off-axis Gain = -21.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

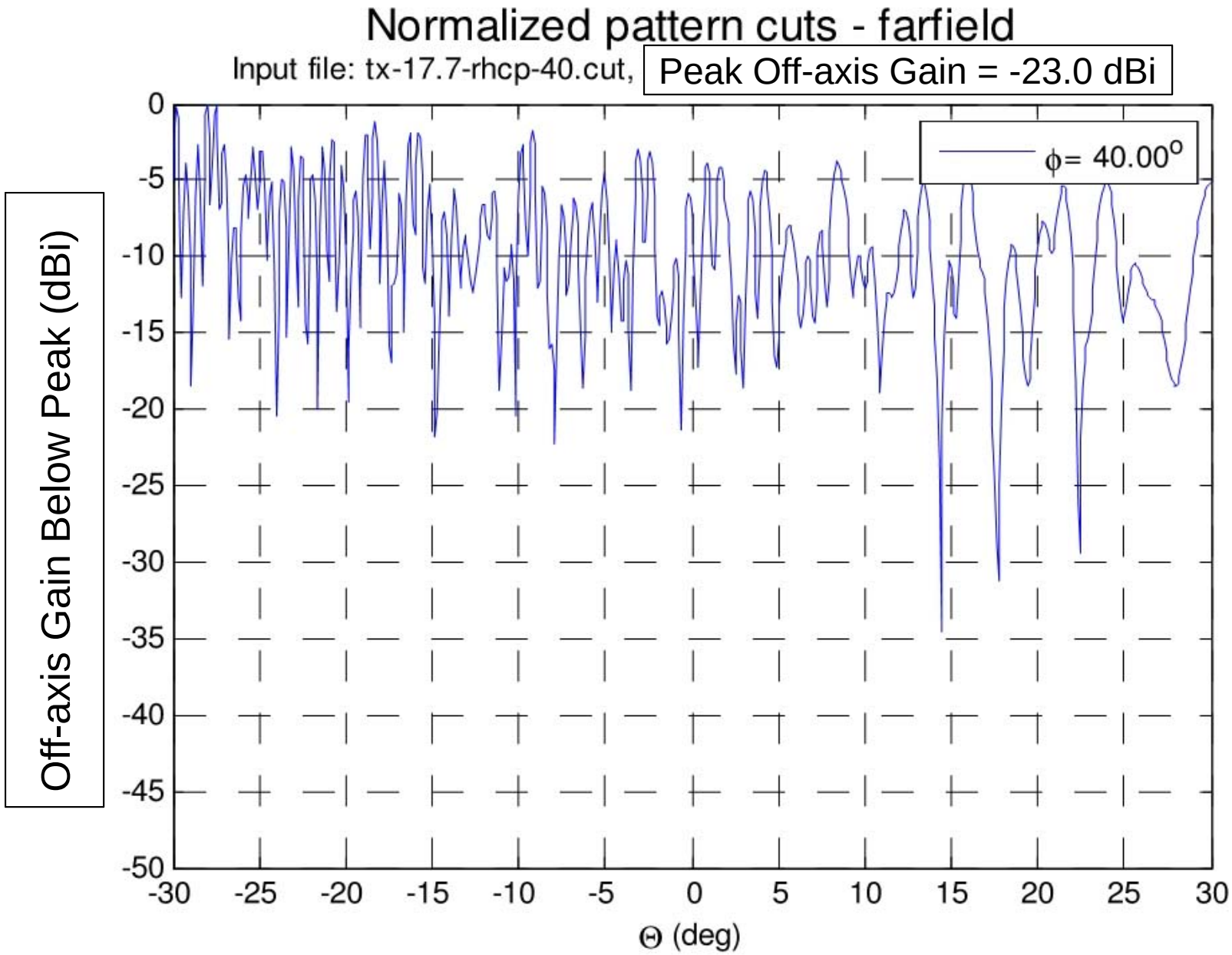

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp--10.cut,
Peak Off-axis Gain = -19.0 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

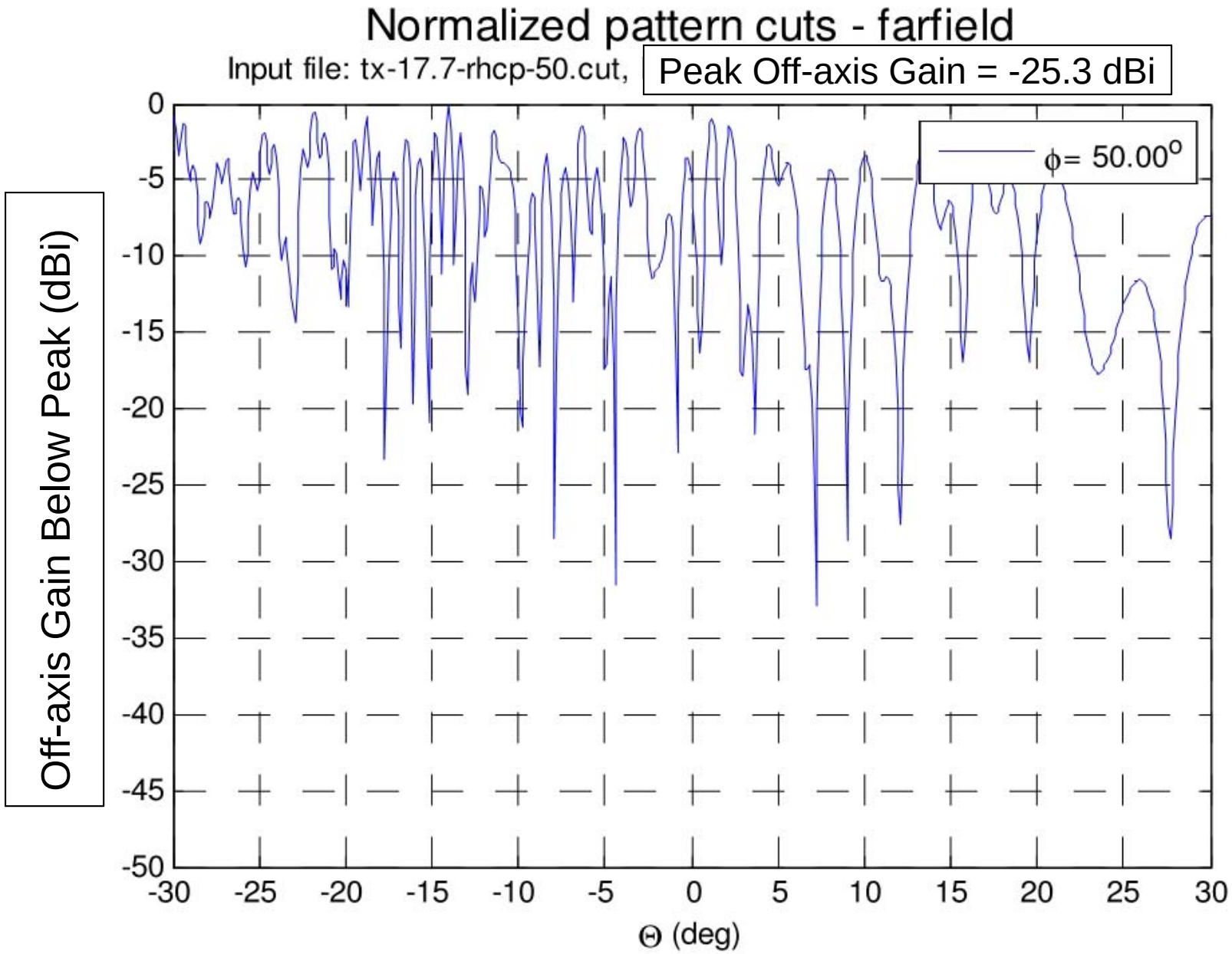

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp-0.cut,
Peak Off-axis Gain = -19.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 0.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

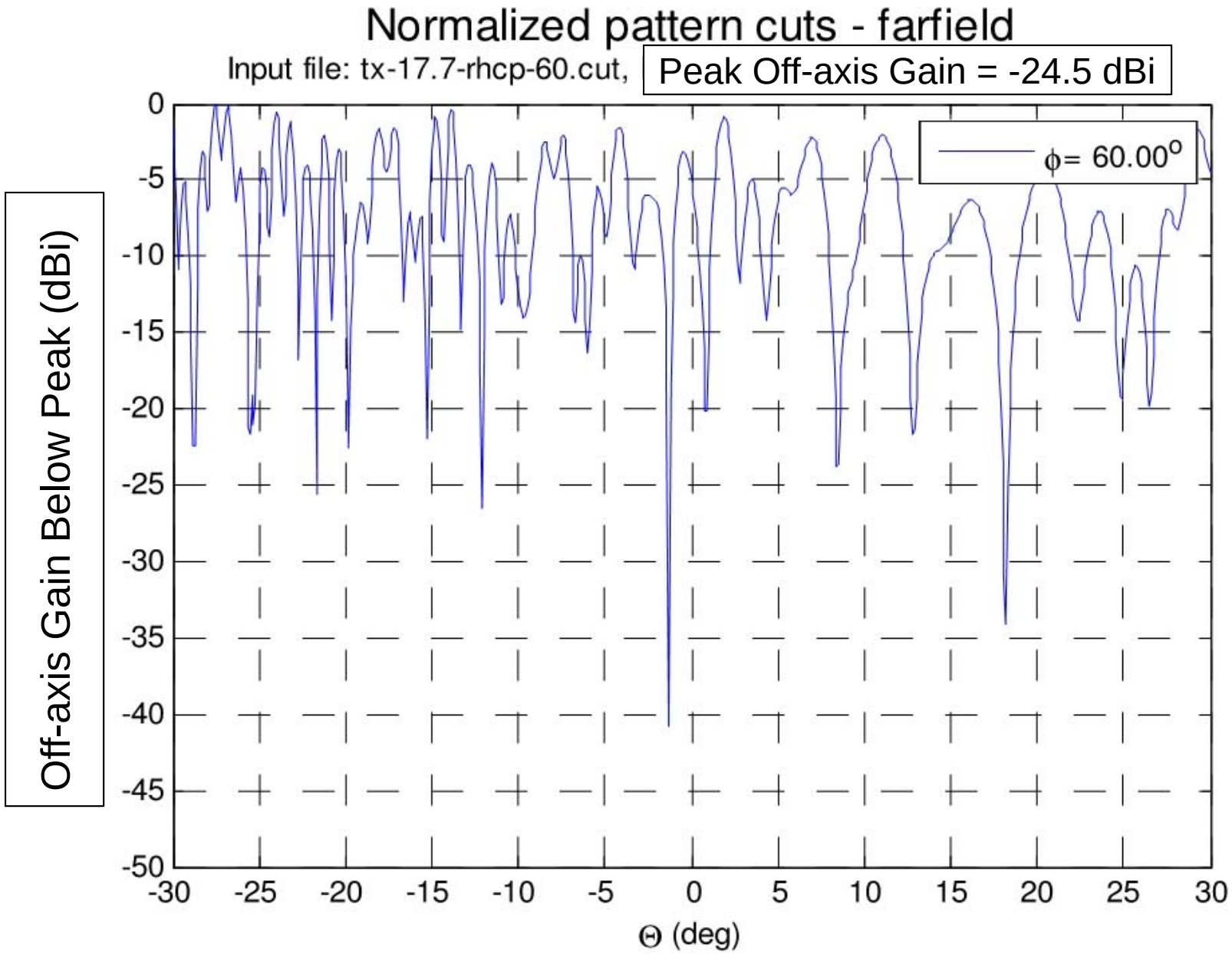

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp-10.cut,
Peak Off-axis Gain = -19.8 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp-20.cut,
Peak Off-axis Gain = -20.0 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

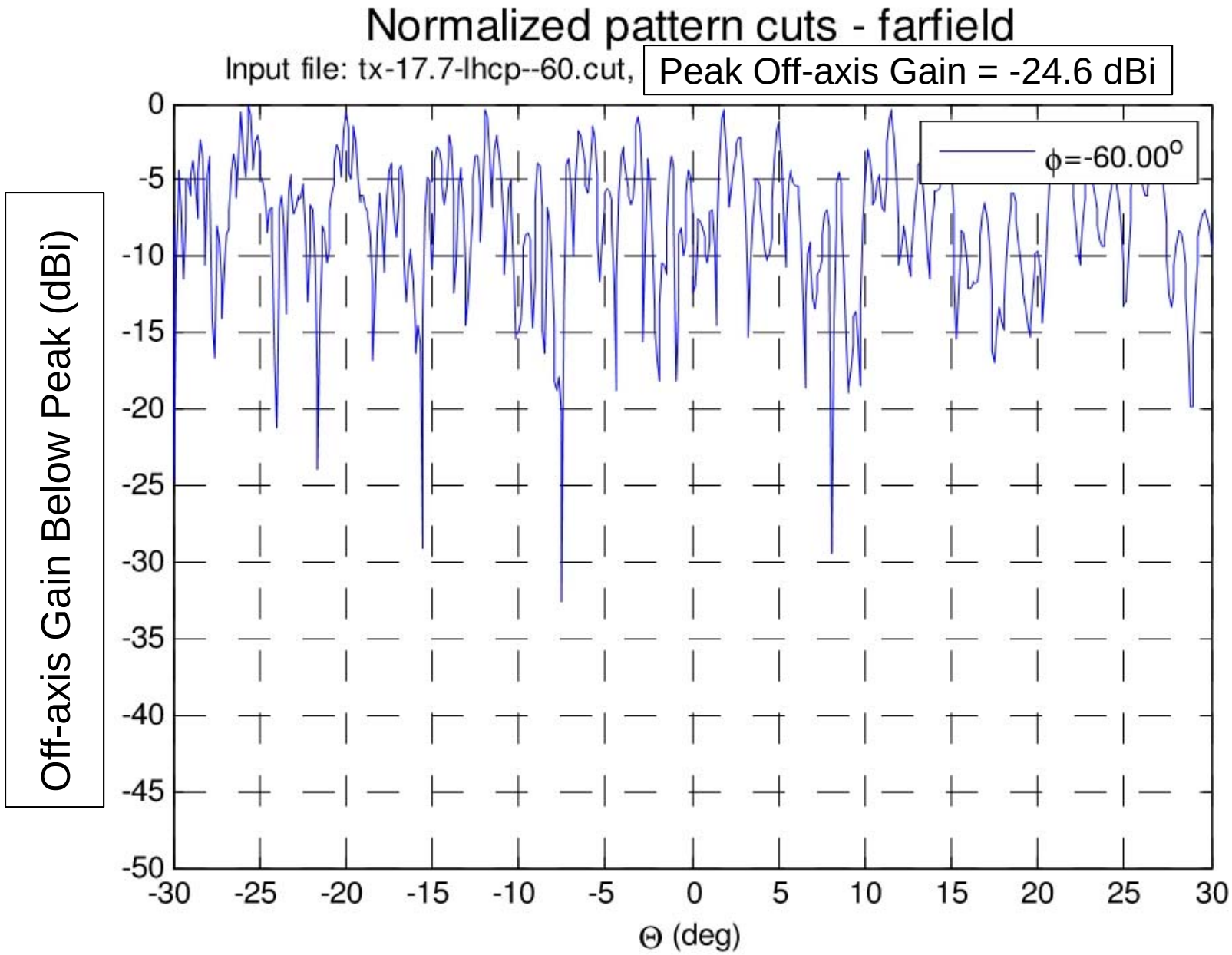

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp-30.cut,
Peak Off-axis Gain = -21.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

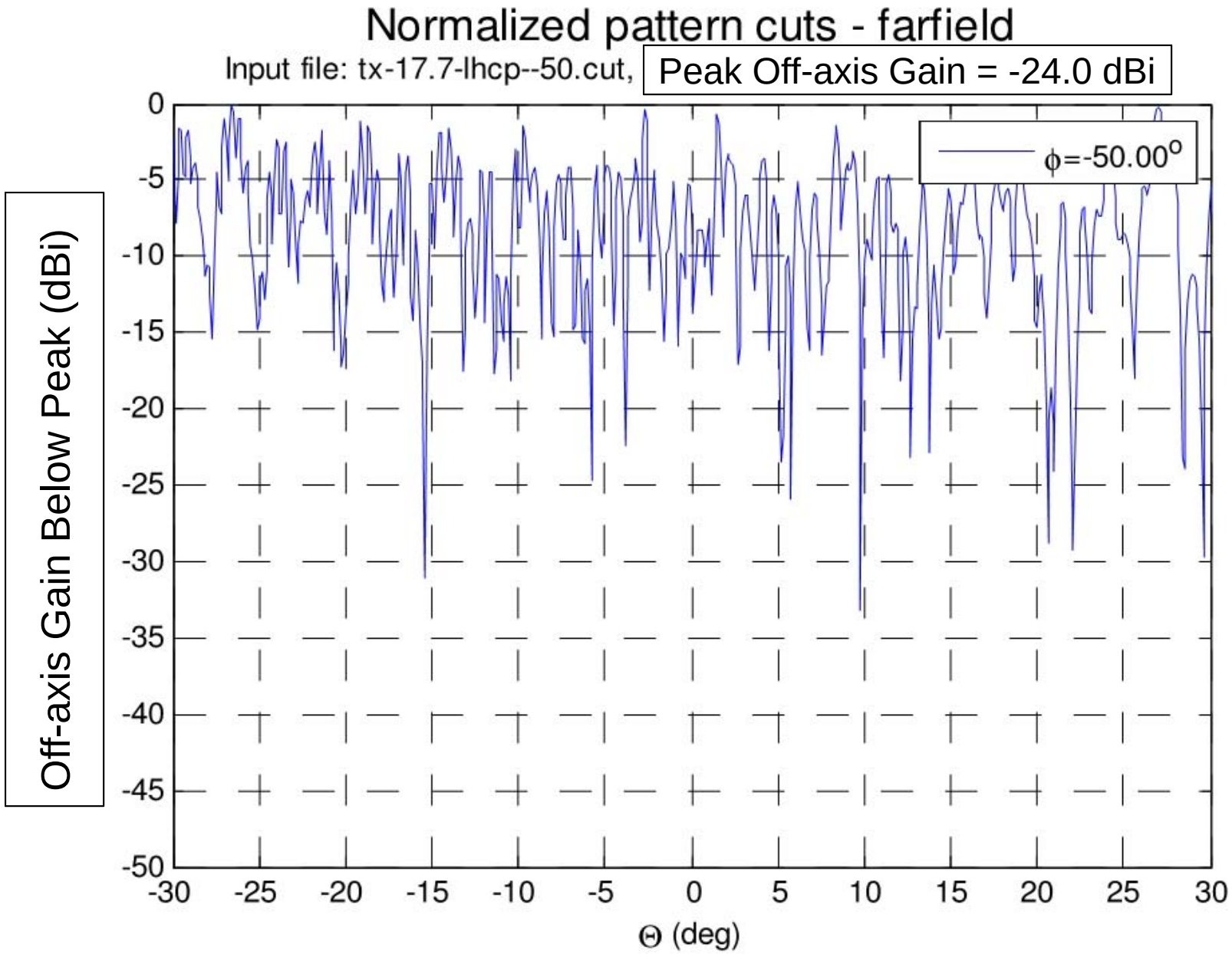

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp-40.cut,
Peak Off-axis Gain = -23.0 dBi
ϕ= 40.00°
Off-axis Gain Below Peak (dBi)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

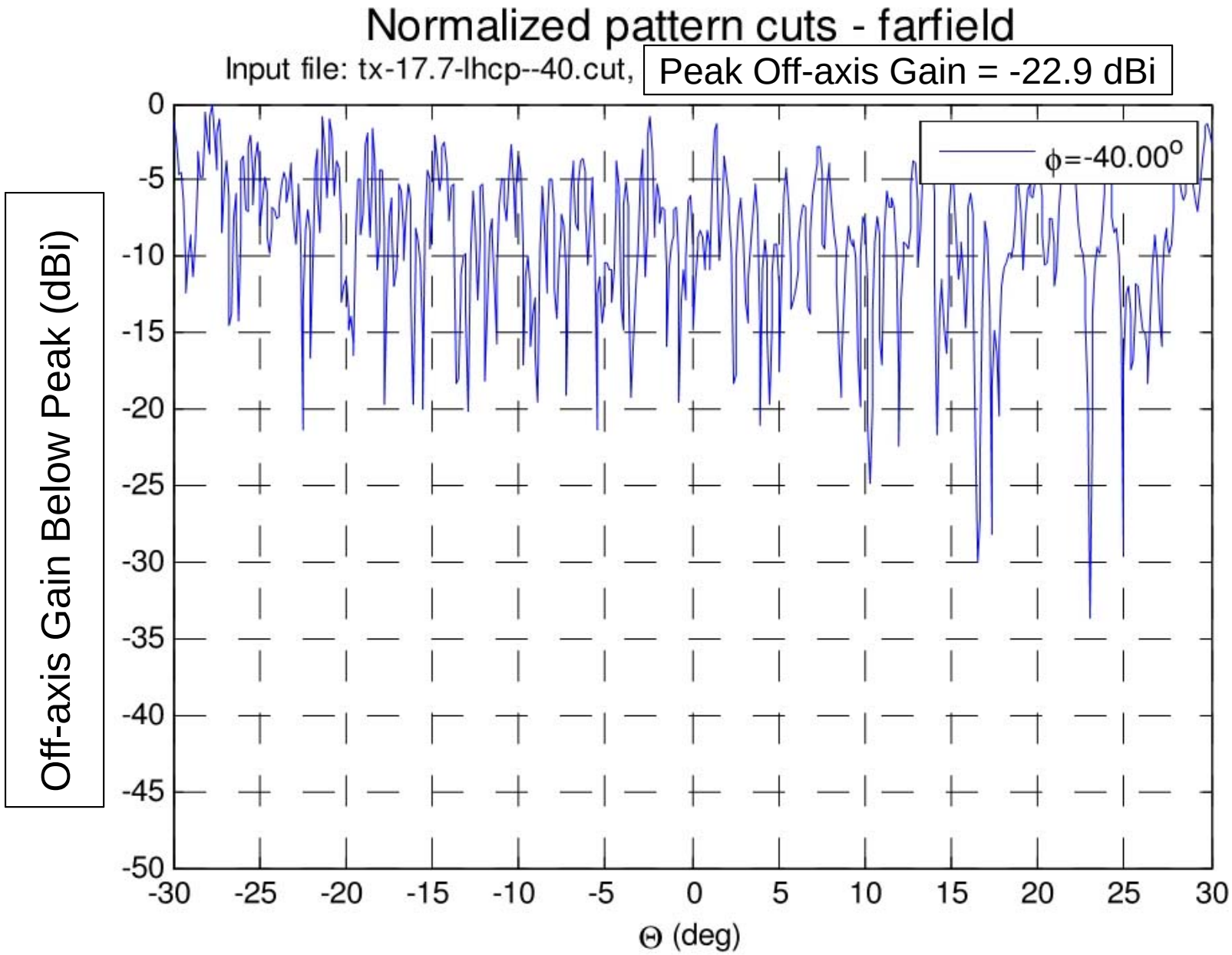

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp-50.cut,
Peak Off-axis Gain = -25.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

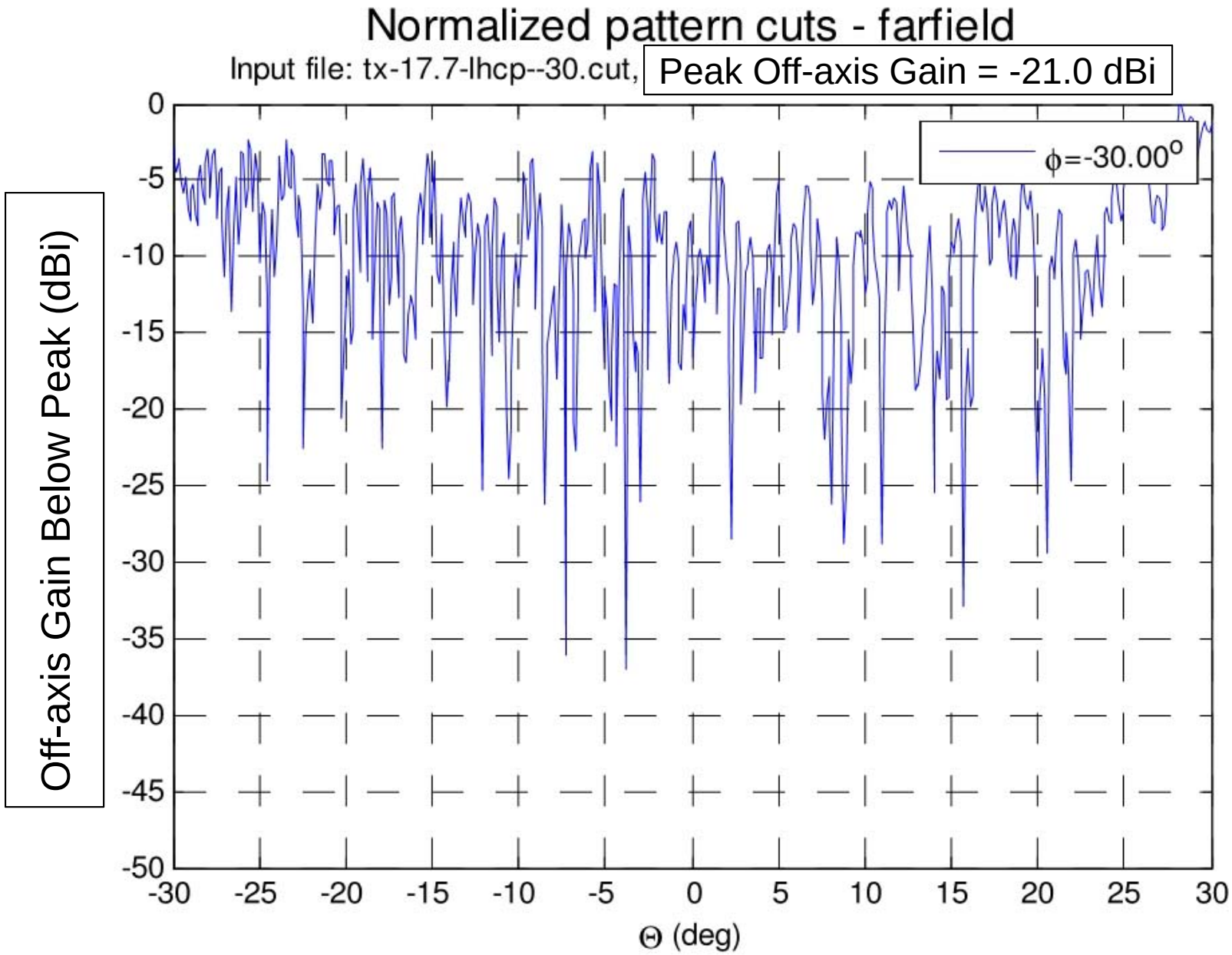

Normalized pattern cuts - farfield
Input file: tx-17.7-rhcp-60.cut,
Peak Off-axis Gain = -24.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

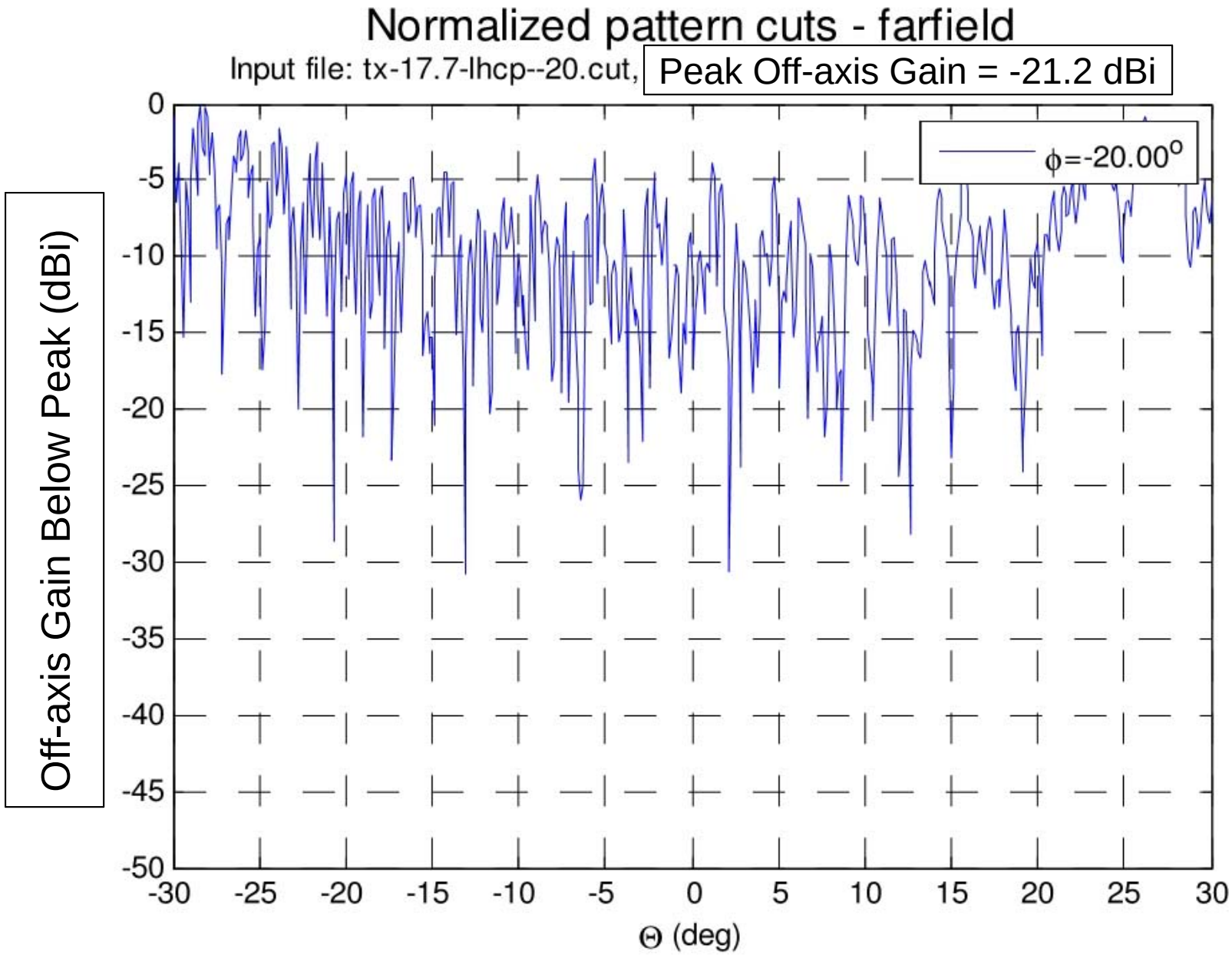
LHCP = 17.695 GHz

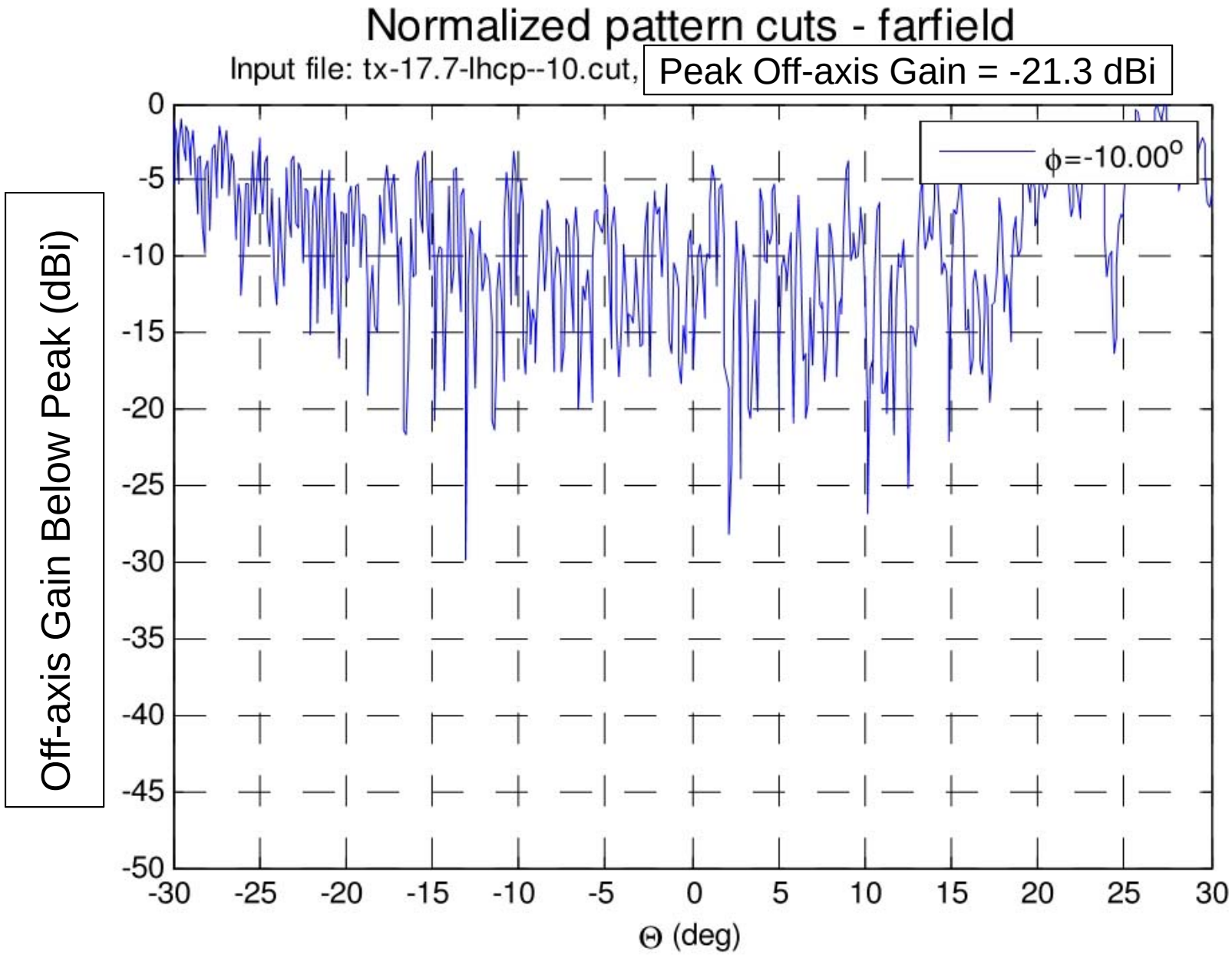

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp--60.cut,
Peak Off-axis Gain = -24.6 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

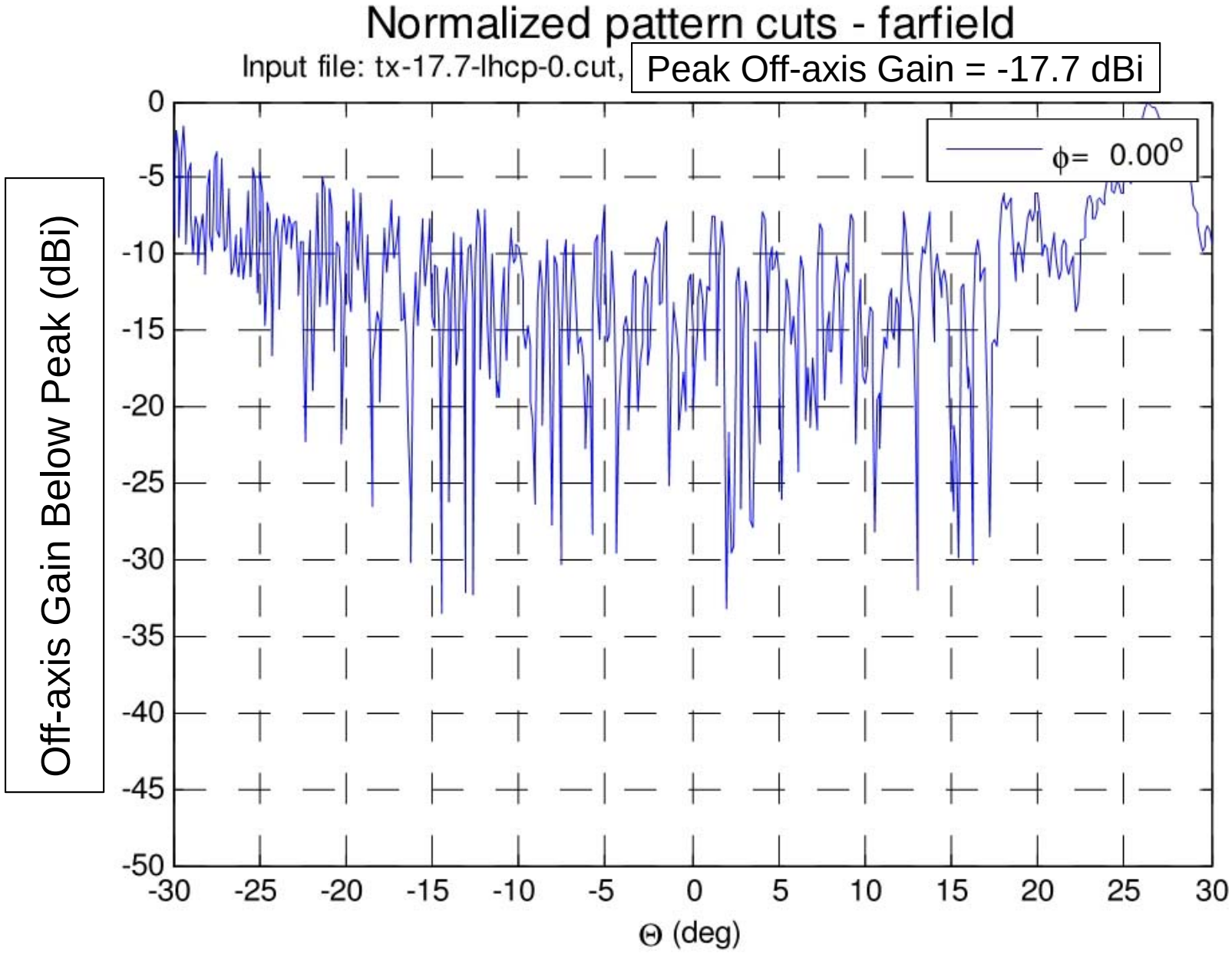

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp--50.cut,
Peak Off-axis Gain = -24.0 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

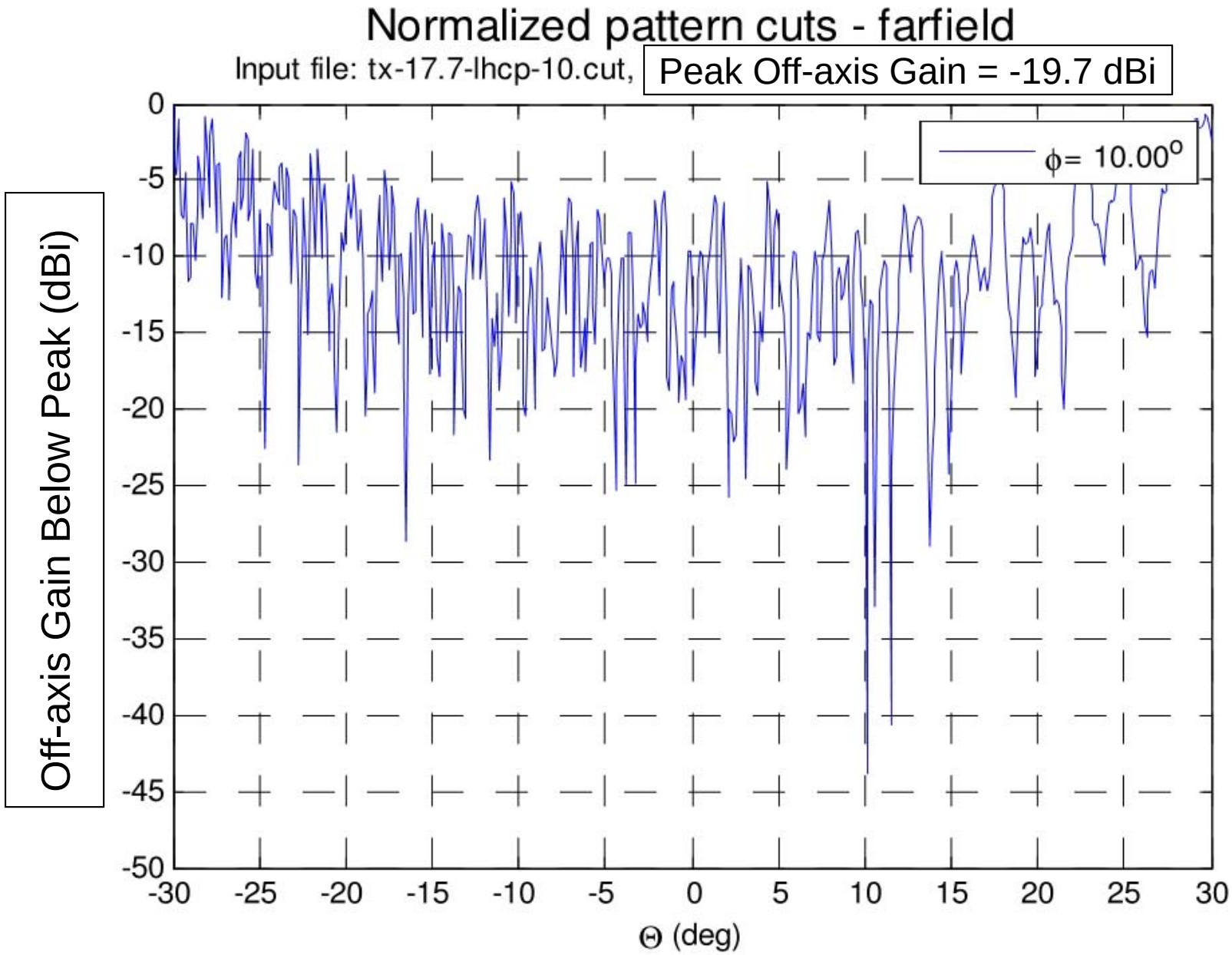

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp--40.cut,
Peak Off-axis Gain = -22.9 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-40.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

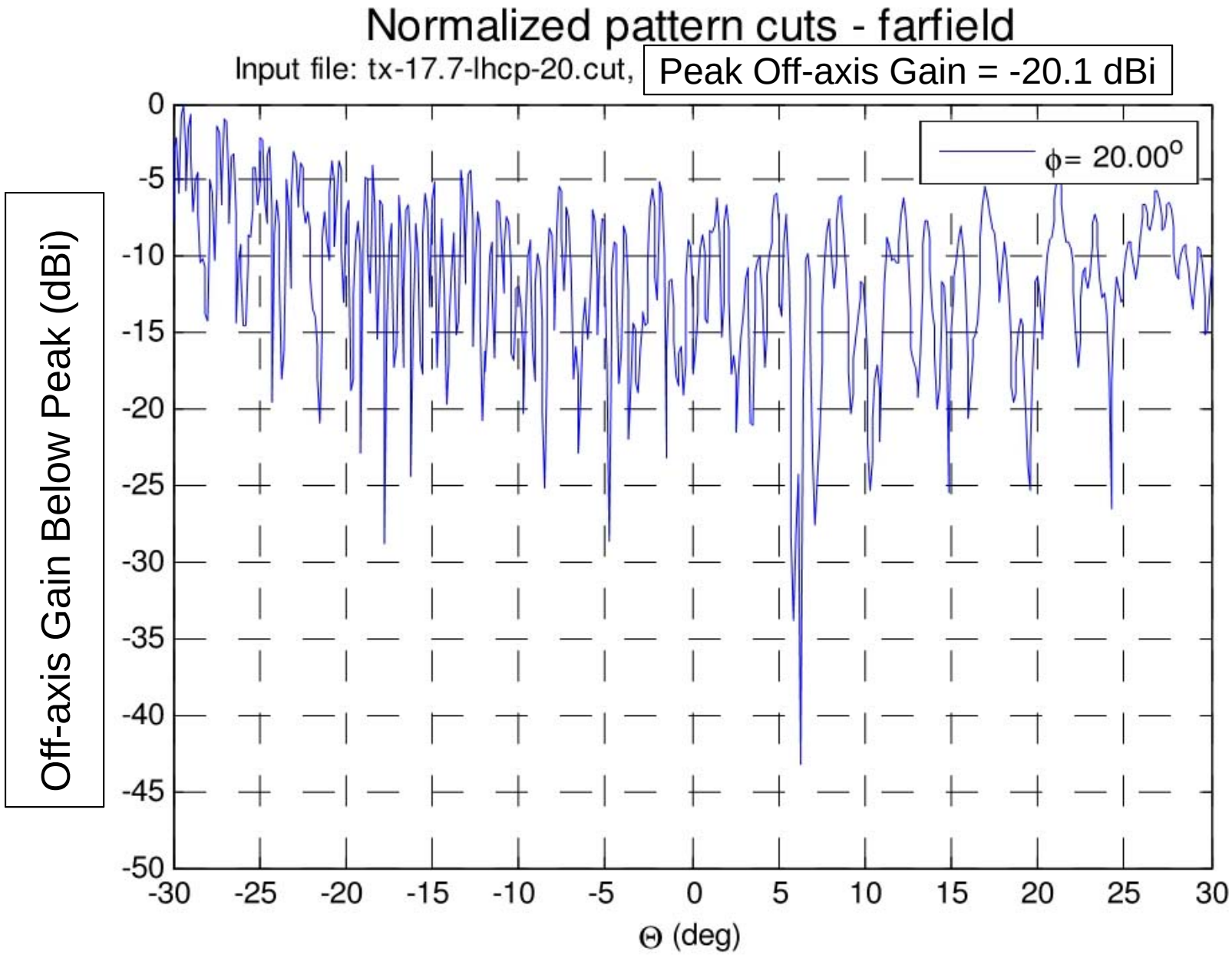

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp--30.cut,
Peak Off-axis Gain = -21.0 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

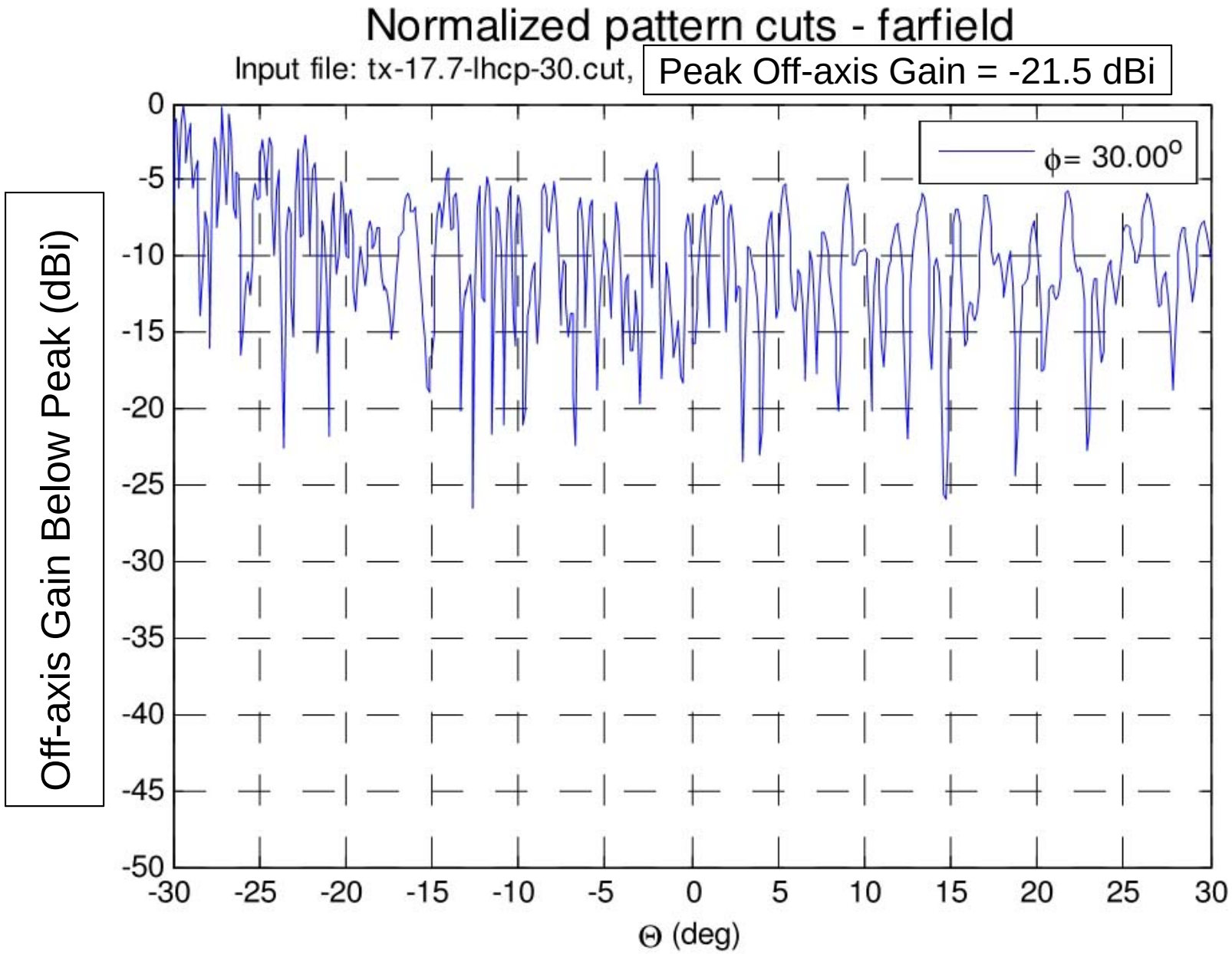

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp--20.cut,
Peak Off-axis Gain = -21.2 dBi
Off-axis Gain Below Peak (dBi)
ϕ=-20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

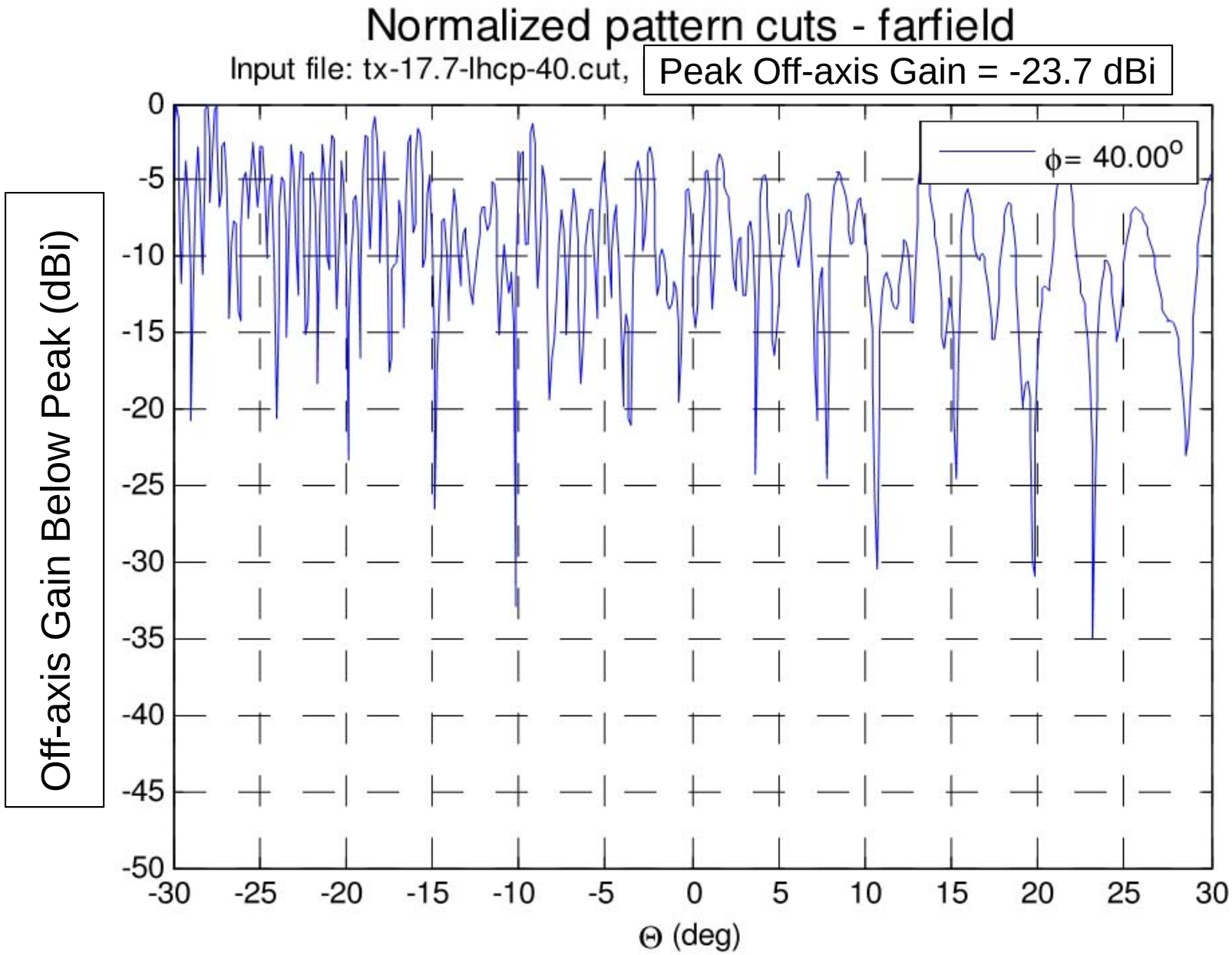

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp--10.cut,
Peak Off-axis Gain = -21.3 dBi
Off-axis Gain Below Peak (dBi)
φ=-10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

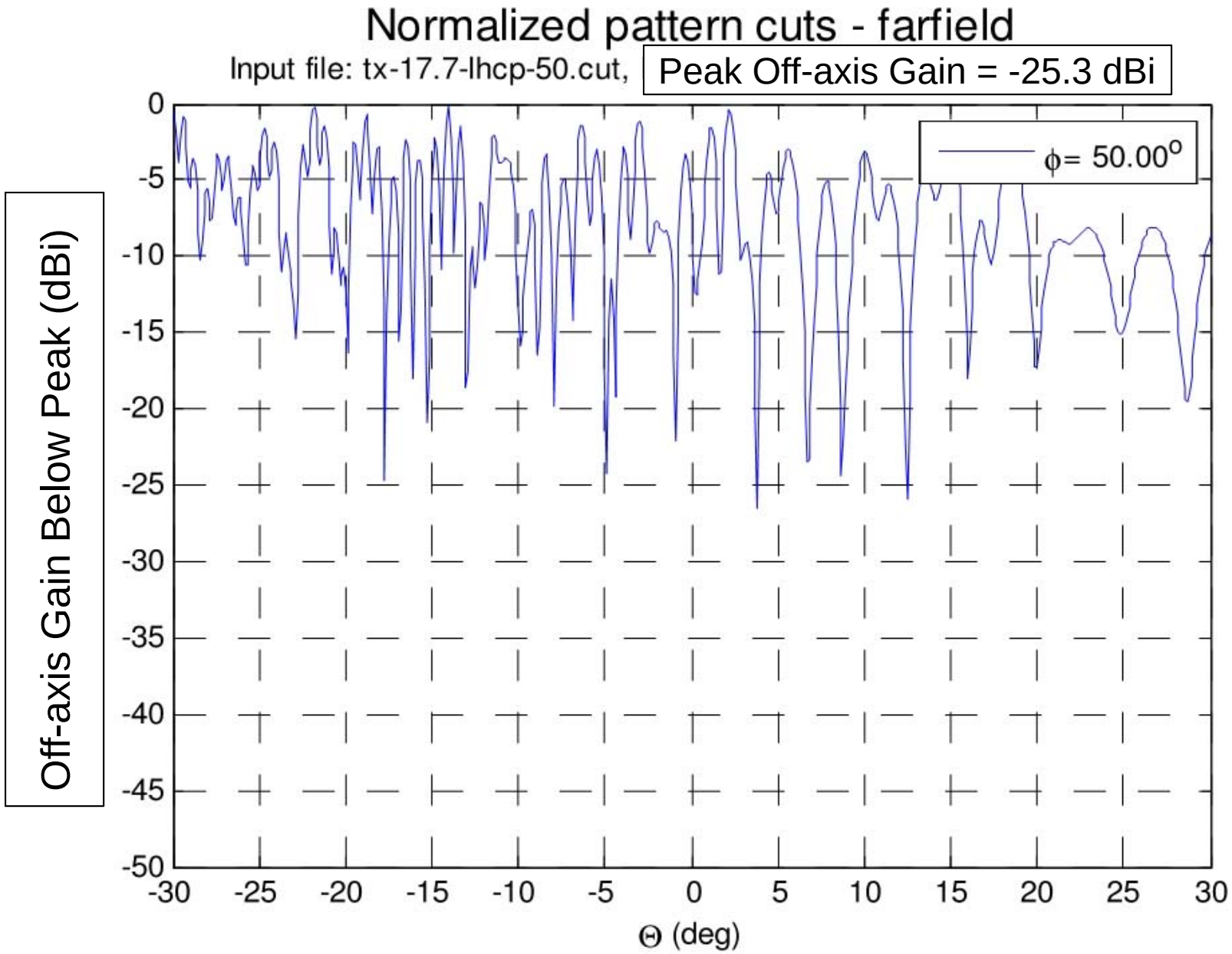

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp-0.cut,
Peak Off-axis Gain = -17.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 0.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)

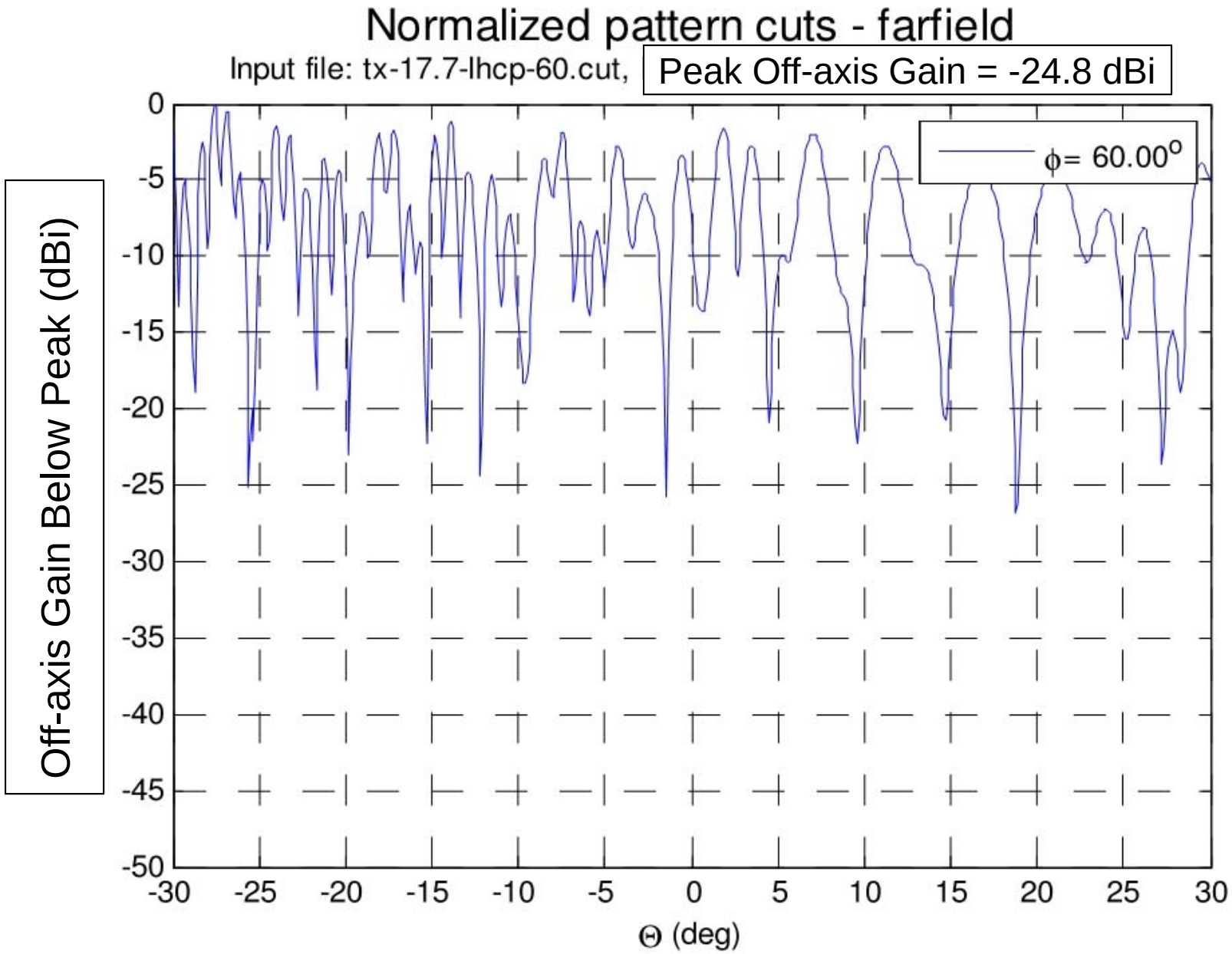

Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp-10.cut,
Peak Off-axis Gain = -19.7 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 10.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp-20.cut,
Peak Off-axis Gain = -20.1 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 20.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp-30.cut,
Peak Off-axis Gain = -21.5 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 30.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp-40.cut,
Peak Off-axis Gain = -23.7 dBi
ϕ= 40.00°
Off-axis Gain Below Peak (dBi)
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp-50.cut,
Peak Off-axis Gain = -25.3 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 50.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)


Normalized pattern cuts - farfield
Input file: tx-17.7-lhcp-60.cut,
Peak Off-axis Gain = -24.8 dBi
Off-axis Gain Below Peak (dBi)
ϕ= 60.00°
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
Θ (deg)