

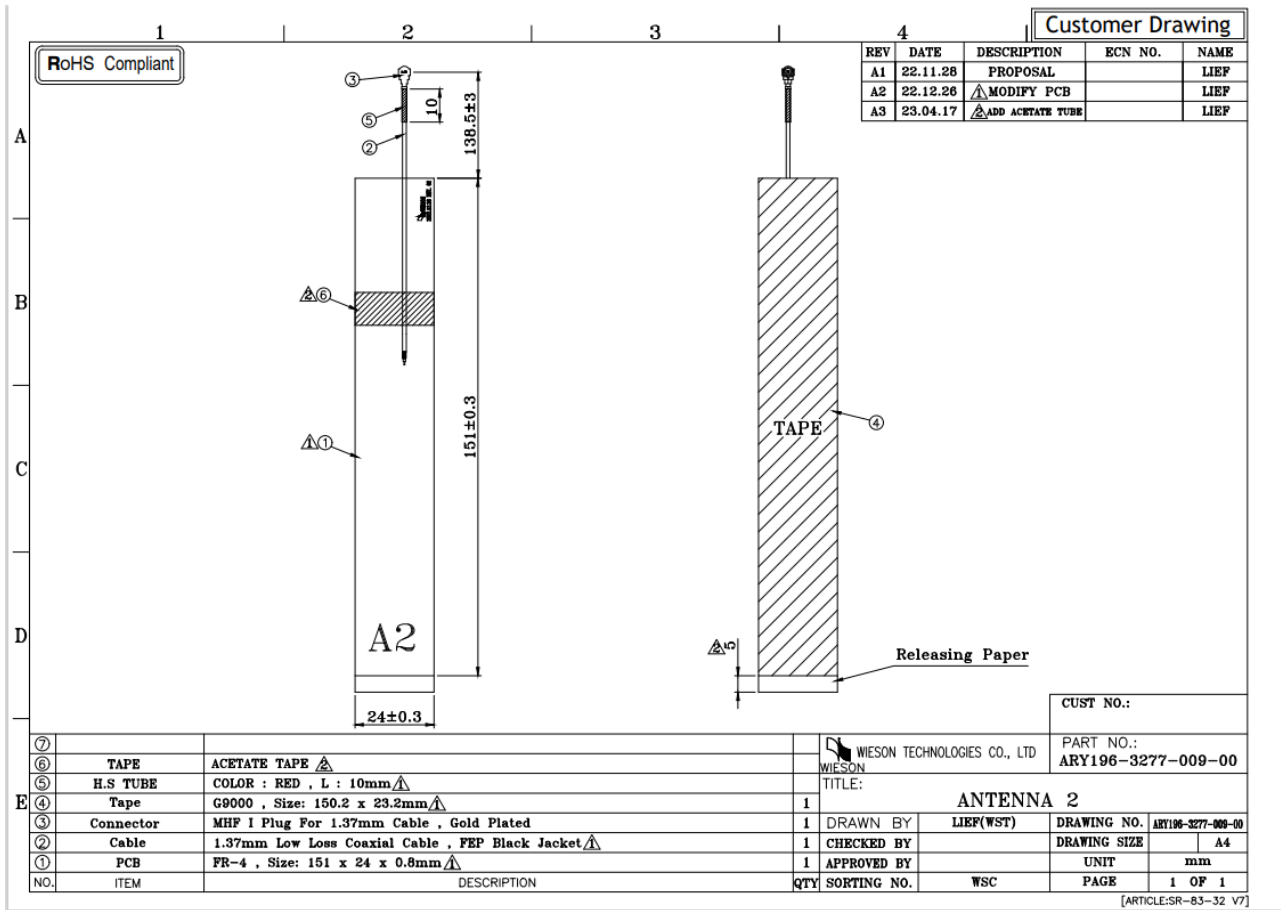


# **D-Link 530 ARY196-3277-009-00 Only Antenna**

**Engineer : Wade**

**Report date : 2023/04/13**





[ARTICLE:SR-83-32 V7]

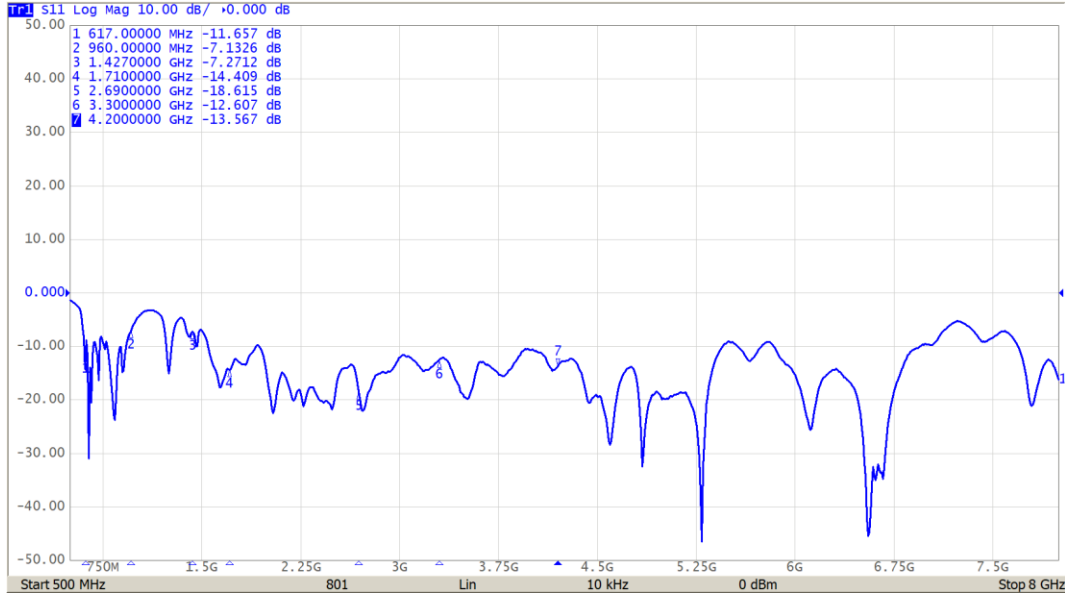
A2

# Antenna specification

Item	Specification	Item	Specification	Item	Specification
Operating Frequency(GHz)	0.617-0.96	Operating Frequency(GHz)	1.427-2.69	Operating Frequency(GHz)	3.3-4.2
Bandwidth	343 MHz (Min.)	Bandwidth	1263 MHz (Min.)	Bandwidth	900 MHz (Min.)
Return Loss	7 dB (Min.)	Return Loss	6 dB (Min.)	Return Loss	10 dB (Min.)
Polarization	Linear	Polarization	Linear	Polarization	Linear
Azimuth Bandwidth	Omni-directional	Azimuth Bandwidth	Omni-directional	Azimuth Bandwidth	Omni-directional
Peak Gain	4.7dBi (Max.)	Peak Gain	4.9dBi (Max.)	Peak Gain	4.7dBi (Max.)
Impedance	50Ω	Impedance	50Ω	Impedance	50Ω
Material	PCB	Material	PCB	Material	PCB
Connector	MHF I	Connector	MHF I	Connector	MHF I
Cable type	O.D. 1.37 L/L	Cable type	O.D. 1.37 L/L	Cable type	O.D. 1.37 L/L
Maximum Power	1W	Maximum Power	1W	Maximum Power	1W
V.S.W.R	2.5 : 1	V.S.W.R	3 : 1	V.S.W.R	2 : 1
Radiation	Omni directional	Radiation	Omni directional	Radiation	Omni directional
Efficiency	49%(Max.)	Efficiency	57%(Max.)	Efficiency	63%(Max.)
Operating Temperature	-10~60°C	Operating Temperature	-10~60°C	Operating Temperature	-10~60°C
Storage temp	-10~70°C	Storage temp	-10~70°C	Storage temp	-10~70°C

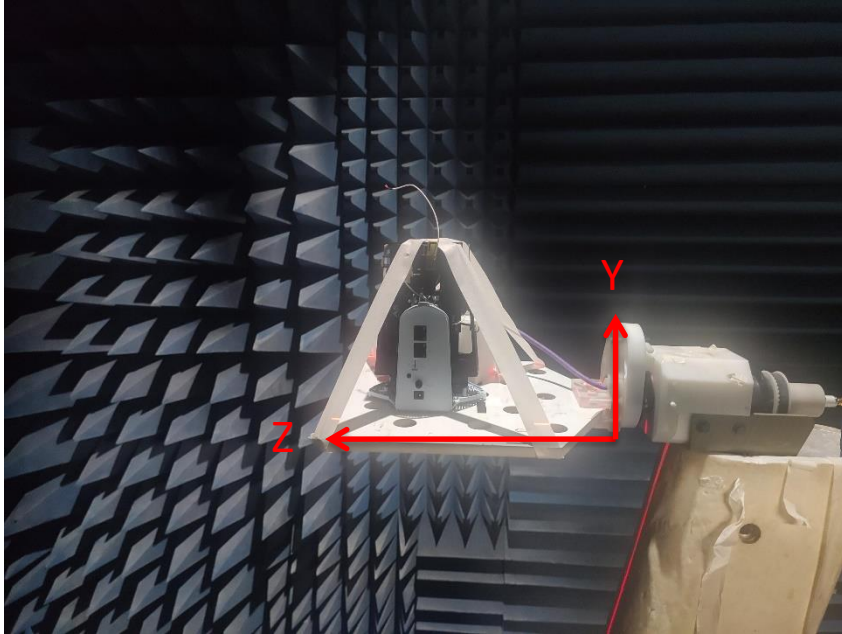
# S-Parameter

A2



Freq(MHz)	617	960	1427	1710	2690	3300	4200
S11(dB)	-11.7	-7.1	-7.3	-14.4	-18.6	-12.6	-13.6

# chamber measurement photo



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# 3D Gain Total

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
<b>0.617</b>	1.9	-3.9	41
<b>0.658</b>	1.7	-3.7	43
<b>0.698</b>	2.2	-4.0	40
<b>0.703</b>	2.6	-4.0	40
<b>0.74</b>	3.7	-3.7	42
<b>0.78</b>	2.7	-3.6	44
<b>0.84</b>	2.3	-3.9	40
<b>0.88</b>	3.6	-3.8	41
<b>0.894</b>	3.4	-3.9	41
<b>0.92</b>	3.9	-3.7	43
<b>0.96</b>	4.7	-3.1	49
<b>1.427</b>	2.4	-4.0	40

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
<b>1.452</b>	3.1	-3.9	41
<b>1.47</b>	1.5	-3.6	44
<b>1.496</b>	2.6	-3.2	48
<b>1.517</b>	2.0	-3.6	44
<b>1.71</b>	2.8	-2.9	52
<b>1.76</b>	2.6	-2.8	53
<b>1.81</b>	2.3	-3.0	50
<b>1.88</b>	2.1	-3.6	43
<b>1.91</b>	2.2	-4.0	40
<b>1.96</b>	3.2	-3.7	43
<b>2.01</b>	3.3	-3.2	48
<b>2.06</b>	4.3	-2.8	53

A2

# 3D Gain Total

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
<b>2.11</b>	3.2	-3.4	45
<b>2.17</b>	2.8	-2.8	52
<b>2.3</b>	4.9	-2.6	55
<b>2.35</b>	4.0	-2.6	55
<b>2.4</b>	4.0	-2.9	51
<b>2.45</b>	4.2	-2.6	55
<b>2.5</b>	4.5	-2.7	54
<b>2.55</b>	4.4	-2.5	57
<b>2.6</b>	3.7	-3.0	50
<b>2.65</b>	3.0	-2.6	55
<b>2.69</b>	2.9	-2.9	52
<b>3.3</b>	4.2	-2.7	53

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
<b>3.4</b>	3.6	-2.7	54
<b>3.5</b>	3.0	-2.8	53
<b>3.6</b>	4.1	-2.7	54
<b>3.7</b>	4.5	-2.8	53
<b>3.8</b>	4.7	-2.4	57
<b>3.9</b>	3.9	-2.0	63
<b>4</b>	3.5	-2.3	59
<b>4.1</b>	4.0	-2.2	60
<b>4.2</b>	3.5	-2.4	58

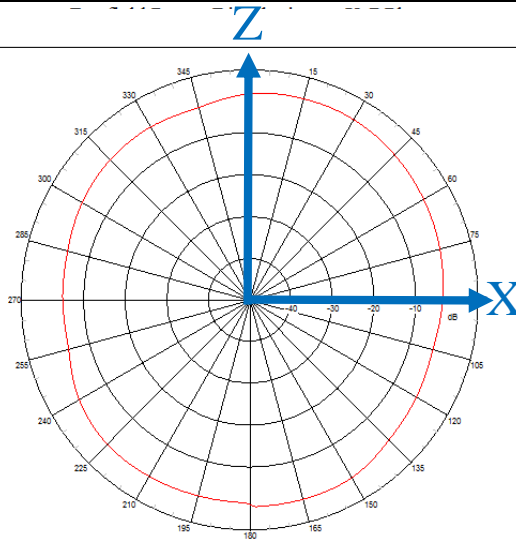
# Antenna Pattern

A2

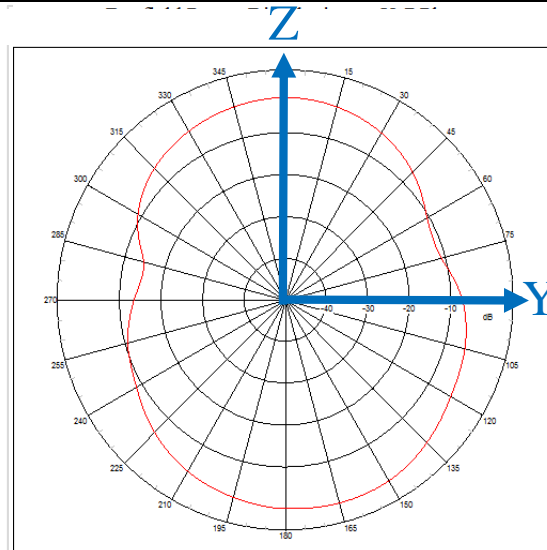
Frequency : 617MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
0.617	1.9	-3.9	41

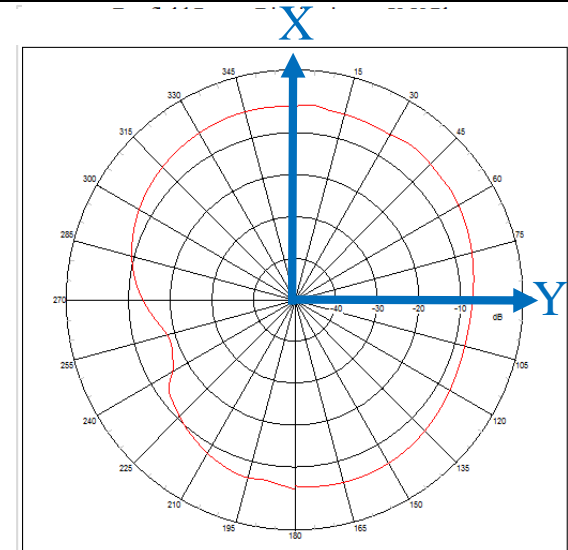
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

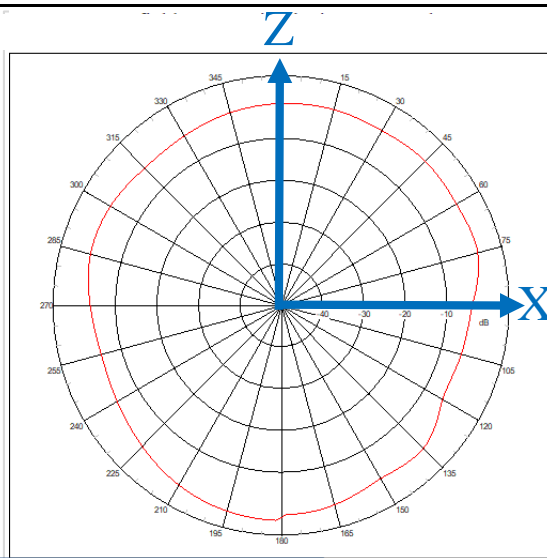
# Antenna Pattern

A2

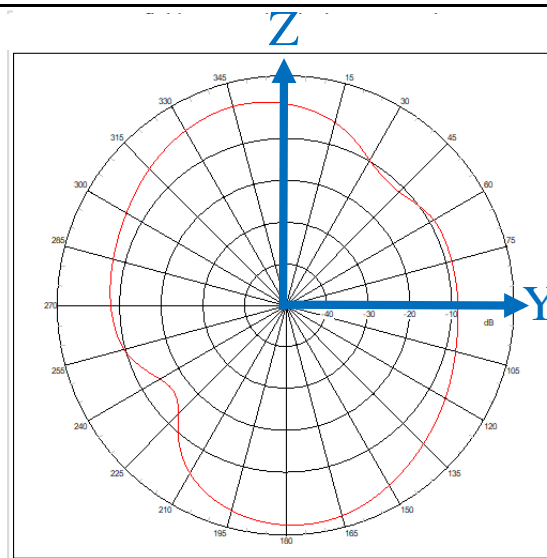
Frequency : 840MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
0.84	2.3	-3.9	40

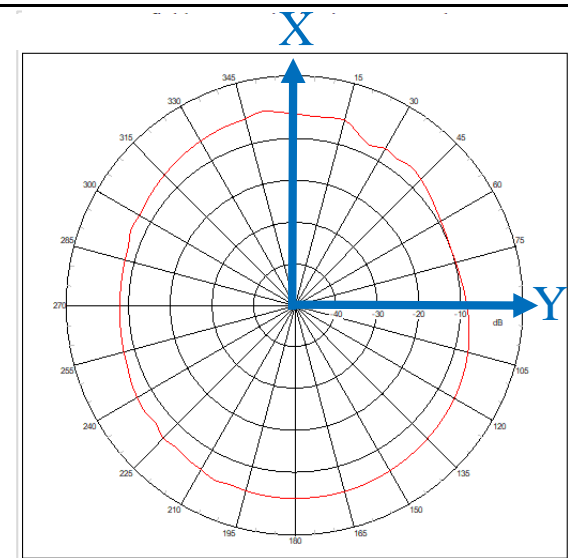
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

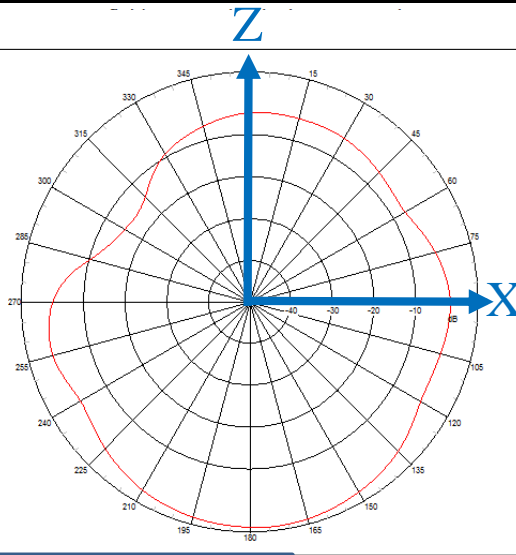
# Antenna Pattern

A2

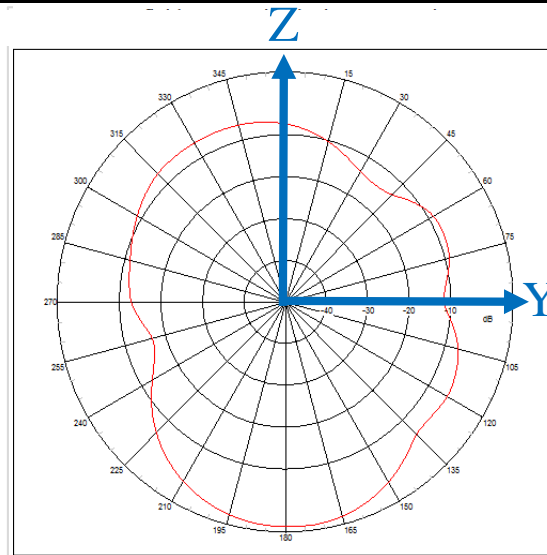
Frequency : 960MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
0.96	4.7	-3.1	49

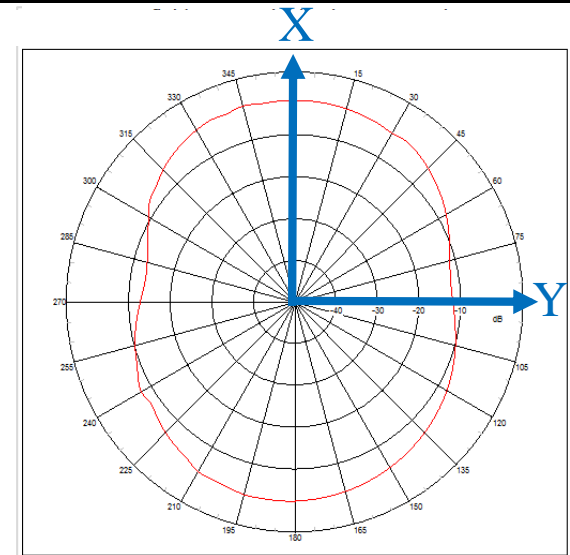
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

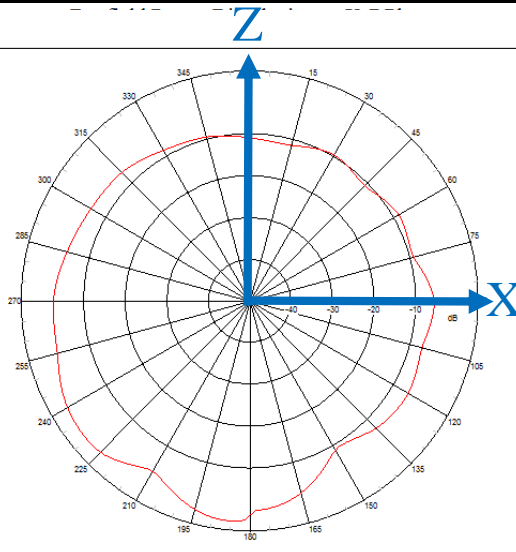
# Antenna Pattern

A2

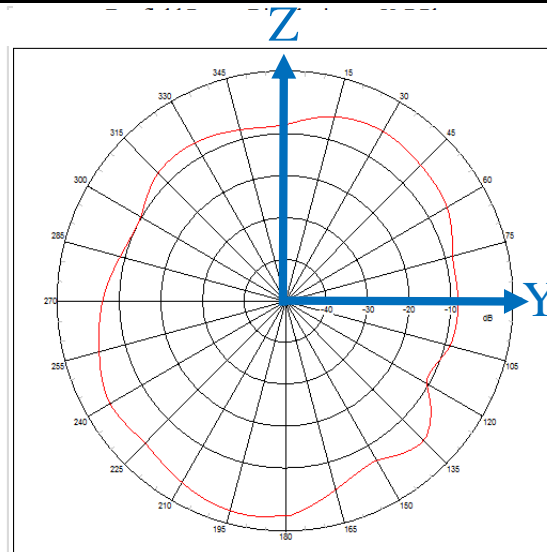
Frequency : 1427MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
1.427	2.4	-4.0	40

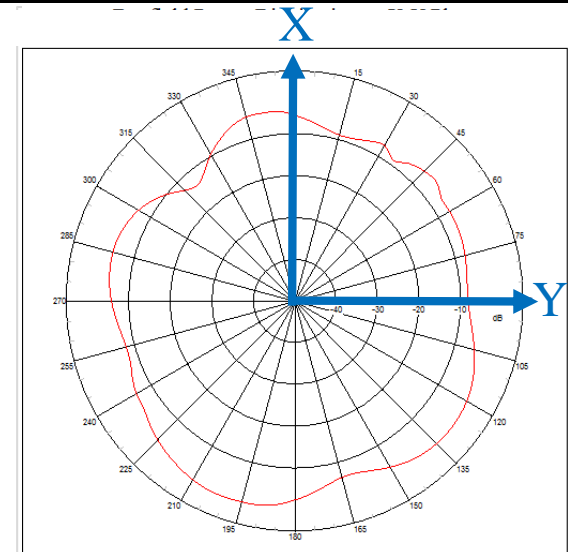
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

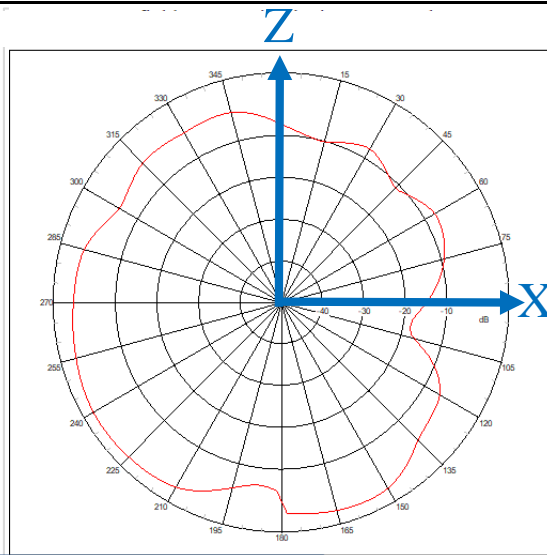
# Antenna Pattern

A2

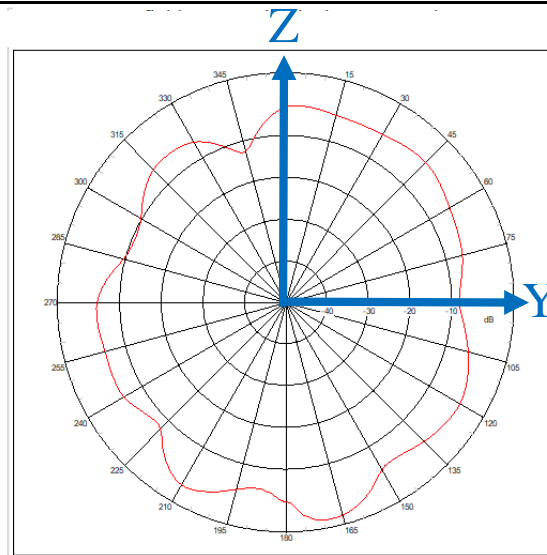
Frequency : 2170MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.17	2.8	-2.8	52

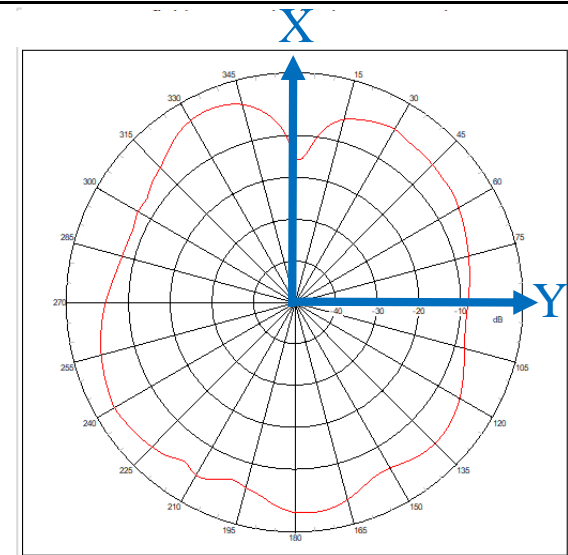
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

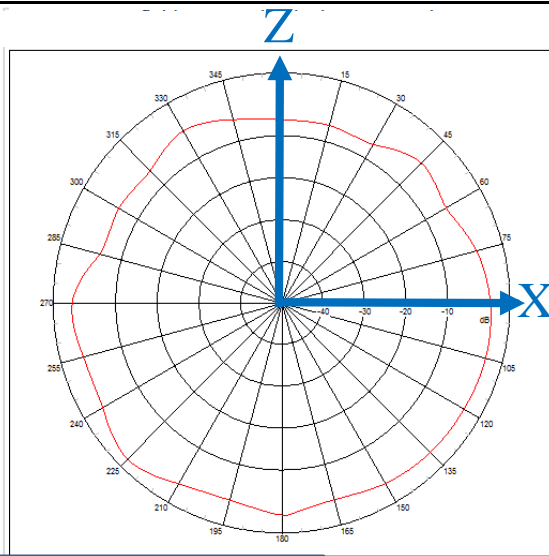
# Antenna Pattern

A2

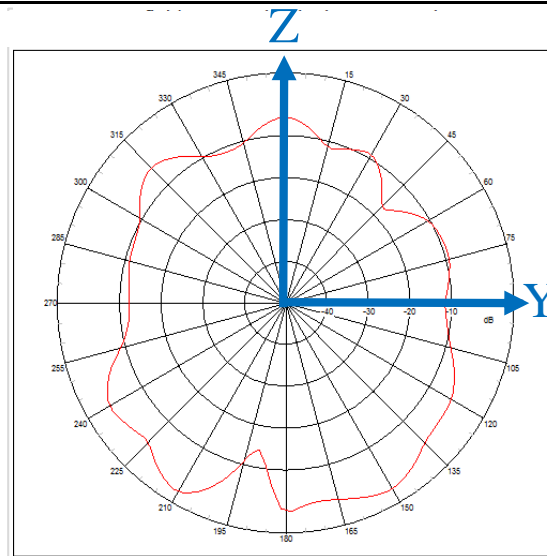
Frequency : 2690MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
2.69	2.9	-2.9	52

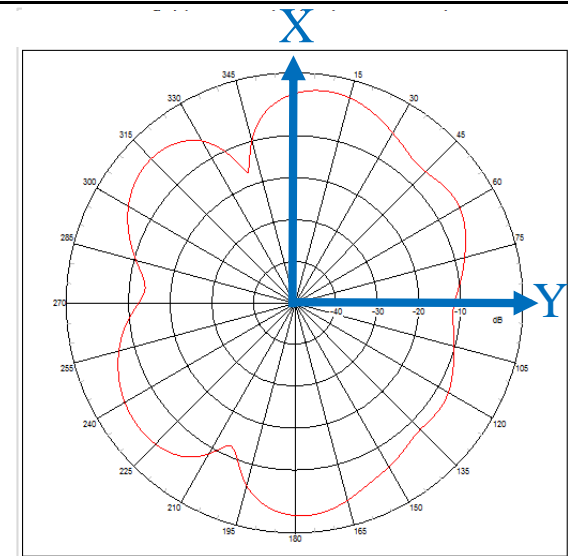
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

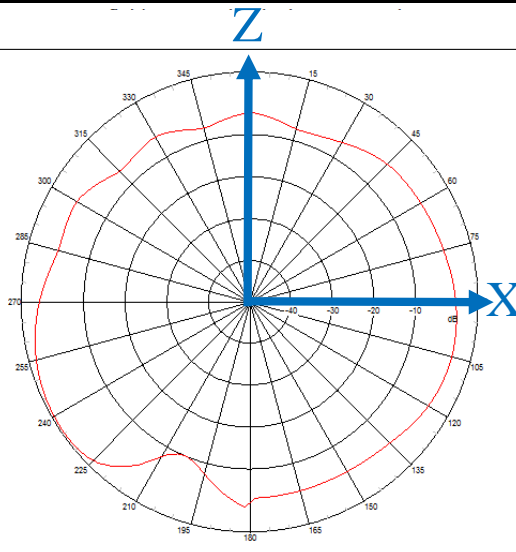
# Antenna Pattern

A2

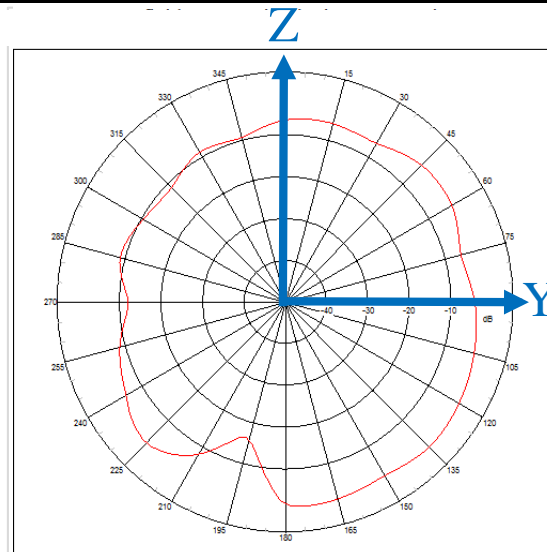
Frequency : 3300MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
3.3	4.2	-2.7	53

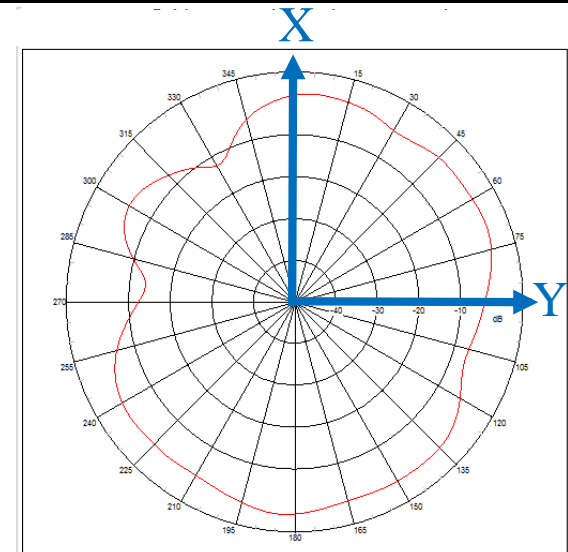
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

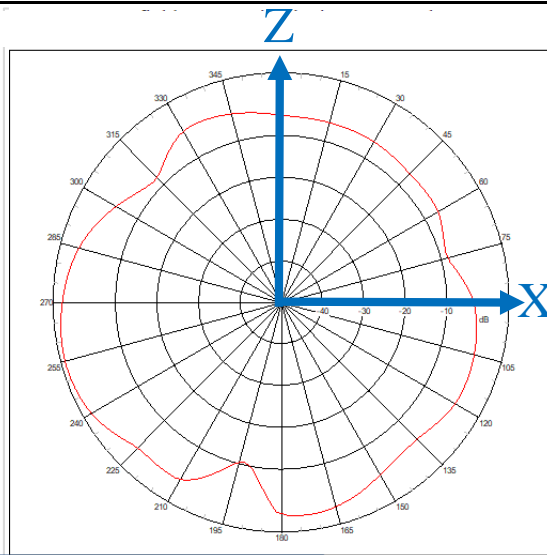
# Antenna Pattern

A2

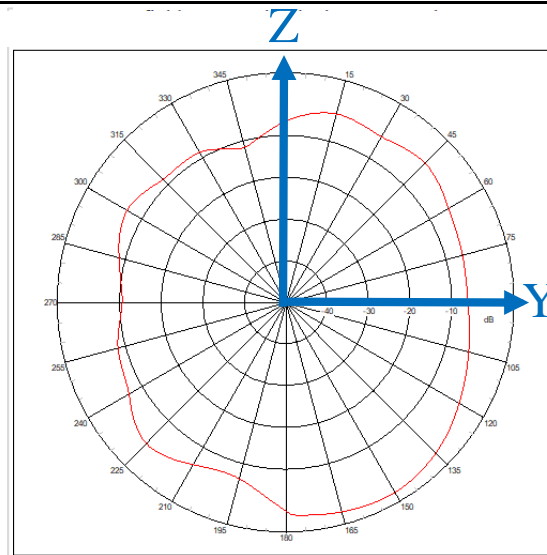
Frequency : 3800MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
3.8	4.7	-2.4	57

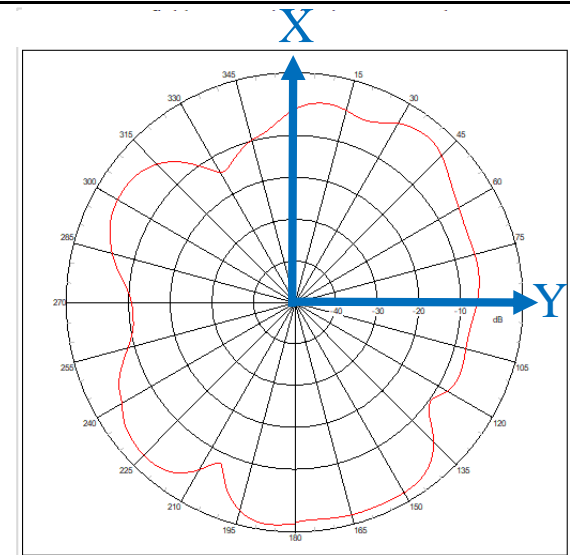
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB

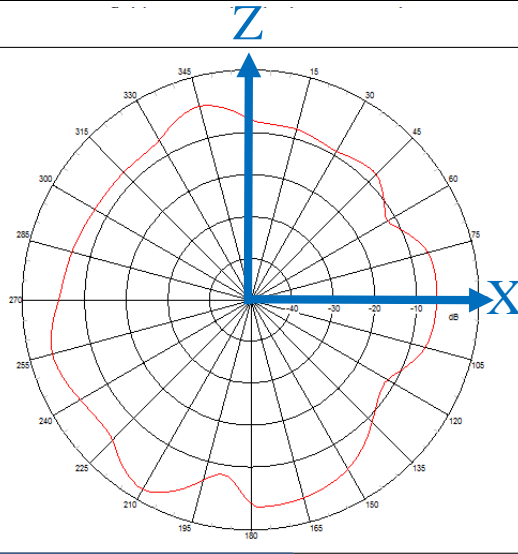
# Antenna Pattern

A2

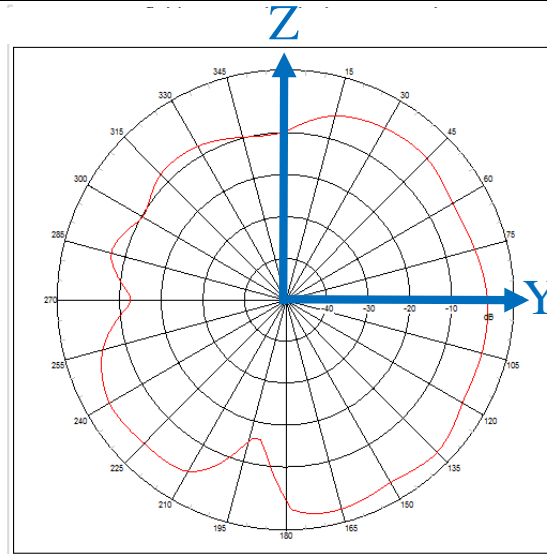
Frequency : 4200MHz

Freq(GHz)	Peak Gain(dBi)	3D-avg Gain(dBi)	Efficiency(%)
4.2	3.5	-2.4	58

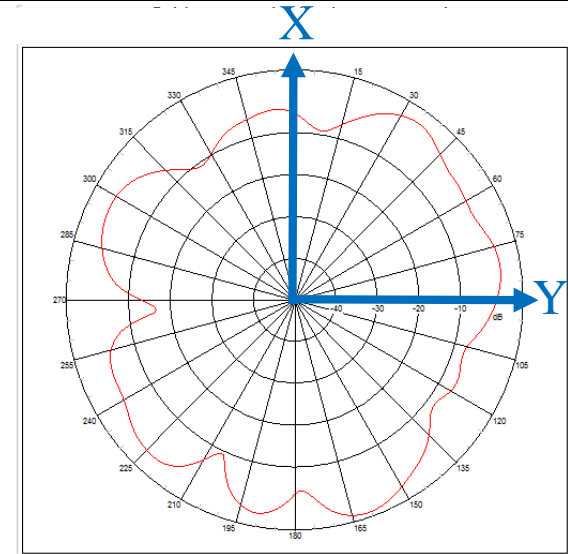
XZ-plane



YZ-plane



XY-plane



Far-field amplitude limits:

Max: 5dB

min: -50dB



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