

Extender WiFi6E Antenna System Specs

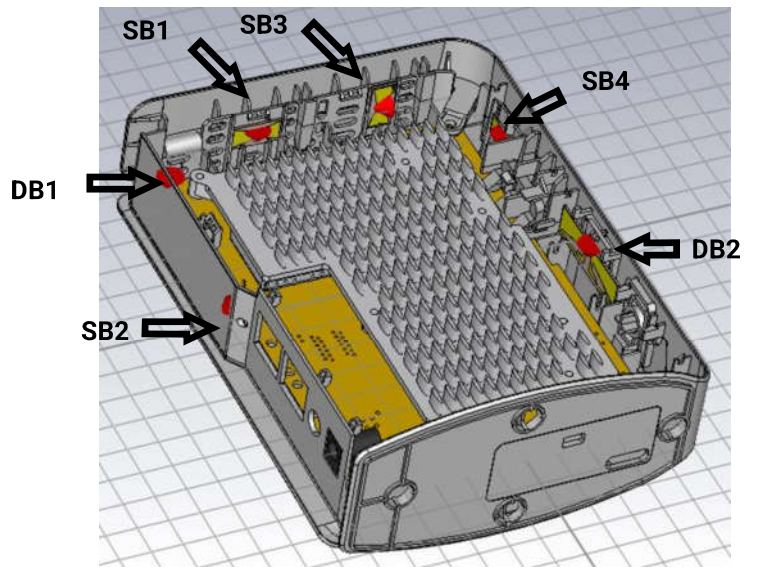
2022 August



Version control

Version	date	Description
1.0	2022 March 11th	Document creation
2.0	2022 May 23rd	Increase of 5mm pigtail length on SB1
3.0	2022 Jun 6th	New dual band PCB revision v4 (reinforce ground plane+ silkscreen) + adjustments
3.1	2022 Jun 9th	Updating the antennas product schematic
4.0	August 05th	Update Radiation Patterns, Efficiency and Gain

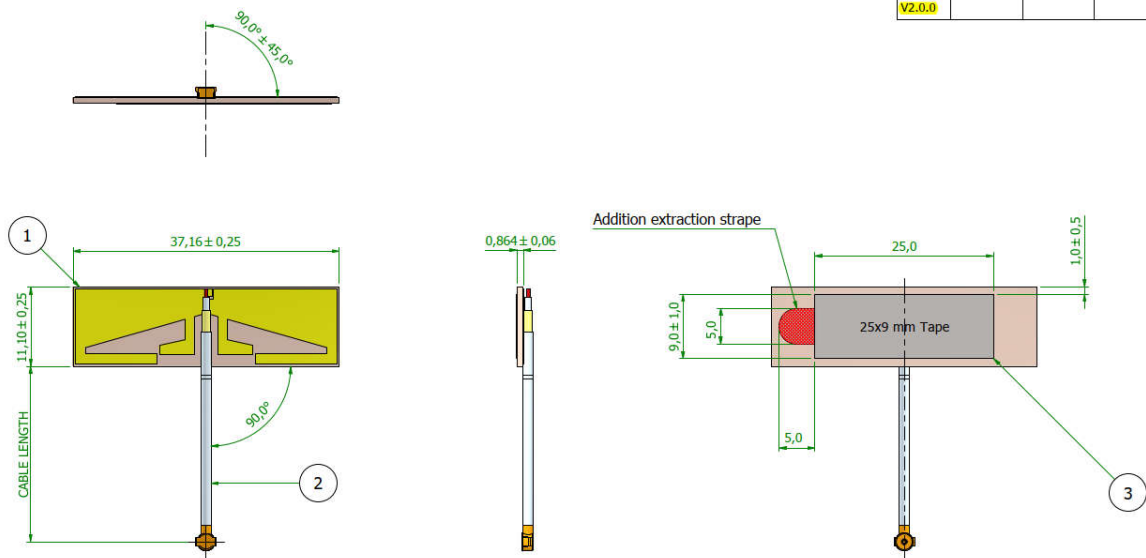
Extender WiFi6E - Antenna PN



Cod.	Desc.	PN	Qty
1700271403	Antenna WiFi 2.4/5GHz DB1 175mm White	W24DB50P175WE4-BWG	1
1700271404	Antenna WiFi 2.4/5GHz DB2 65mm Black	W24DB50P065BK4-BWG	1
1700271329	Antenna WiFi 6GHz SB1 65mm Black	W65SB00P065BK1-BWG	1
1700271400	Antenna WiFi 6GHz SB2 115mm Grey	W65SB00P115GY1-BWG	1
1700271401	Antenna WiFi 6GHz SB3 35mm Black	W65SB00P035BK1-BWG	1
1700271402	Antenna WiFi 6GHz SB4 85mm White	W65SB00P085WE1-BWG	1

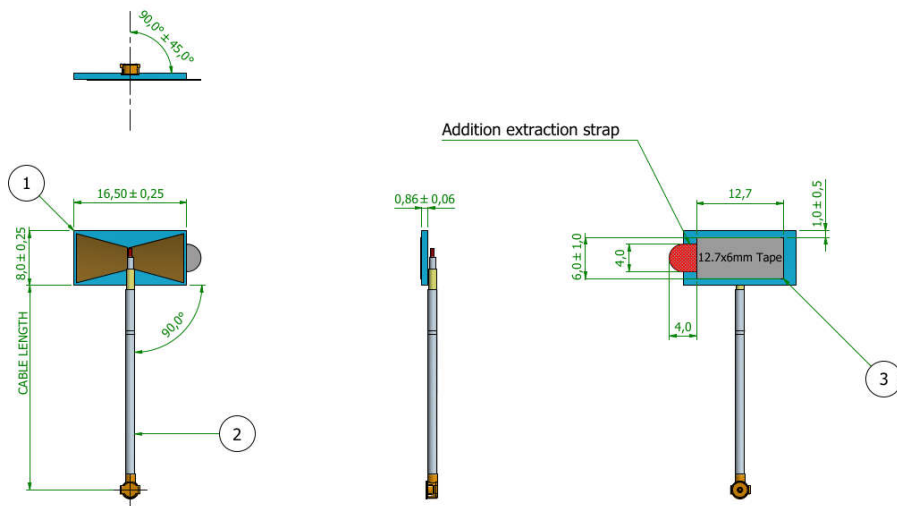
Antenna spec: W24DB50Pxxxxx4-BWG - dual band 2.4/5GHz

REV	DATE	BY	DESCRIPTION
V2.0.0			



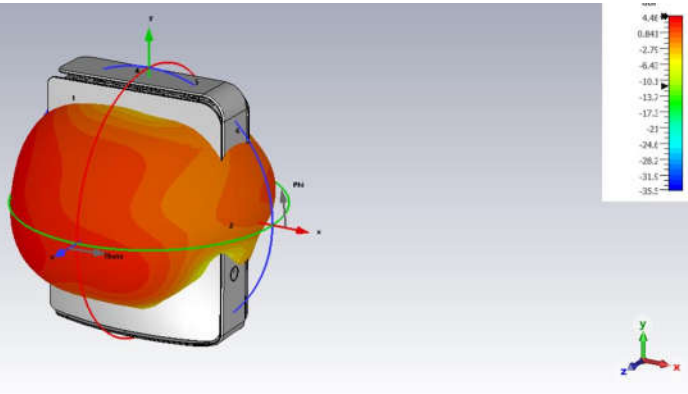
ITEM	PART NUMBER	DESCRIPTION	NOTES
1	W24DB50Pxxxxx4-BWG	Dual band 2.4Ghz + 5Ghz	Material FR4, Finish Solder & Mask
2	Pigtail coax cable w/ U.FL	Ø1.37mm O.D cable with U.FL connector	Observe length and color (Impedance: 50ohms)
3	1/2-60-9495LE	Double Coated Tape Clear 9495LE 0,18mm Thick	One side ddhered

Antenna spec: W65SB00Pxxxx1 – Single band 6GHz



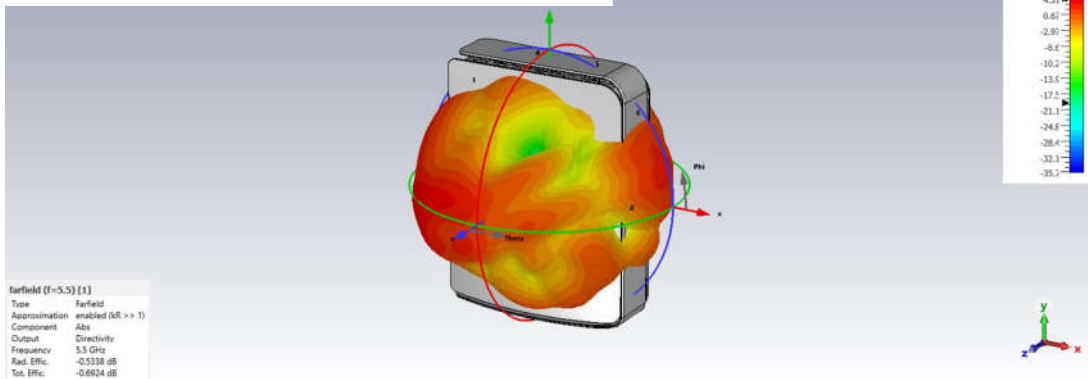
ITEM	PART NUMBER	DESCRIPTION	NOTES
1	W65SB00PxxxxR2	Single band 6/7Ghz	Material FR4, Finish Solder & Mask
2	Pigtail coax cable w/ U.FL	$\varnothing 1.37$ mm O.D cable with U.FL connector	Observe length and color (Impedance: 50ohms)
3	1/2-60-9495LE	Double Coated Tape Clear 9495LE 0,18mm Thick	One side adhered

3D system coverage (DB1)



DB1@2.44GHz

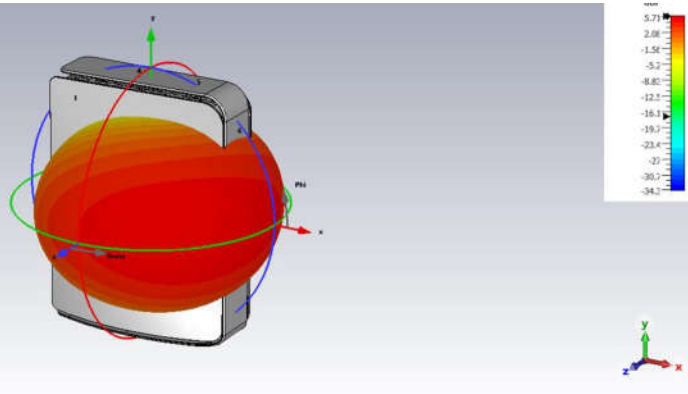
DB1@5.50GHz



farfield (f=5.5) [1]	
Type	Farfield
Approximation	enabled (kR >> 1)
Component	Abs
Output	Directivity
Frequency	5.5 GHz
Rad. Effic.	-0.5338 dB
Tot. Effic.	-0.6924 dB



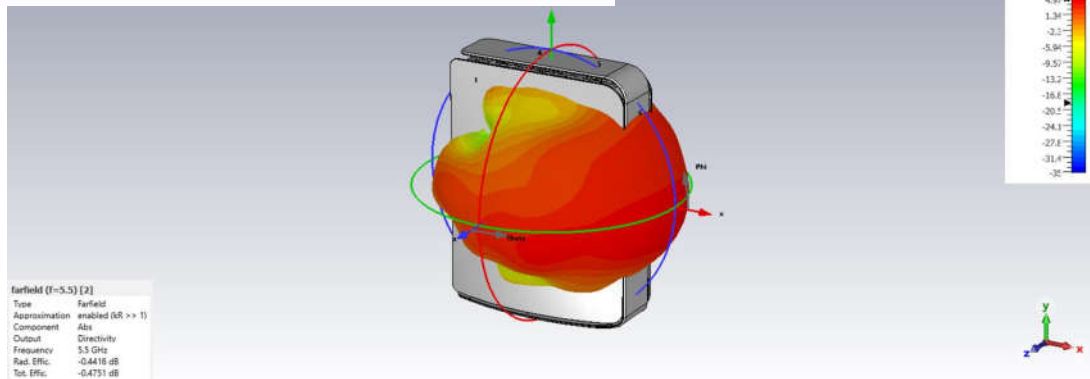
3D system coverage (DB2)



DB2@2.44GHz

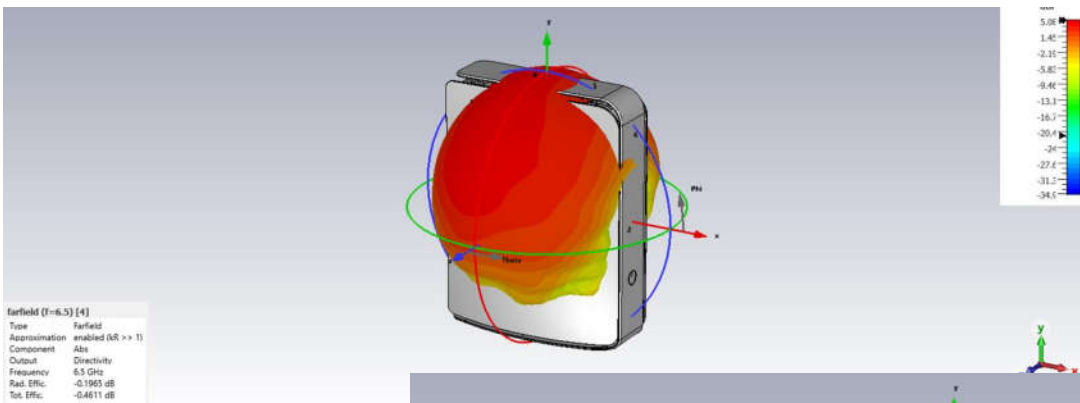
farfield (f=2.44) [2]
Type Farfield
Approximation enabled (kR >> 1)
Component Abs
Output Directivity
Frequency 2.44 GHz
Rad. Effic. -0.3318 dB
Tot. Effic. -1.665 dB

DB2@5.50GHz



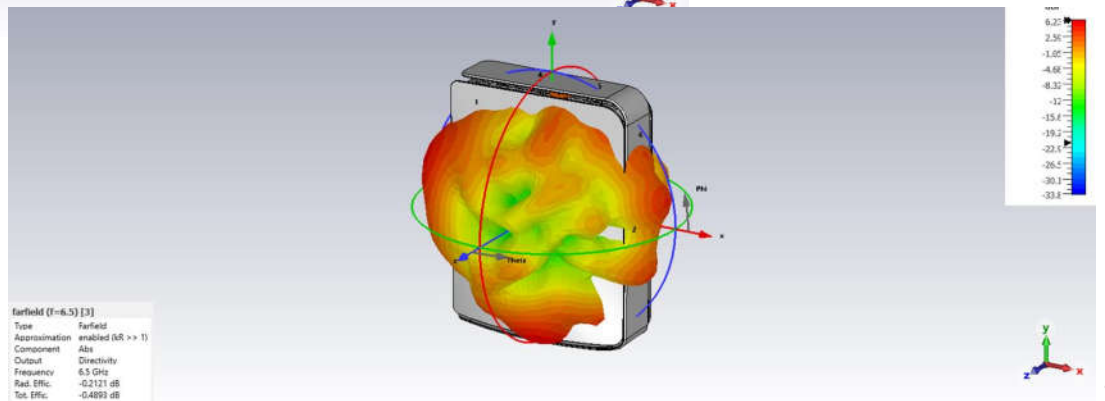
farfield (f=5.5) [2]
Type Farfield
Approximation enabled (kR >> 1)
Component Abs
Output Directivity
Frequency 5.5 GHz
Rad. Effic. -0.4416 dB
Tot. Effic. -0.4751 dB

3D system coverage (SB1, SB2)

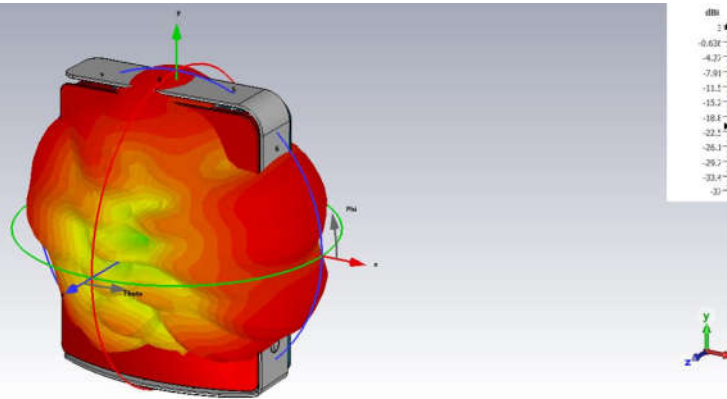


SB1@6.5GHz

SB2@6.5GHz



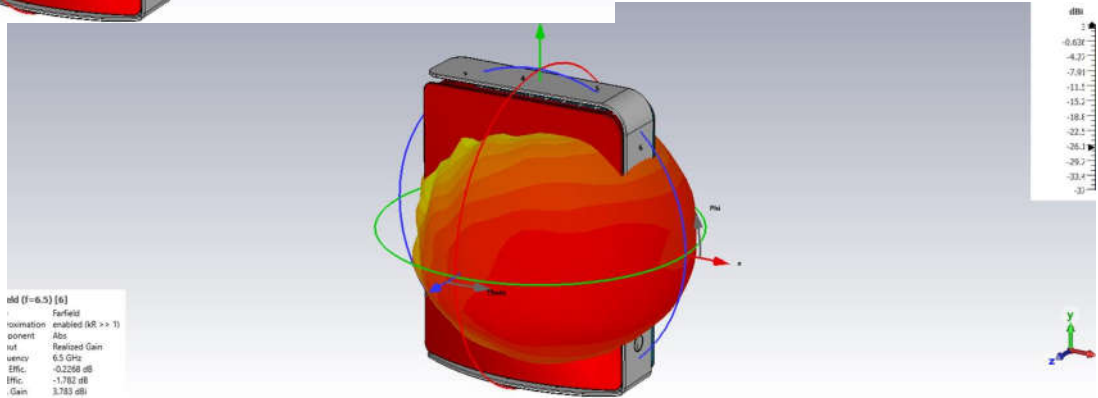
3D system coverage (SB3,SB4)



SB3@6.5GHz

sld (f=6.5) [5]
 Farfield
 simulation enabled (AR >> 1)
 component Abs
 port Realized Gain
 freq 6.5 GHz
 S11c -0.2513 dB
 S11f -0.5492 dB
 Gain 5.113 dBi

SB4@6.5GHz

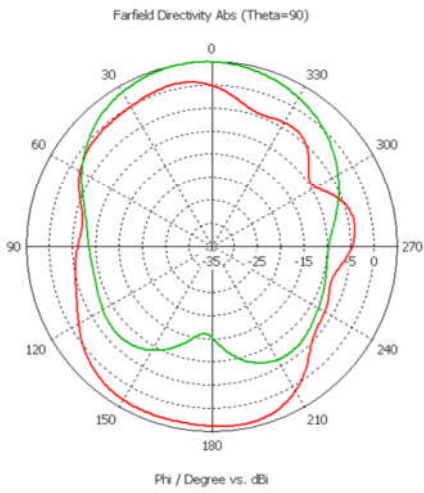


sld (f=6.5) [6]
 Farfield
 simulation enabled (AR >> 1)
 component Abs
 port Realized Gain
 freq 6.5 GHz
 S11c -0.2268 dB
 S11f -1.782 dB
 Gain 3.783 dBi

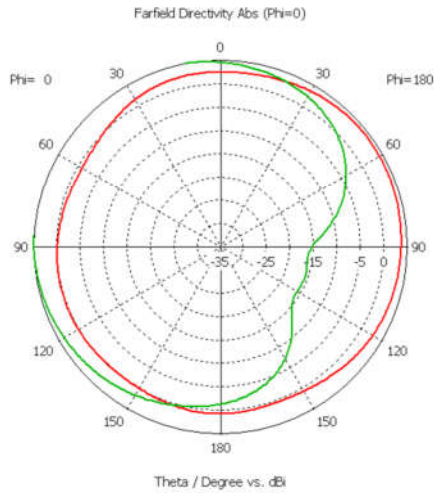


1D radiation pattern @2.440GHz

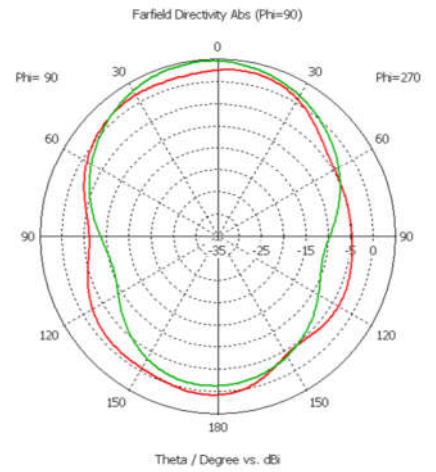
— DB1
— DB2



XY plane



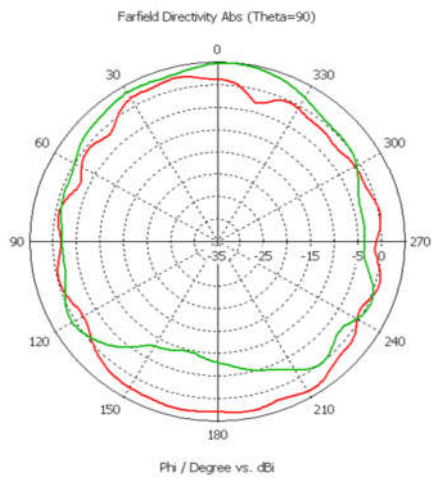
XZ plane



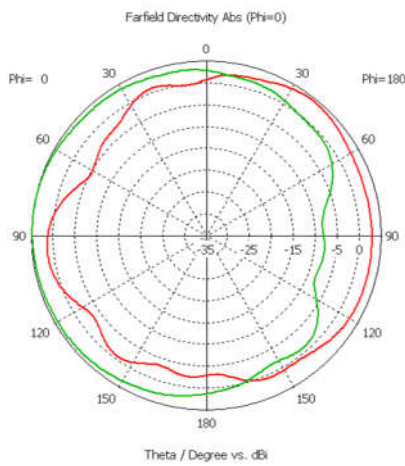
YZ plane

1D radiation pattern @5.500GHz

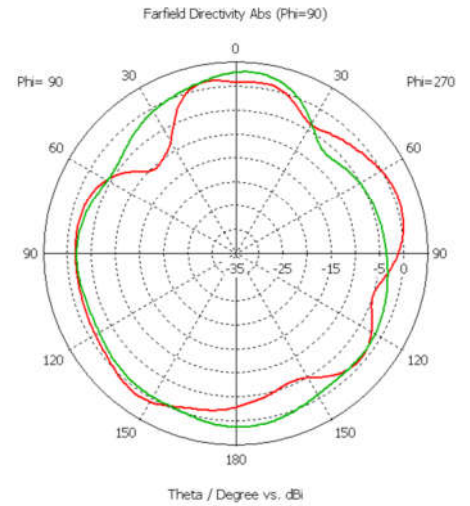
— DB1
— DB2



XY plane



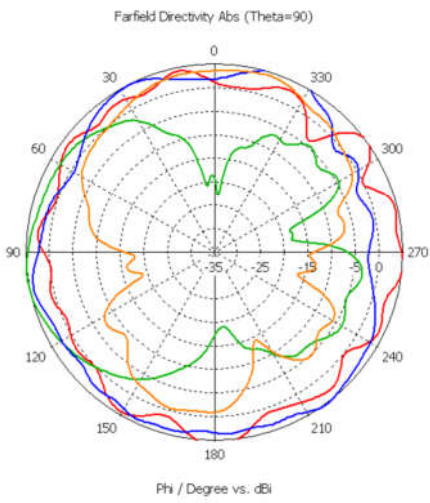
XZ plane



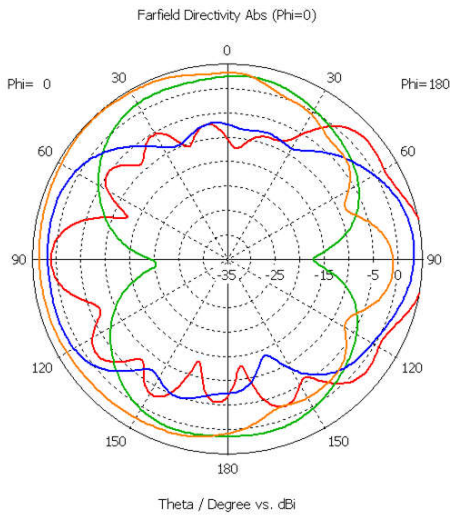
YZ plane

1D radiation pattern @6.500GHz

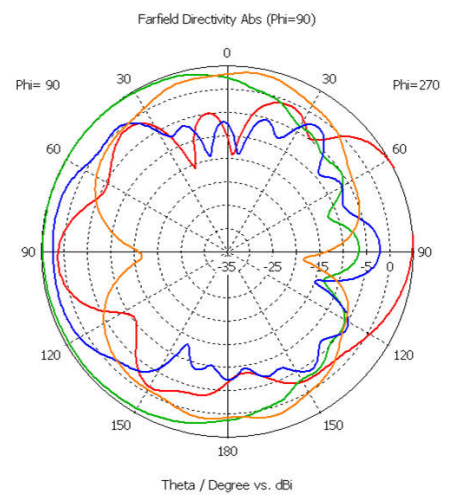
- SB1
- SB2
- SB3
- SB4



XY plane



XZ plane



YZ plane

Antenna Total Efficiency and Gain

Antenna	Efficiency % @2450MHz	Efficiency % @5500MHz	Efficiency % @6500MHz	Gain (dBi) @2450MHz	Gain (dBi) @5500MHz	Gain (dBi) @6500MHz
DB1	72.4	85.3	-	3.01	3.61	-
DB2	70.1	89.6	-	4.03	4.49	-
SB2	-	-	89.3	-	-	5.73
SB1	-	-	89.9	-	-	4.62
SB3	-	-	86.3	-	-	6.16
SB4	-	-	81.6	-	-	4.54

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2022 August

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