



Alpha 11

Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

Key Features

- Supports 5G NR / 4G LTE / 3G UMTS / 2G GSM
- Supports LTE Cat M, LTE Cat NB and NR Cat NB Bands
- Supports Dual-band Wi-Fi 2.4 GHz and 5 GHz
- Supports Bluetooth and BLE, Zigbee and ISM 2.4 GHz, ISM 5.8 GHz and IEEE 802.15.4 Bands
- Adhesive Mount
- Slim discreet design



General Description

The Alpha 11 is an efficiently tuned PCB antenna that is suitable for a wide variety of RF and IoT modules, operating on 2G, 3G, 4G & 5G frequencies. The antenna also covers both Wi-Fi frequency bands.

The Alpha 11 is a competent performer which will suit cost conscious volume applications where a quality product and good performance is required.

Alternative connectors or cable lengths can be specified for volume orders.

Additional Considerations

- Mounts discreetly in installation, good for covert use
- Intended for internal equipment use

A Adhesive	5G New Radio	4G LTE	2G GSM	2G GSM
IEEE 802.15.4	BLE Bluetooth	AoA Bluetooth	AoD Bluetooth	ZB Zigbee
WLAN 5800	WLAN 5800	ISM 2450	ISM 5.8G	LTE Cat M
LTE NB IoT	NR NB IoT	WiFi 4 802.11n	WiFi 5 802.11ac	WiFi 6 802.11ax



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Electrical Specifications

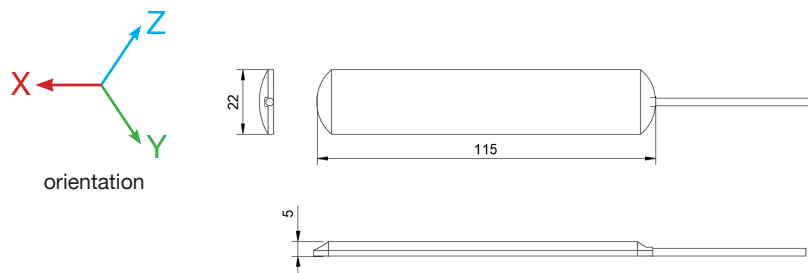
Impedance:	50 Ohm
Polarization:	Vertical
Max Input Power:	60 W
Ground plane independent:	Yes

Environmental Specifications

Operating Temperature range:	-40 to +85 °C
Storage Temperature range:	-45 to +100 °C

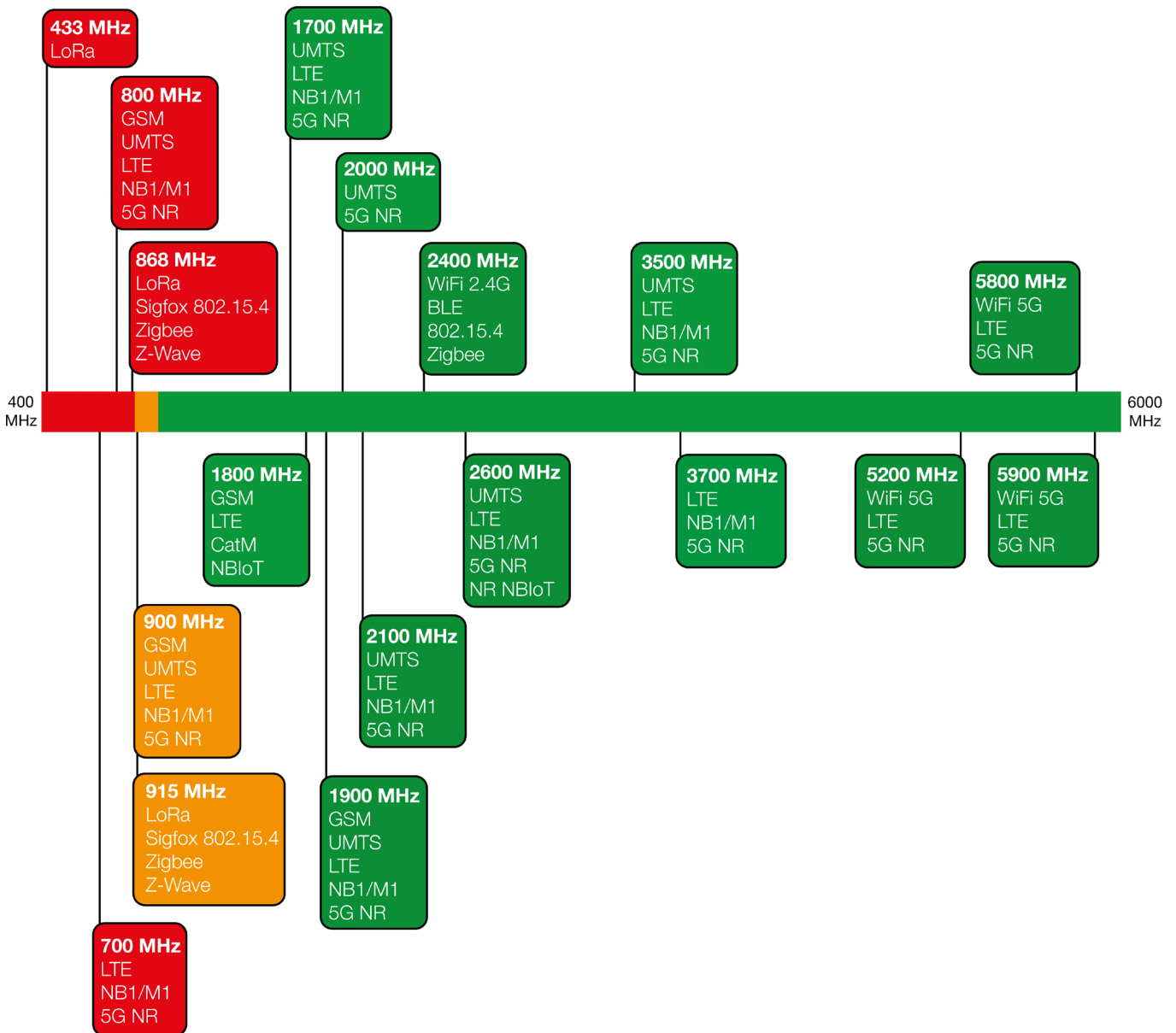
Mechanical Specifications

Dimensions:	115 x 22 x 4 mm
Weight:	48 g
Cable:	RG174
Connector:	SMA Male
Mounting method:	Adhesive Pad
Housing materials:	ABS





Spectrum Coverage



● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



Usable Cellular Frequency Support (410 MHz – 1900 MHz)

	410	450	600	700	800	850	900	1500	1600	1700	1800	1900
GSM Bands:											●	●
UMTS Bands:								●		●	●	●
LTE Bands:								●	●	●	●	●
LTE Cat M Bands:								●	●	●	●	●
LTE Cat NB Bands:								●	●	●	●	●
5G NR Bands:								●	●	●	●	●
NR Cat NB Bands:										●	●	●

Usable Cellular Frequency Support (2000 MHz – 5900 MHz)

	2000	2100	2300	2400	2500	2600	3300	3500	3700	4700	5200	5900
GSM Bands:												
UMTS Bands:		●				●		●				
LTE Bands:	●	●	●	●	●	●	●	●	●		●	●
LTE Cat M Bands:		●	●		●	●		●	●			
LTE Cat NB Bands:		●			●	●		●	●			
5G NR Bands:	●	●	●	●	●	●		●	●	●	●	●
NR Cat NB Bands:		●			●	●						

Usable ISM Frequency Support (433 MHz - 5800 MHz)

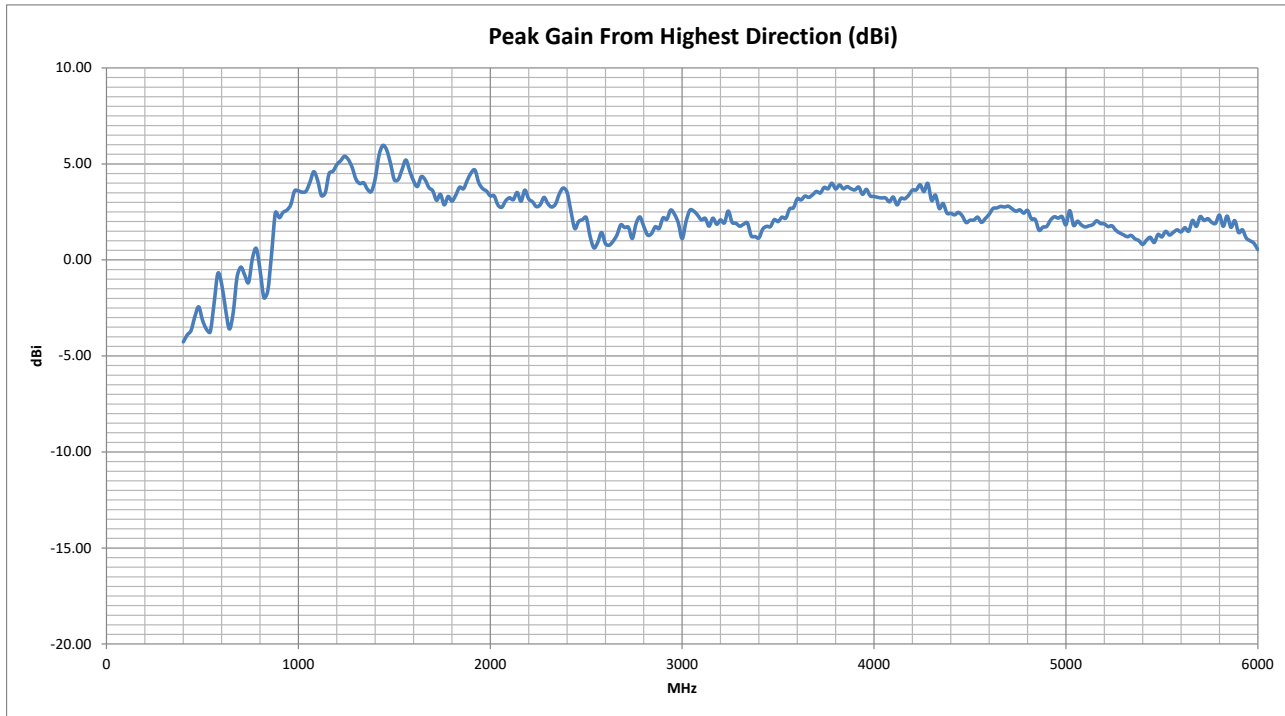
	433	868	915	2450	5800
Bluetooth				●	
IEEE 802.15.4				●	
LoRa					
Sigfox					
WiFi 2.4G				●	
WiFi 5G					●
Zigbee				●	
Z-Wave					



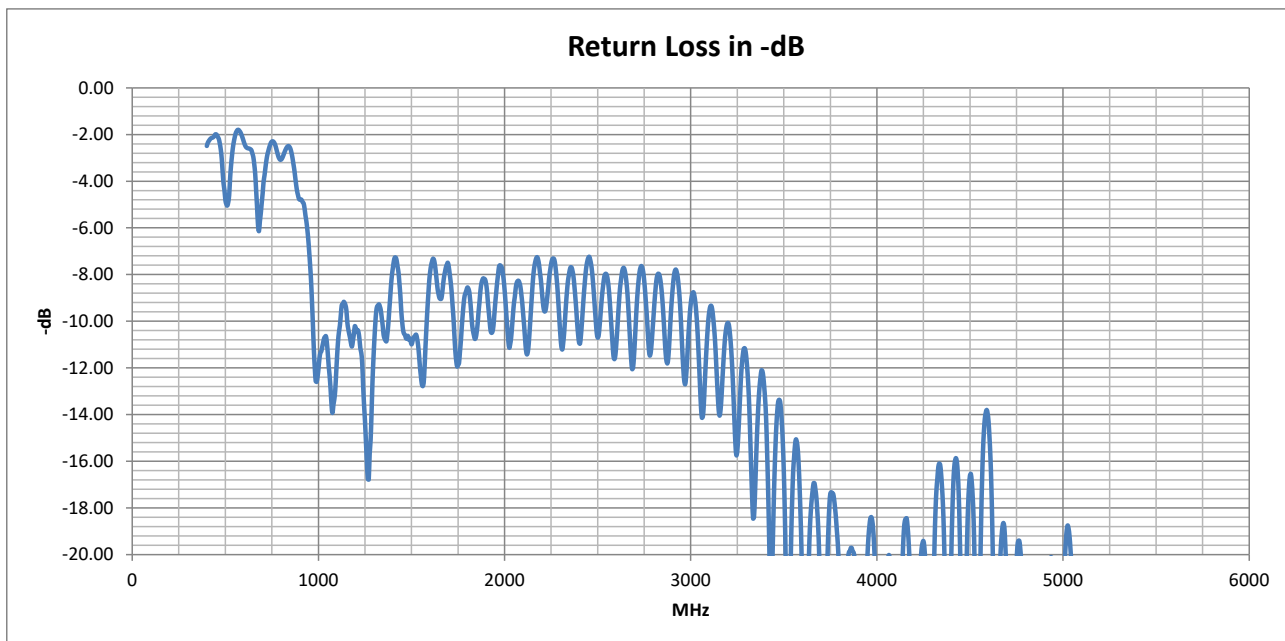
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Peak Gain vs. Frequency



Return Loss

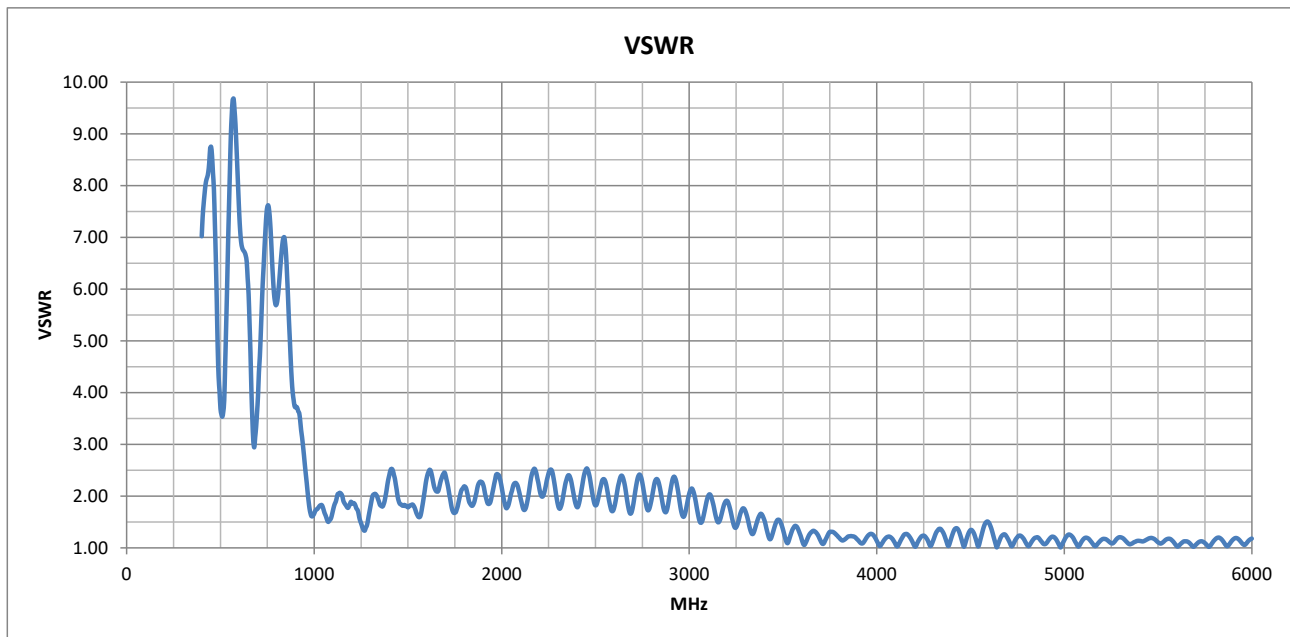




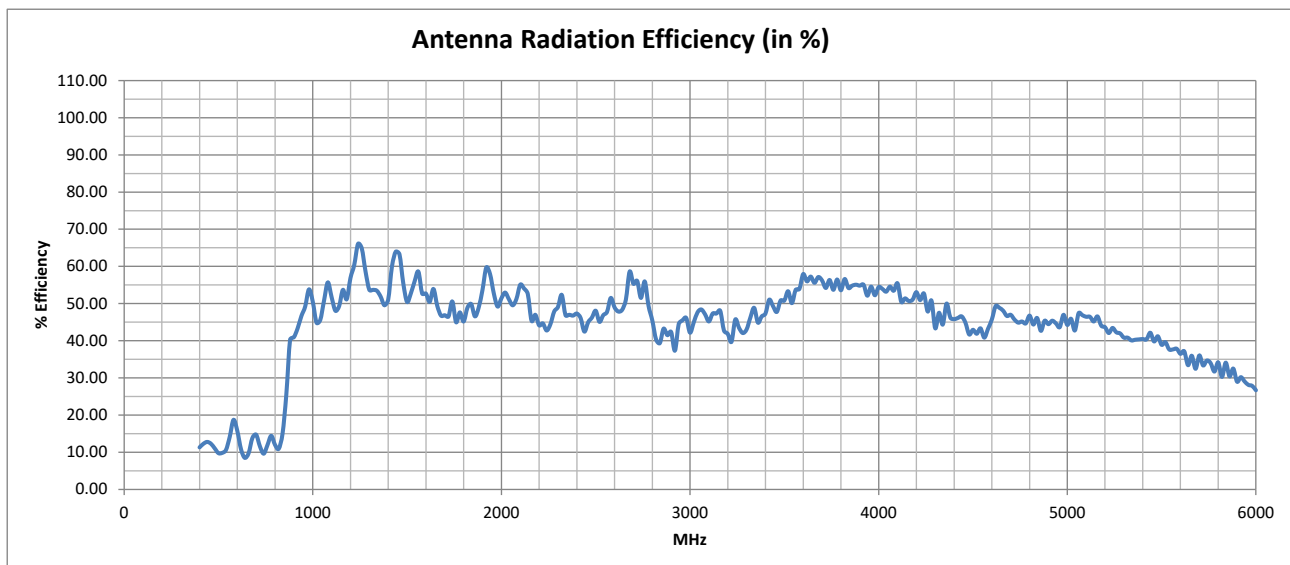
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VSWR



Radiation Efficiency





Cellular Standards Band Support

GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
	1	1	1	1	n1	n1	1920 - 1980 MHz	2110 - 2170 MHz	55.04	50.80	2.43	2.52	●
PCS-1900	2	2	2	2	n2	n2	1850 - 1910 MHz	1930 - 1990 MHz	50.14	53.46	2.28	2.43	●
DCS-1800	3	3	3	3	n3	n3	1710 - 1785 MHz	1805 - 1880 MHz	47.42	48.26	2.25	2.26	●
	4	4	4	4			1710 - 1755 MHz	2110 - 2155 MHz	48.11	52.41	2.25	2.33	●
GSM-850	5	5	5	5	n5	n5	824 - 849 MHz	869 - 894 MHz	14.81	38.61	7.00	5.10	●
	6						830 - 840 MHz	875 - 885 MHz	13.98	39.38	7.00	4.60	●
	7	7	7	7	n7	n7	2500 - 2570 MHz	2620 - 2690 MHz	46.93	51.86	2.33	2.40	●
E-GSM-900	8	8	8	8	n8	n8	880 - 915 MHz	925 - 960 MHz	41.13	46.86	4.25	3.47	●
	9	9					1749.9 - 1784.9 MHz	1844.9 - 1879.9 MHz	46.48	47.79	2.11	2.26	●
	10	10					1710 - 1770 MHz	2110 - 2170 MHz	47.50	50.80	2.25	2.52	●
	11	11	11	11			1427.9 - 1447.9 MHz	1475.9 - 1495.9 MHz	63.18	54.05	2.37	1.83	●
	12	12	12	12	n12	n12	699 - 716 MHz	729 - 746 MHz	13.54	10.07	5.24	7.48	●
	13	13	13	13	n13	n13	777 - 787 MHz	746 - 756 MHz	14.06	10.87	6.43	7.62	●
	14	14	14	14	n14		788 - 798 MHz	758 - 768 MHz	12.84	12.29	5.84	7.55	●
		17		17			704 - 716 MHz	734 - 746 MHz	13.16	9.92	5.24	7.48	●
		18	18	18	n18	n18	815 - 830 MHz	860 - 875 MHz	11.66	31.06	6.87	5.86	●
	19	19	19	19			830 - 845 MHz	875 - 890 MHz	14.76	39.76	7.00	4.60	●
	20	20	20	20	n20	n20	832 - 862 MHz	791 - 821 MHz	19.05	11.78	7.00	6.51	●
	21	21	21	21			1447.9 - 1462.9 MHz	1495.9 - 1510.9 MHz	63.31	51.06	1.95	1.82	●
	22	22					3410 - 3490 MHz	3510 - 3590 MHz	49.62	52.82	1.55	1.43	●
		24	24	24	n24		1626.5 - 1660.5 MHz	1525 - 1559 MHz	52.08	56.14	2.42	1.84	●
	25	25	25	25	n25	n25	1850 - 1915 MHz	1930 - 1995 MHz	50.70	53.24	2.28	2.43	●
	26	26	26	26	n26		814 - 849 MHz	859 - 894 MHz	13.78	35.71	7.00	5.95	●
		27	27				807 - 824 MHz	852 - 869 MHz	11.30	26.29	6.64	6.50	●
		28	28	28	n28	n28	703 - 748 MHz	758 - 803 MHz	11.38	13.04	7.53	7.55	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



Cellular Standards Band Support

GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
		28A					703 - 733 MHz	758 - 788 MHz	12.06	13.28	6.66	7.55	●
		29			n29		N/A	717 - 728 MHz	N/A	11.36	N/A	6.30	●
		30			n30		2305 - 2315 MHz	2350 - 2360 MHz	50.73	46.96	1.80	2.41	●
		31	31	31			452.5 - 457.5 MHz	462.5 - 467.5 MHz	12.42	11.99	8.66	8.08	●
	32	32					N/A	1452 - 1496 MHz	N/A	57.94	N/A	1.89	●
		33					1900 - 1920 MHz	1900 - 1920 MHz	56.70	56.70	2.23	2.23	●
		34			n34		2010 - 2025 MHz	2010 - 2025 MHz	52.63	52.63	1.96	1.96	●
		35					1850 - 1910 MHz	1850 - 1910 MHz	50.14	50.14	2.28	2.28	●
		36					1930 - 1990 MHz	1930 - 1990 MHz	53.46	53.46	2.43	2.43	●
		37					1910 - 1930 MHz	1910 - 1930 MHz	58.73	58.73	2.07	2.07	●
		38			n38		2570 - 2620 MHz	2570 - 2620 MHz	49.58	49.58	2.19	2.19	●
		39	39		n39		1880 - 1920 MHz	1880 - 1920 MHz	54.02	54.02	2.28	2.28	●
		40	40		n40		2300 - 2400 MHz	2300 - 2400 MHz	48.24	48.24	2.41	2.41	●
		41	41	41	n41	n41	2496 - 2690 MHz	2496 - 2690 MHz	49.41	49.41	2.40	2.40	●
		42	42	42			3400 - 3600 MHz	3400 - 3600 MHz	51.35	51.35	1.55	1.55	●
		43	43	43			3600 - 3800 MHz	3600 - 3800 MHz	55.87	55.87	1.33	1.33	●
		44					703 - 803 MHz	703 - 803 MHz	12.10	12.10	7.62	7.62	●
		45					1447 - 1467 MHz	1447 - 1467 MHz	62.92	62.92	1.96	1.96	●
		46			n46		5150 - 5925 MHz	5150 - 5925 MHz	37.68	37.68	1.21	1.21	●
		47			n47		5855 - 5925 MHz	5855 - 5925 MHz	30.58	30.58	1.19	1.19	●
		48			n48		3550 - 3700 MHz	3550 - 3700 MHz	55.90	55.90	1.43	1.43	●
		49					3550 - 3700 MHz	3550 - 3700 MHz	55.90	55.90	1.43	1.43	●
		50			n50		1432 - 1517 MHz	1432 - 1517 MHz	57.62	57.62	2.30	2.30	●
		51			n51		1427 - 1432 MHz	1427 - 1432 MHz	61.88	61.88	2.38	2.38	●
		52					3300 - 3400 MHz	3300 - 3400 MHz	46.34	46.34	1.71	1.71	●

● Suitable band

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GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
		53			n53		2483.5 - 2495 MHz	2483.5 - 2495 MHz	47.09	47.09	2.05	2.05	●
		65		65	n65	n65	1920 - 2010 MHz	2110 - 2200 MHz	53.63	49.17	2.43	2.53	●
		66	66	66	n66	n66	1710 - 1780 MHz	2110 - 2200 MHz	47.42	49.17	2.25	2.53	●
		67			n67		N/A	738 - 758 MHz	N/A	10.54	N/A	7.62	●
		68					698 - 728 MHz	753 - 783 MHz	12.73	12.89	6.30	7.62	●
		69					N/A	2570 - 2620 MHz	N/A	49.58	N/A	2.19	●
		70		70	n70	n70	1695 - 1710 MHz	1995 - 2020 MHz	46.82	51.97	2.46	2.26	●
		71	71	71	n71		663 - 698 MHz	617 - 652 MHz	13.17	9.49	4.33	6.79	●
		72	72	72			451 - 456 MHz	461 - 466 MHz	12.45	12.09	8.72	8.18	●
		73	73	73			450 - 455 MHz	460 - 465 MHz	12.48	12.15	8.75	8.24	●
		74	74	74	n74		1427 - 1470 MHz	1475 - 1518 MHz	62.78	52.75	2.38	1.83	●
		75			n75		N/A	1432 - 1517 MHz	N/A	57.62	N/A	2.30	●
		76			n76		N/A	1427 - 1432 MHz	N/A	61.88	N/A	2.38	●
					n77		3300 - 4200 MHz	3300 - 4200 MHz	52.79	52.79	1.71	1.71	●
					n78		3300 - 3800 MHz	3300 - 3800 MHz	52.16	52.16	1.71	1.71	●
					n79		4400 - 5000 MHz	4400 - 5000 MHz	45.10	45.10	1.51	1.51	●
					n80		1710 - 1785 MHz	N/A	47.42	N/A	2.25	N/A	●
					n81		880 - 915 MHz	N/A	41.13	N/A	4.25	N/A	●
					n82		832 - 862 MHz	N/A	19.05	N/A	7.00	N/A	●
					n83		703 - 748 MHz	N/A	11.38	N/A	7.53	N/A	●
					n84		1920 - 1980 MHz	N/A	55.04	N/A	2.43	N/A	●
		85	85	85	n85		698 - 716 MHz	728 - 746 MHz	13.60	10.11	5.24	7.48	●
					n86		1710 - 1780 MHz	N/A	47.42	N/A	2.25	N/A	●
		87	87	87			410 - 415 MHz	420 - 425 MHz	11.89	12.31	7.84	8.11	●
		88	88	88			412 - 417 MHz	422 - 427 MHz	11.99	12.36	7.91	8.14	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



Cellular Standards Band Support

GSM (2G) Band	UMTS (3G) Band	E-UTRA (4G) Band	Cat M E-UTRA Band	Cat NB E-UTRA Band	NR (5G) Band	Cat NB NR (5G) Band	Uplink	Downlink	Average Upload Efficiency (%)	Average Download Efficiency (%)	Maximum Upload VSWR	Maximum Download VSWR	Use Indicator
					n89		824 - 849 MHz	N/A	14.81	N/A	7.00	N/A	●
					n90	n90	2496 - 2690 MHz	2496 - 2690 MHz	49.41	49.41	2.40	2.40	●
					n91		832 - 862 MHz	1427 - 1432 MHz	19.05	61.88	7.00	2.38	●
					n92		832 - 862 MHz	1432 - 1517 MHz	19.05	57.62	7.00	2.30	●
					n93		880 - 915 MHz	1427 - 1432 MHz	41.13	61.88	4.25	2.38	●
					n94		880 - 915 MHz	1432 - 1517 MHz	41.13	57.62	4.25	2.30	●
					n95		2010 - 2025 MHz	N/A	52.63	N/A	1.96	N/A	●
					n97		2300 - 2400 MHz	N/A	48.24	N/A	2.41	N/A	●
					n98		1880 - 1920 MHz	N/A	54.02	N/A	2.28	N/A	●
					n99		1626.5 - 1660.5 MHz	N/A	52.08	N/A	2.42	N/A	●
					n101		1900 - 1910 MHz	1900 - 1910 MHz	55.20	55.20	2.23	2.23	●
				103			787 - 788 MHz	757 - 758 MHz	13.51	11.62	5.87	7.57	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable

NOTE: For each frequency band, Siretta provides a traffic light indication to show the suitability of the antenna for use at that frequency band. Determination of exactly what makes an antenna good or bad at any frequency is subjective.

The view presented is that of Siretta's engineering team having taken into account the efficiency and VSWR measurements. The end user is advised to use their own criteria and/or testing to confirm suitability.



ISM Standards Frequency Support

Application	Frequency Range	Efficiency (%)	Maximum VSWR	Peak Gain from highest direction (dBi)	Use Indicator
ISM 433 MHz	433.05 - 434.79 MHz	12.61	8.26	-3.7398	●
ISM 868 MHz	863 - 870 MHz	30.32	5.59	1.395	●
ISM 915 MHz	902 - 928 MHz	42.80	3.73	2.528	●
ISM 2.4 GHz	2400 - 2500 MHz	45.50	2.54	3.53	●
Wi-Fi 2.4G	2401 - 2483 MHz	45.11	2.54	3.481	●
Wi-Fi 2.4G (USA)	2401 - 2473 MHz	44.97	2.54	3.481	●
Wi-Fi 2.4G (Japan)	2401 - 2495 MHz	45.36	2.54	3.481	●
Wi-Fi 5G (all channels)	5150 - 5990 MHz	36.97	1.21	2.34	●
Wi-Fi 5G (Ch 32-48)	5150 - 5250 MHz	43.89	1.18	2.04	●
Wi-Fi 5G (Ch 32-64)	5150 - 5330 MHz	42.83	1.21	2.04	●
Wi-Fi 5G (Ch 32-161)	5150 - 5815 MHz	38.76	1.21	2.34	●
Wi-Fi 5G (Ch 32-173)	5150 - 5875 MHz	38.19	1.21	2.34	●
ISM 5.8 GHz	5725 - 5875 MHz	32.78	1.20	2.34	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable

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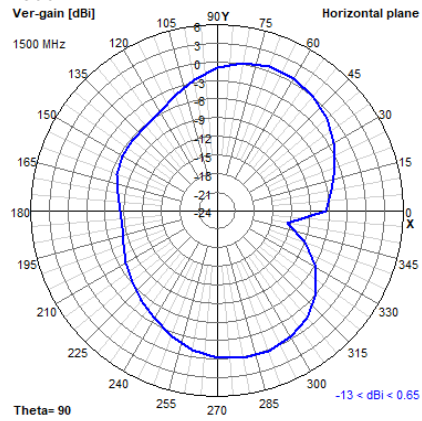


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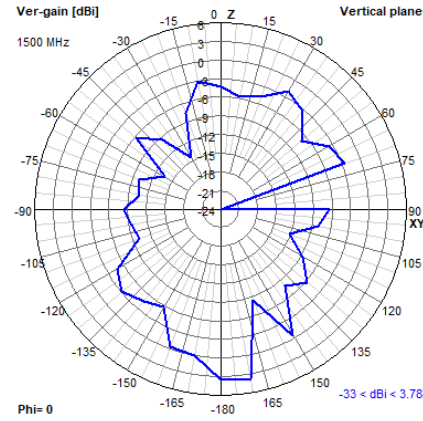
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2D Radiation Plots

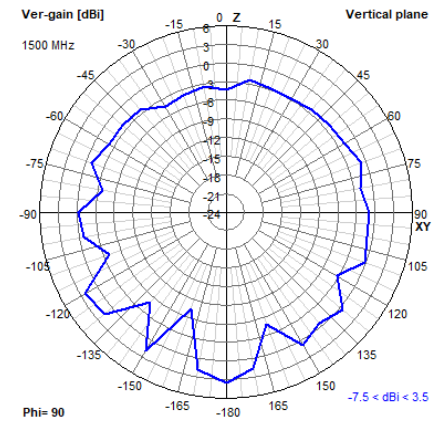
1500 MHz XY



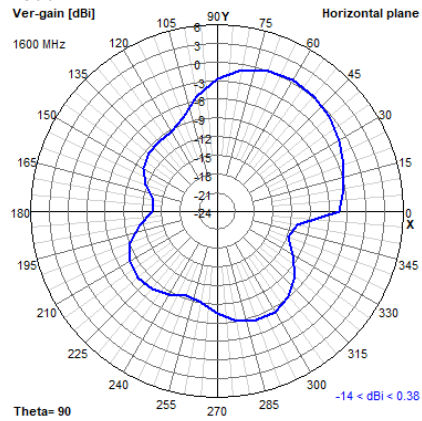
XZ



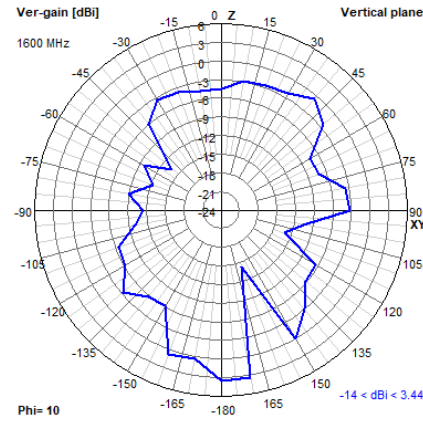
YZ



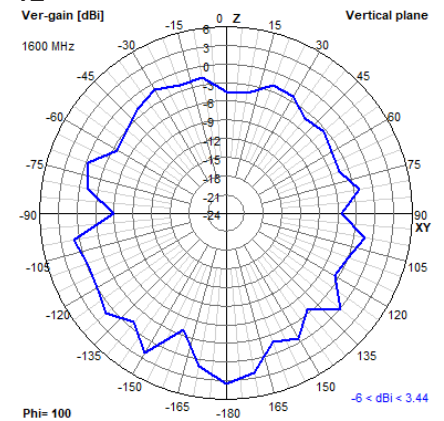
1600 MHz XY



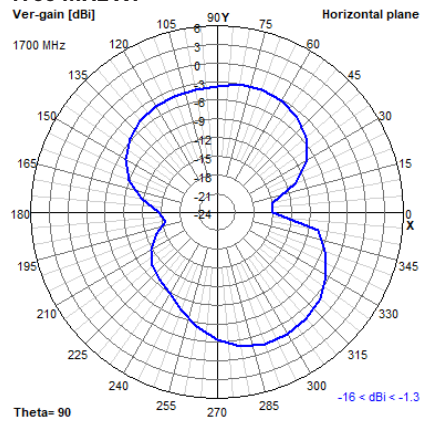
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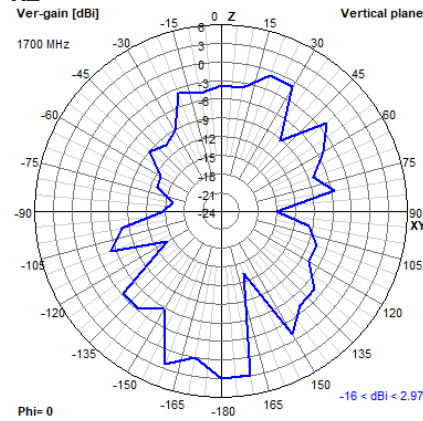
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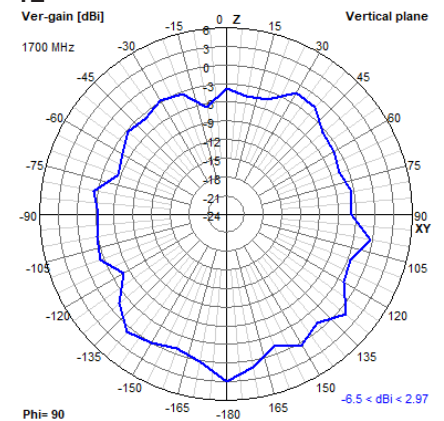
1700 MHz XY



XZ



YZ



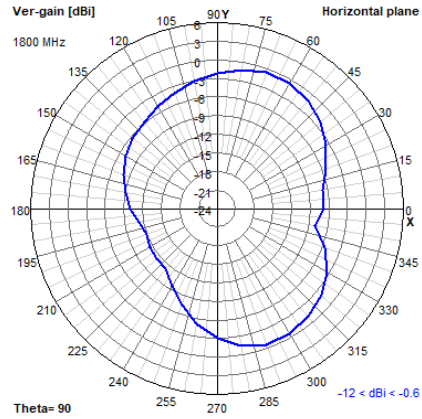


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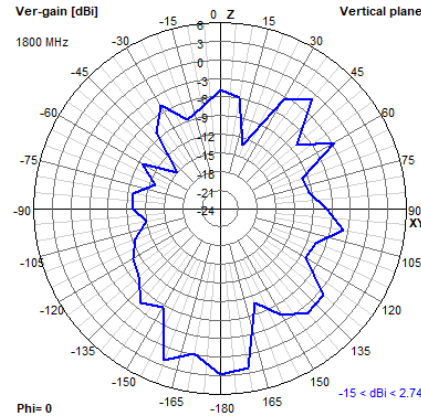
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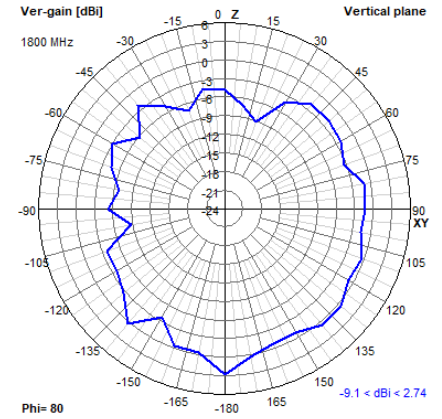
1800 MHz XY



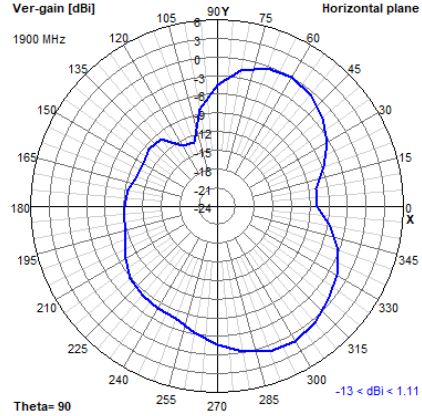
XZ



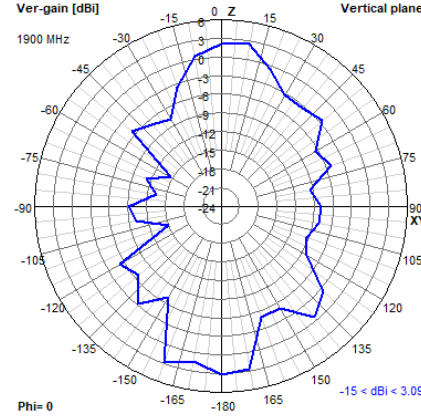
YZ



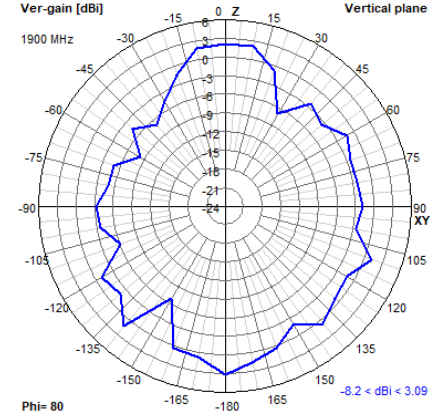
1900 MHz XY



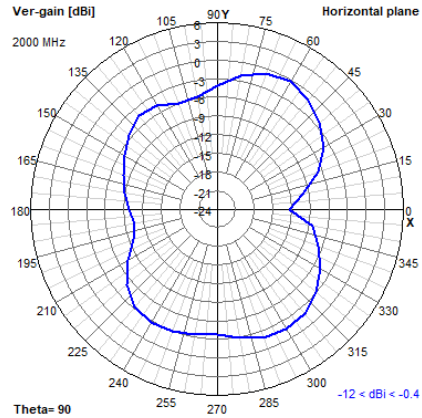
XZ



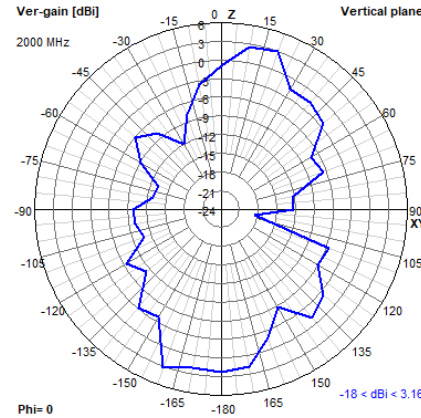
YZ



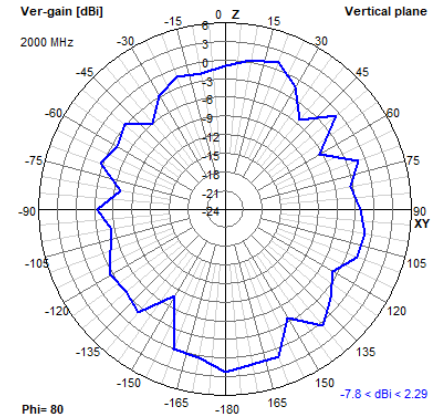
2000 MHz XY



XZ



YZ



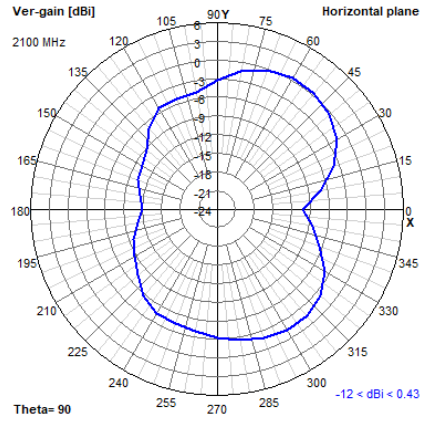


Alpha 11

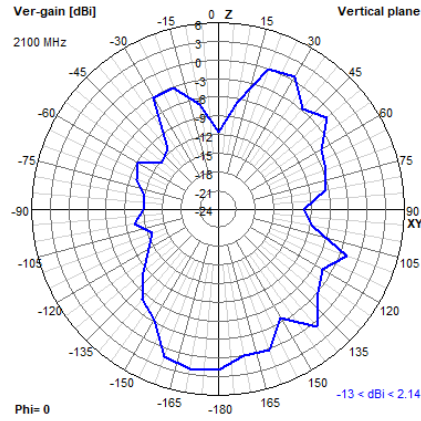
Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

2D Radiation Plots

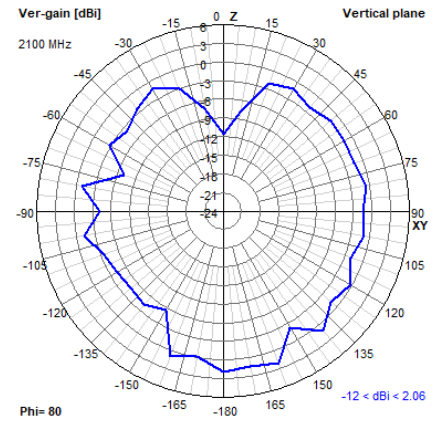
2100 MHz XY



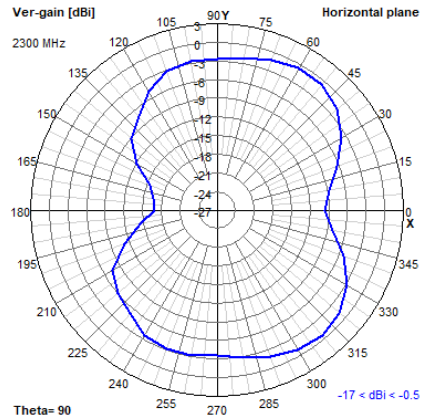
XZ



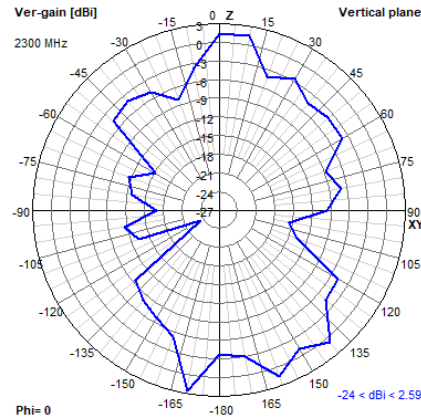
YZ



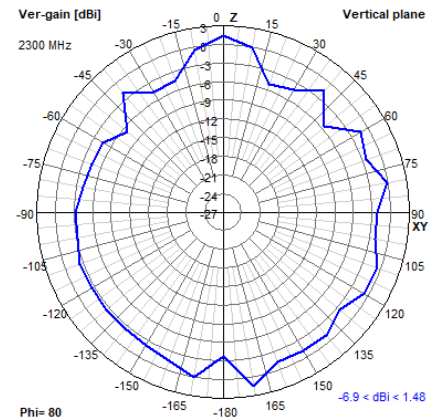
2300 MHz XY



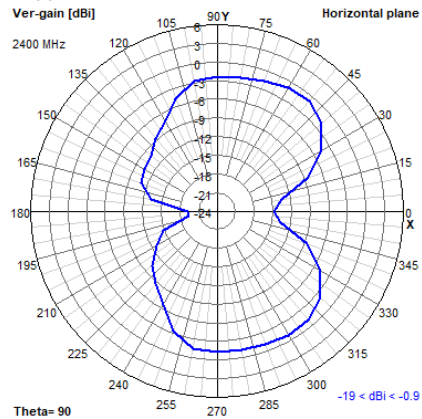
XZ



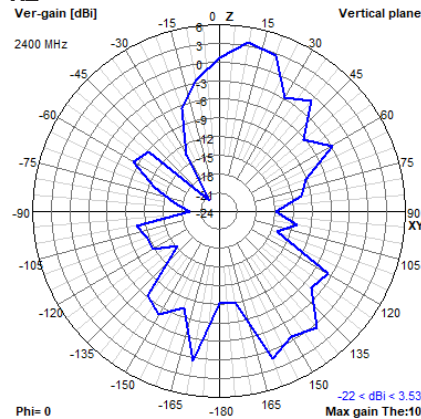
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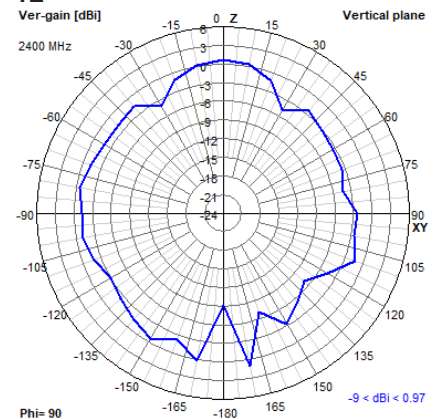
2400 MHz XY



XZ



YZ



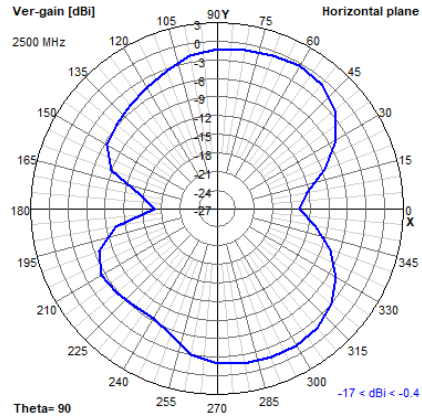


Alpha 11

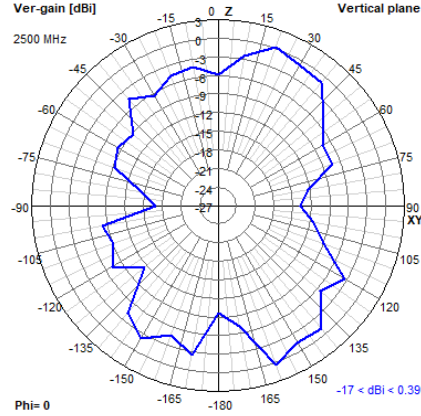
Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

2D Radiation Plots

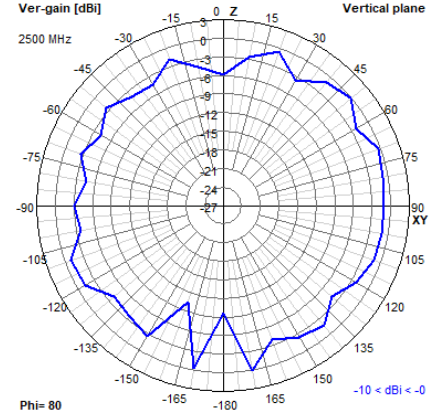
2500 MHz XY



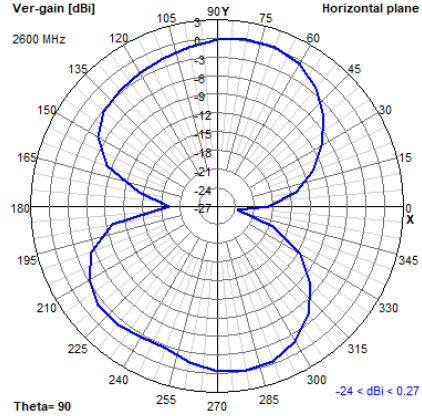
XZ



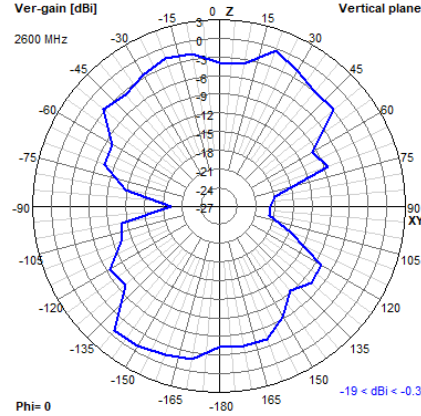
YZ



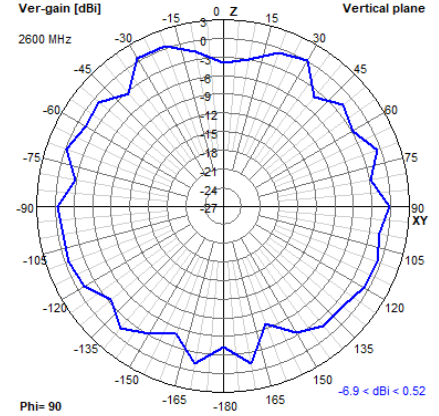
2600 MHz XY



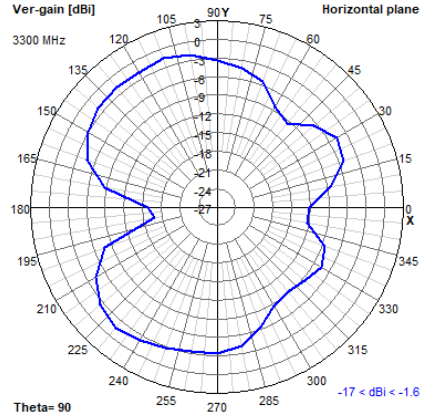
XZ



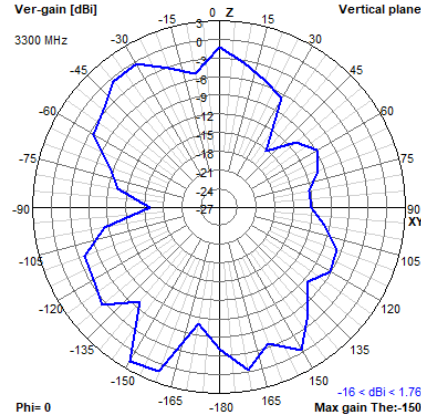
YZ



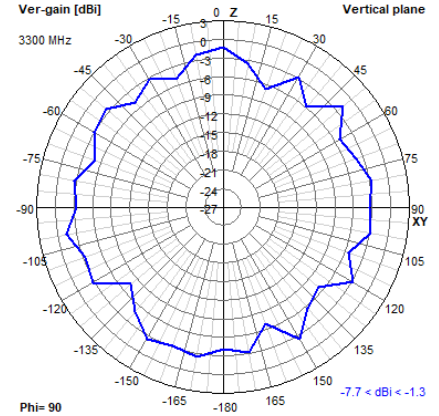
3300 MHz XY



XZ



YZ



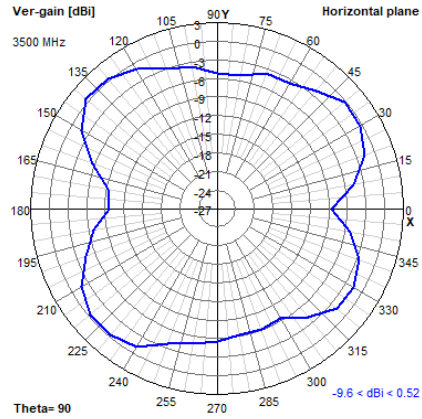


Alpha 11

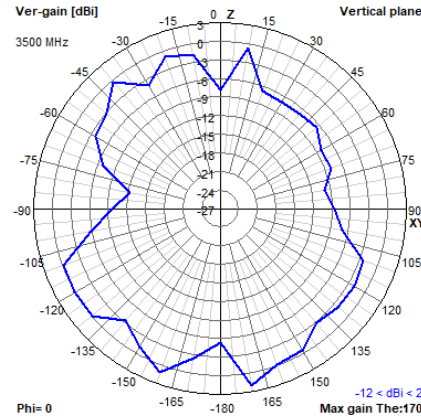
Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

2D Radiation Plots

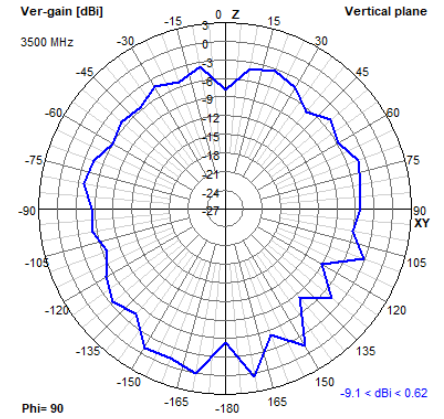
3500 MHz XY



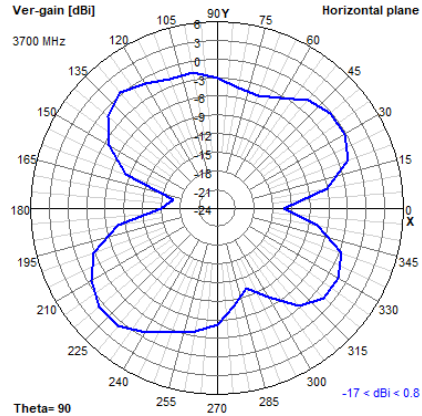
XZ



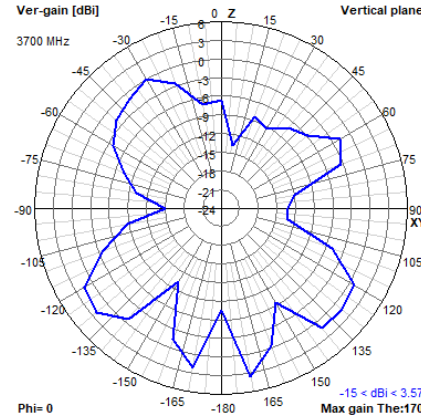
YZ



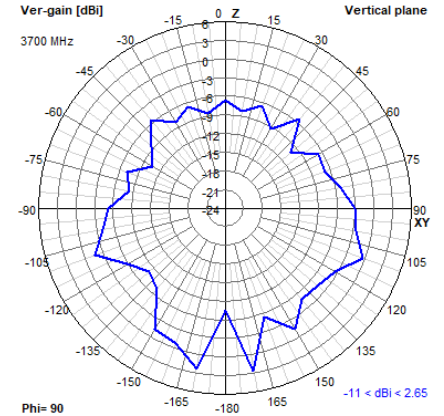
3700 MHz XY



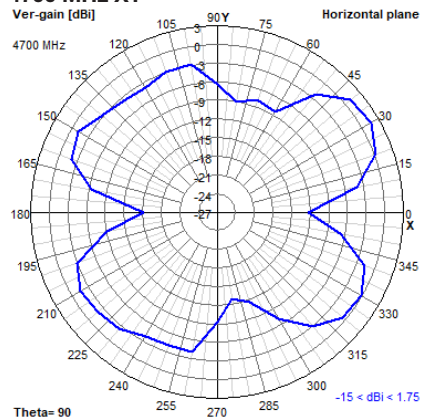
XZ



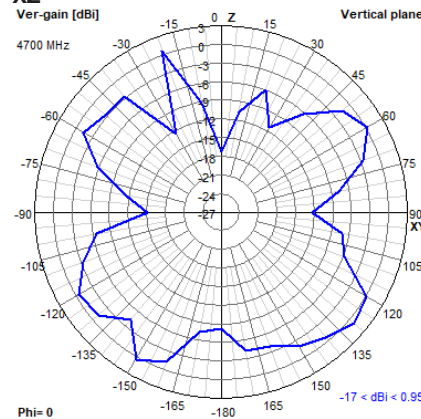
YZ



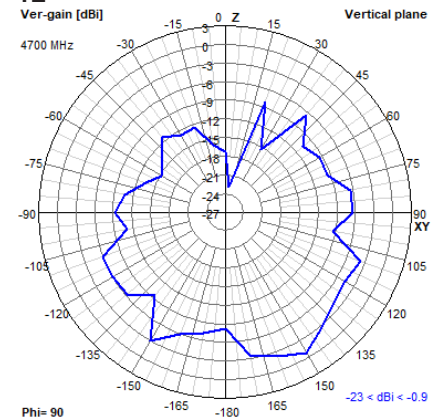
4700 MHz XY



XZ



YZ



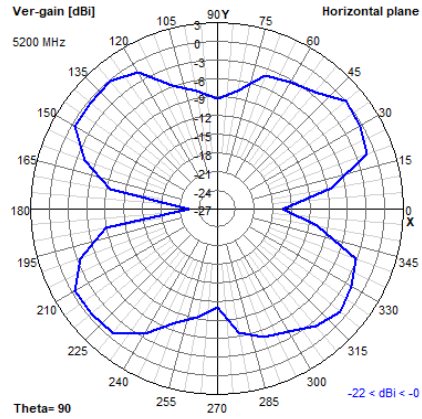


Alpha 11

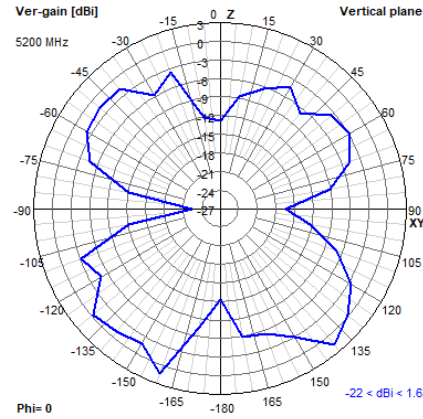
Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

2D Radiation Plots

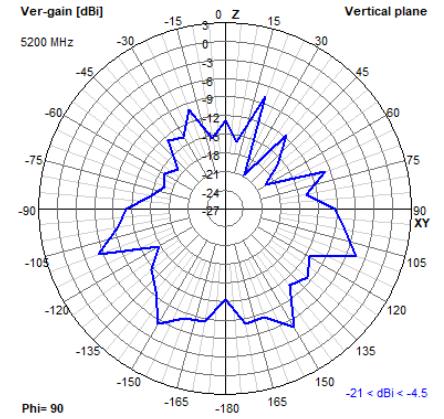
5200 MHz XY



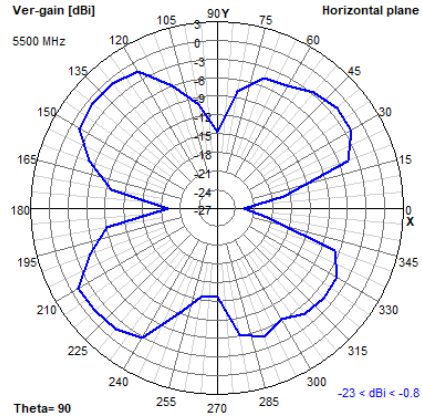
XZ



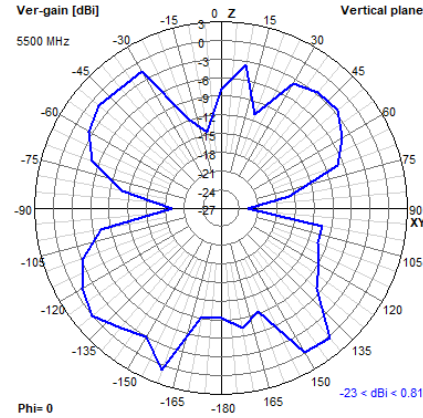
YZ



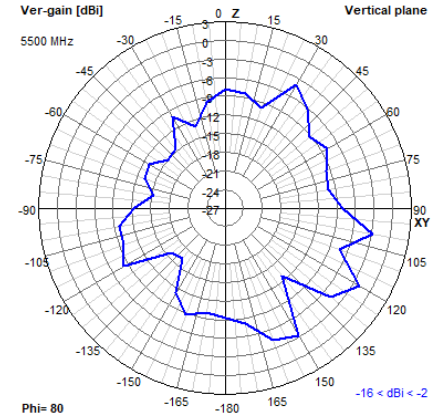
5500 MHz XY



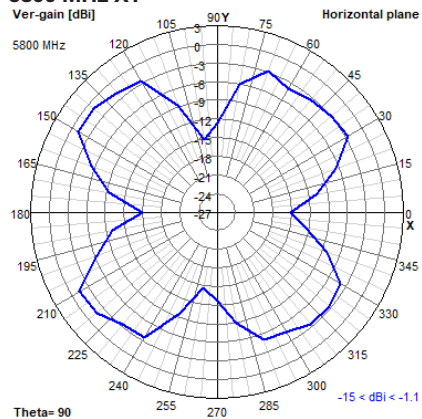
XZ



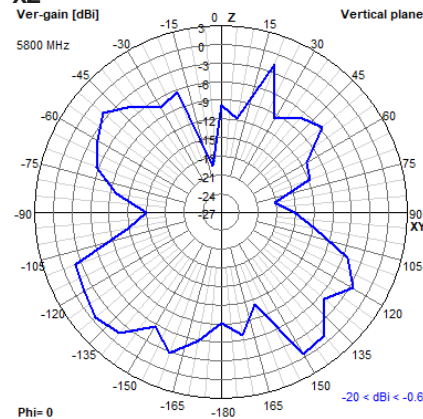
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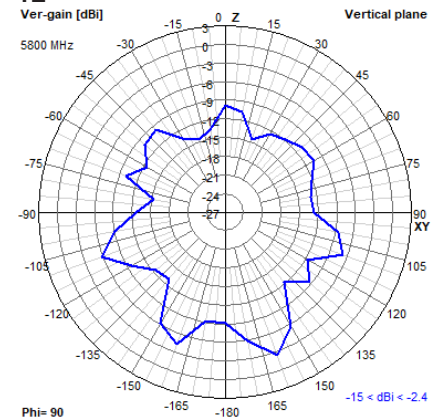
5800 MHz XY



XZ



YZ



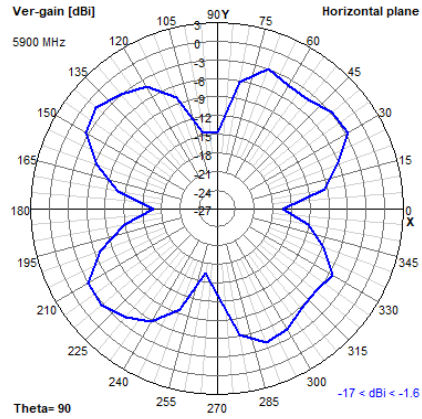


Alpha 11

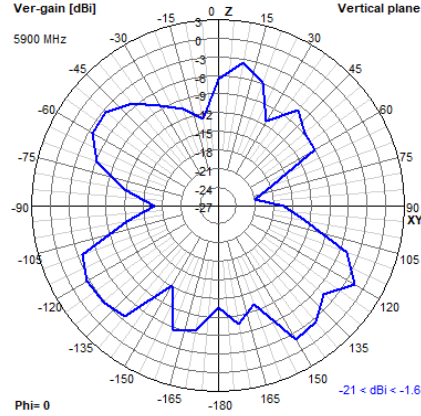
Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

2D Radiation Plots

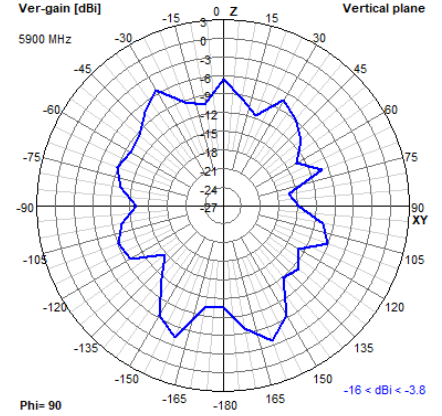
5900 MHz XY



XZ



YZ



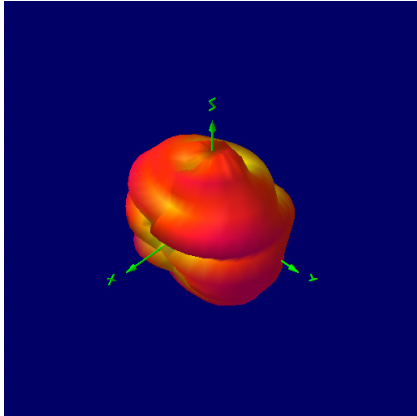


Alpha 11

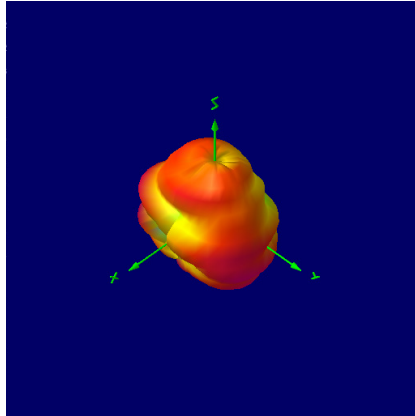
Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

3D Radiation Plots

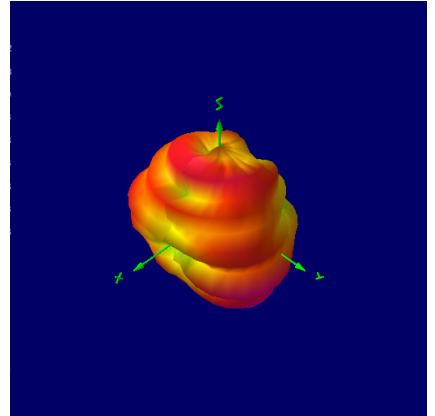
1500 MHz



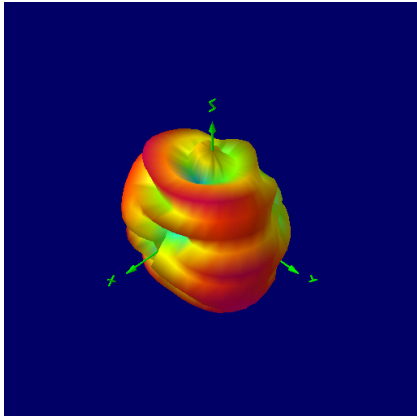
1600 MHz



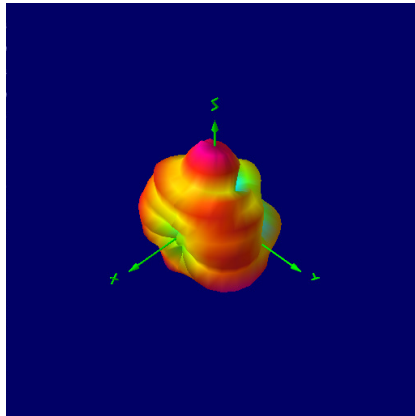
1700 MHz



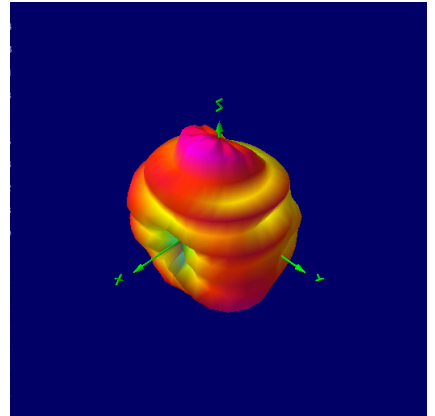
1800 MHz



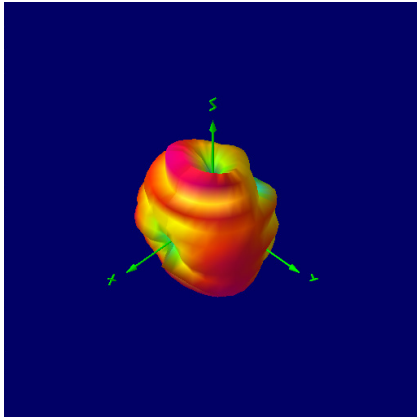
1900 MHz



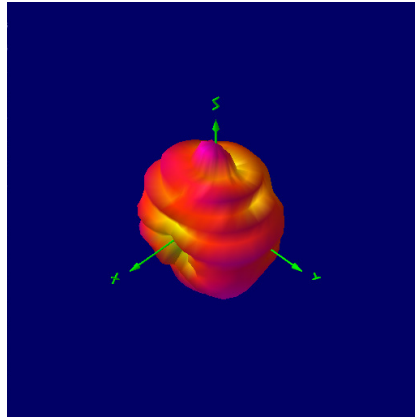
2000 MHz



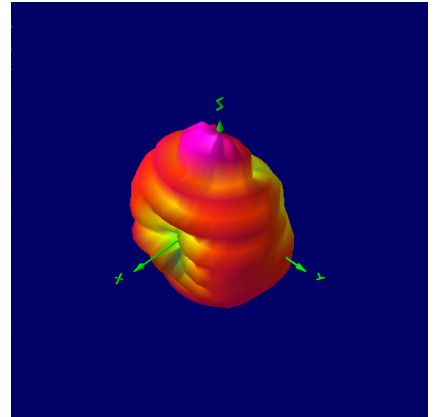
2100 MHz



2300 MHz



2400 MHz



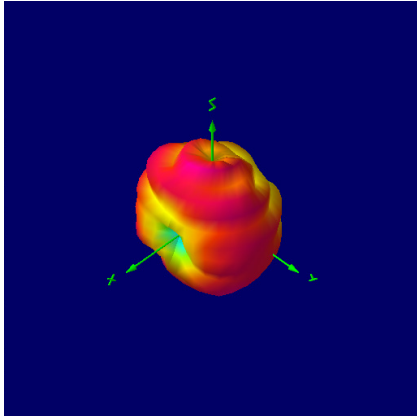


Alpha 11

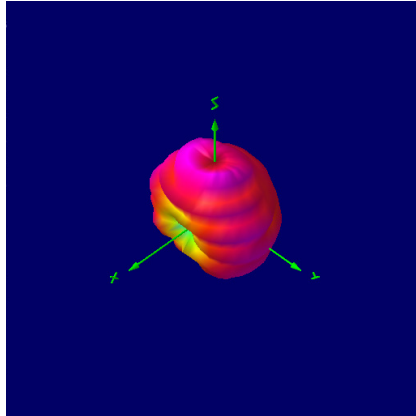
Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

3D Radiation Plots

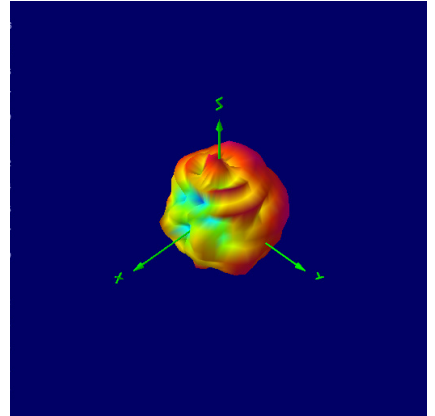
2500 MHz



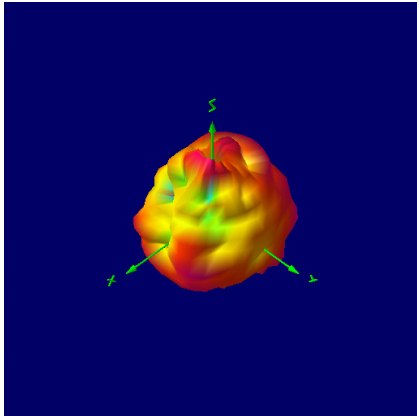
2600 MHz



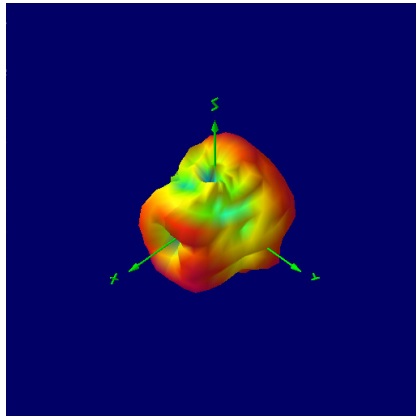
3300 MHz



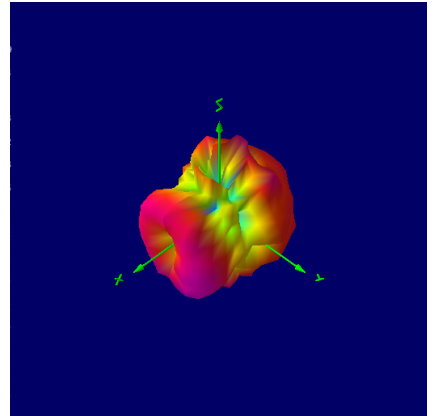
3500 MHz



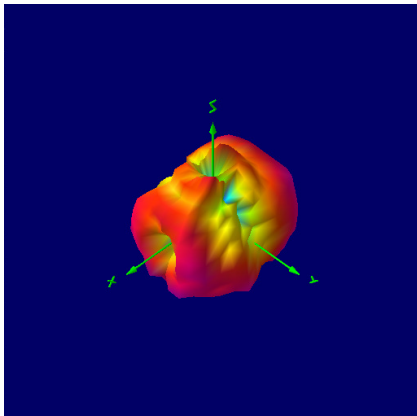
3700 MHz



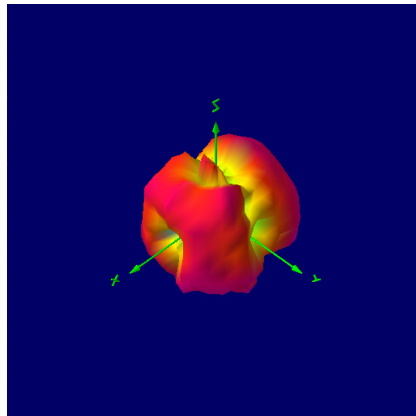
4700 MHz



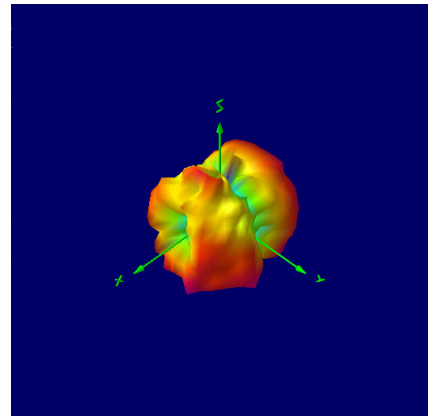
5200 MHz



5500 MHz



5800 MHz



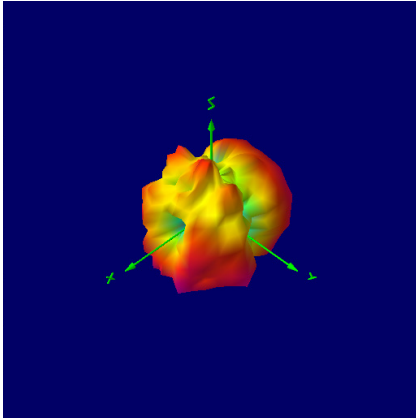


Alpha 11

Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna

3D Radiation Plots

5900 MHz



NOTE: All 3D radiation plots are shown with Theta = 45 and Phi = 45.

Ordering Details:

Part Number	Description
ALPHA11/0.2M/SMAM/S/S/20	Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna SMA Male 0.2m Cable
ALPHA11/1M/SMAM/S/S/20	Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna SMA Male 1m Cable
ALPHA11/2.5M/SMAM/S/S/20	Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna SMA Male 2.5m Cable
ALPHA11/2.5M/MCXM/S/S/20	Dual Band Wi-Fi 5G/4G Adhesive Flat Blade Antenna MCX male connector 2.5m Cable

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Siretta Ltd
Basingstoke Road
Spencers Wood
Reading
Berkshire RG7 1PW

sales
email
web

+44 118 796 9000
sales@siretta.com
www.siretta.com

Rev 4.1